Creating Credentials of Value in Community Colleges

Lessons From High-Performing Colleges




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Introduction

How do we prepare learners for high-wage, high-demand careers? Answering this question is more important than ever, given stagnating earnings and declining labor force participation among workers without bachelor's degrees (Nunn et al., 2019).[1,2] With more than one thousand community and technical colleges across the United States, they are the only institutions that operate at sufficient scale to prepare millions of students for careers in high-demand occupations and industries. Yet, they have mixed records of success. Less than one third of community college students go onto earn a certificate or an associate degree. And those who do beat these odds often struggle to become employed in high-wage jobs (Holzer & Baum, 2017).

Research on community college student outcomes has traditionally focused on understanding the reasons so few students go on to complete degrees and the effectiveness of interventions meant to address low completion rates (see Bettinger & Feygin, 2025). We know much less about the reasons community college students who do make it to the finish line seldom earn credentials that translate into labor market value. We conducted this study as a first step toward understanding the characteristics and practices of community colleges that appear to be relatively successful at producing graduates with credentials of value—that is, credentials worth at least $45,000 to $50,000 in annual salary (see Box 1). [3] Whereas research on community college outcomes tends to focus on the demographic characteristics and academic preparation of students, this study focuses on the characteristics of colleges and the regional economies in which they operate.

Box 1. How did we define "credentials of value"?

"Credentials of value" are credentials linked to occupational fields in which full-time workers with associate degrees make at least $50,000 per year and those with certificates make at least $45,000 per year.

[1] This report presents results from a qualitative study of the reasons some community colleges are more successful than others at producing credentials of value. The quantitative analysis that generates rankings of community colleges and explores their statistical correlates is available separately. A description of the methods for developing the rankings is in Appendix A.
[2] Labor force participation among male workers aged 25 to 34 without bachelor's degrees has increased since the COVID-19 recession but continues on a downward trend overall. For women of the same age without bachelor's degrees, labor force participation has risen (Fry et al., 2024). In addition, since the COVID-19 recession, there has been pronounced wage growth among workers without a bachelor's degree, leading to a compression of the wage differential between workers with and without bachelor's degrees (Autor et al., 2024). However, wage inequality remains high.
[3] In this brief, "value" refers specifically to wages. There are many ways to value credentials, and value may mean different things to different individuals. Workers may take into account other aspects of jobs when determining value, such as benefits and job satisfaction.

Using data from the Integrated Postsecondary Education Data System and the American Community Survey, we identified workforce credential completion rates and average earnings for all fields of study at all public community and technical colleges in the United States from 2011 to 2021. We ranked colleges on the basis of their relative success at generating credentials of value and used these rankings to identify colleges for further qualitative study to better understand why some community colleges are more successful than others. This paper reports findings from interviews with leaders at 35 colleges—including 25 colleges that are relatively successful at producing credentials of value (*excelling* colleges) and 10 colleges that were less successful at producing credentials of value (*aspiring* colleges)—to address the following research questions:

1. What systems, policies, and practices have relatively more successful public community and technical colleges implemented, and how do they differ from those implemented in less successful colleges?
2. Are there differences in practices based on colleges' type (technical or nontechnical) or regional economy (energy intensive or not energy intensive)?

There are several key findings related to the practices described by excelling and aspiring colleges. Overall, the study found incremental rather than categorical differences: many workforce-focused practices appear in both excelling and aspiring colleges, but leaders from excelling colleges report more of such practices and with greater breadth and intentionality. Throughout the interviews, leaders from excelling colleges tended to describe combining multiple, mutually reinforcing practices, such as purposeful program design and pathways, systematic integration of career readiness skills, broad and dynamic employer engagement, work-based learning at scale, and braided funding.

In addition to differences between excelling and aspiring colleges, we found differences in practices according to characteristics of colleges and their regional economies. College type (technical vs. nontechnical) and the type of economy of the state (energy intensive vs. not energy intensive) appeared to influence college practices. For example, colleges in energy-intensive states reported more intentional alignment of credit and noncredit programs, launching new programs in emerging industries (such as those focused on alternative energy), braiding funding sources to maximize resources, and greater use of labor market information (LMI) and wraparound supports to help students adapt to shifts to cleaner energy sources.

Background

This study focuses on community college workforce programs rather than general studies and liberal arts programs, which are designed to prepare students to transfer to 4-year colleges. In this section we define community college workforce programs and describe extant research on community college effectiveness and on workforce development in community colleges.

Defining Community College Workforce Programs

We consider programs and credentials to be workforce-focused when they prepare students for direct entry into the labor market in specific occupations or industries. We use the U.S. Department of Education's Classification of Instructional Programs to identify these programs and credentials, which span a wide range of industries such as manufacturing; transportation, distribution, and logistics; information technology; and health care. We focus only on credit-bearing programs—including those that grant both associate degrees and certificates—due to lack of data on noncredit programs. Example occupations and programs are highlighted in Exhibit 1.

Exhibit 1. Example Workforce Industries, Occupations, Programs, and Credentials

Industry/occupation	College program	Credential	Program length	Median salary
Manufacturing				
Production operator	Manufacturing production and operations	Certificate[a]	31 credits (2–3 semesters)	$36,000
Transportation, distribution, and logistics				
Supply chain technician	Supply chain management and logistics	Certificate[a]	21 credits hours (2–3 semesters)	$57,000
Truck driver	Commercial driver's license	Certificate	18 credit hours (2 semesters)	$57,000
Information technology				
IT help desk specialist	Information technology help desk	Certificate	23 credit hours (2 semesters)	$46,000
IT technical support specialist	Information technology support	Certificate[a]	30 credit hours (2 semesters)	$55,000
Health care				
Pharmacy technician	Pharmacy technician	Certificate	19 credit hours (2 semesters)	$34,500
Phlebotomy technician	Phlebotomy technician	Certificate	18 credit hours (2 semesters)	$38,000

Industry/occupation	College program	Credential	Program length	Median salary
Clinical services specialist	Healthcare specialist—clinical support	Certificate	30 credit hours (2–3 semesters)	$72,000

Note. Example occupations and credential programs are based on programs offered at Indiana's Ivy Tech Community College (https://www.ivytech.edu/) and ZipRecruiter salary estimates for Indiana (https://www.ziprecruiter.com/).

[a] Associate of Applied Science degree also offered, which is 60 credits (4 semesters).

WHERE IS WORKFORCE TRAINING DELIVERED?

Community colleges are one type among many providers of workforce training. Other providers include

- high schools, which provide dual enrollment career and technical education courses that allow students to earn high school and college credit simultaneously (Klein et al., 2023);
- workforce development agencies, which use federal funding from the Workforce Innovation and Opportunity Act to train adults with low income, dislocated workers, and youth who face barriers to employment, such as having criminal records, basic skills deficiencies, and homelessness (Deming et al., 2023);
- private, for-profit occupational colleges that offer certificates, associate degrees, and bachelor's degrees but are best known for their certificates in fields like cosmetology, massage therapy, culinary arts, and health and medical assistant services;[4] and
- incumbent worker programs and apprenticeship programs that provide on-the-job training for individuals to gain industry-recognized credentials that help them advance in current or new jobs.

Although these programs are important players in the broad landscape of workforce training, the current study focuses on workforce training delivered by public community and technical colleges because they represent the greatest number of providers of workforce training in the United States.

What We Know About Community College Effectiveness

Community and technical colleges play a critical role in the U.S. higher education system, providing direct paths to the labor market and serving as stepping stones to 4-year colleges. These colleges develop the skills that workers need to obtain well-paying jobs in high-demand industries (such as health care, advanced manufacturing, and information technology) and the skills employers need to be competitive in regional labor markets. But completion rates at these colleges are low—even lower for racial/ethnic minority students and those from low-income backgrounds (National Center for Education Statistics [NCES], 2025)—and the labor

[4] For-profit colleges have been criticized for poor student outcomes and tendency to leave students with significant debt (Cellini & Turner, 2016; Howarth & Stifler, 2019).

market value of credentials earned is mixed. Students with more limited means who do not finish a credential often pile up significant debt and default on their loans (Baum et al., 2021).

Why are student outcomes at 2-year colleges so mixed? Many students have weaker academic preparation, too little information about which program options are best for them, and pressure to support families—often meaning that they need to work full time and attend college part time (Holzer & Baum, 2017). Further, public 2-year colleges are underfunded, especially considering the large number of low-income students they serve (The Century Foundation, 2019a); provide too little structure and guidance to students, who often begin programs they have difficulty completing and take courses that are not applicable to their degrees (Bailey et al., 2015; Holzer & Xu, 2021); and face limited incentives to improve because funding is typically tied to enrollments rather than outcomes.

Colleges have implemented and tested numerous student-facing policies and programs aimed at improving persistence and degree completion, such as advising and student supports (Barnett et al., 2012; Miller et al., 2020a; Rutschow et al., 2012; Scrivener & Au, 2007; Visher et al., 2012), developmental education reform (Douglas et al., 2023; Kopko et al., 2023; Sepanik & Barman, 2023; Weiss & Headlam, 2018), financial aid (Dynarski et al., 2022; Jaggars, 2020; Mayer et al., 2015; Weissman et al., 2019), and comprehensive student support programs (Hallberg et al., 2023; Miller et al., 2020b; Sommo et al., 2023). Although these programs have shown improvements in short-term outcomes like credit accumulation and grade point average, early successes by and large have not translated into increases in degree completion, employment, or earnings. One exception is the Accelerated Study in Associate Program (ASAP), which provides students with a wide range of financial and academic supports to address common barriers to success. ASAP is widely regarded as an effective model, having been rigorously tested in multiple randomized controlled trials (Miller et al., 2020b; Scrivener et al., 2015). However, ASAP is only available to full-time students in associate degree programs, thereby excluding many students—if not the majority—in workforce programs.

Whole-college reform models like Guided Pathways and Achieving the Dream, which aim to change the way community colleges are structured to more effectively support students, have shown only modest evidence of success. Achieving the Dream, launched in 2004, helped colleges create a “culture of evidence” by tracking progress on key indicators such as completion of developmental courses and semester-to-semester persistence. This approach aims to identify barriers to student success and implement strategies designed to address these barriers. Although colleges made strides toward increasing the use of data and evidence, student outcomes generally did not improve (Jenkins et al., 2012; Mayer et al., 2014; Rutschow et al., 2011).

Guided Pathways, introduced in 2015, is another whole-college reform model that sought to improve student outcomes through large-scale changes in practice (Bailey et al., 2015). Guided Pathways focus on providing structured sequences of courses along a career pathway, ensuring that students avoid common pitfalls, such as wasting time and money by taking courses that do not count toward their intended credential. Correlational research on Guided Pathways has shown mixed evidence of success. For example, a recent study found no association between Guided Pathways and student outcomes in two states, but a positive association in a third state (Minaya & Acevedo, 2024).

Other programs and policies have focused on reforming the way colleges are funded. Research has found that more funding for colleges, particularly those with lower baseline spending, is related to increases in enrollment and degree completion (Avery et al., 2019; Deming & Walters, 2017). Most states have enacted some form of performance-based funding for colleges, which ties a portion of state funding for colleges to student outcomes—most often, degree completion (Rosinger et al., 2020). A systematic synthesis of the literature found that performance-based funding policies spurred colleges to implement new academic and student support services but found negligible impact on student outcomes to date (Ortagus et al., 2020).

Workforce Development in Community Colleges

Few studies have looked specifically at workforce development programs in community colleges. Descriptive studies reveal that students in these programs encounter barriers to success that are both similar to and different from those faced by students in general studies or liberal arts programs (that is, programs designed to prepare students to transfer to 4-year colleges). Like students in liberal arts programs, students in workforce programs lack sufficient guidance. In interviews with community college students in workforce programs in Chicago, Coca et al. (2024) found students' decisions were driven by a desire for personal satisfaction, meaning, and joy rather than labor market outcomes. Students may need more information about job availability and earnings in the fields they are considering to ensure that they are making informed choices that balance their interests with the realities of the labor market.

Also, like students in liberal arts programs, students in workforce programs lack sufficient financial support. This challenge is magnified in some workforce programs because federal financial aid from Title IV of the Higher Education Act, including Pell grants and federal loans, has until recently not been available to students enrolled in short-term or noncredit programs. A student seeking a noncredit credential, such a certificate in HVAC installation or repair, might have to pay full tuition while another student pursuing a 2-year degree in general studies—a credential with little market value (Holzer & Baum, 2017)—may be eligible for a Pell grant to help cover the costs. Legislation passed in 2025 (the "One Big Beautiful Bill Act") included

funding for "Workforce Pell," which may ease some of this financial burden for students in workforce programs. However, many questions remain about its implementation.[5]

The labor market success of students in workforce programs may also be hindered by relatively weak relationships of most community colleges with local and regional employers. Economic conditions can affect college enrollment. For instance, certificate attainment rises when local unemployment rises (Acton, 2021). But Fuller and Raman (2023) note the low confidence of employers in the skills and employability of community college graduates and employers' generally low involvement in designing curricula or providing job opportunities.

Some community colleges are developing innovative approaches to addressing these problems, including aligning noncredit and credit programs through linked courses or stackable credentials,[6] new models of financial aid for noncredit students, and much more engagement with regional employers in designing curricula and helping students find opportunities for work-based learning and subsequent employment. The best summary to date of these efforts is in Schwartz and Lipson (2023), which includes case studies of five well-known institutions. This study seeks to provide additional qualitative evidence of the policies and practices that support students to attain credentials of value, creating a basis for more rigorous evaluation to follow.

Methodological Approach

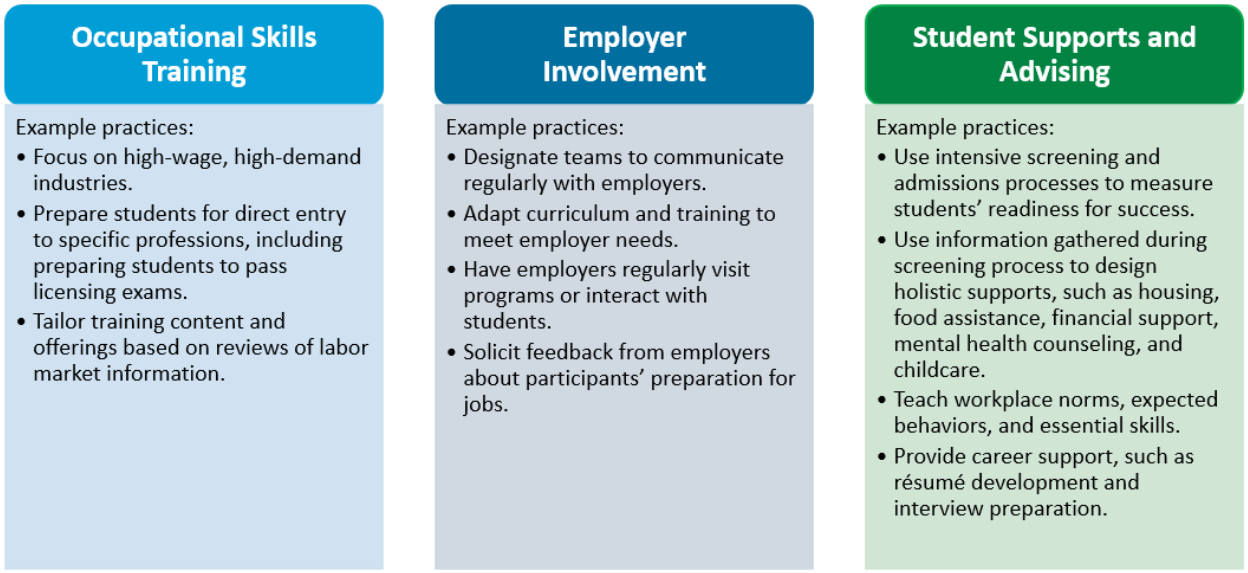
This study was guided by a framework developed by Rutschow et al. (2024), who reviewed rigorous research on sector-focused workforce training programs—or sectoral programs. Sectoral programs are among the few types of workforce training programs that have shown consistent success at preparing individuals for high-wage, in-demand careers. In randomized controlled trials, three programs demonstrated remarkable long-term success: Per Scholas, Year Up, and Project QUEST (for a summary, see Rutschow et al., 2024).

Rutschow and colleagues conducted interviews with program leaders from Per Scholas, Year Up, and Project QUEST to identify common practices that could explain their success. They found that the three programs shared 21 common program features, which the authors organized into three dimensions: occupational skills training, employer involvement, and

[5] In the One Big Beautiful Bill Act, enacted in 2025, there are a number of criteria that must be met for programs to be eligible (like average earnings above those of local high school graduates). It remains unclear which programs will meet these criteria.
[6] Cormier et al. (2020) describe colleges' efforts to align credit and noncredit programs through linked courses, which are taught by credit faculty who hold credit and noncredit students to the same learning outcomes. Noncredit students can petition to turn these continuing education units into credit. Further, many community colleges are developing "stackable" credentials, whereby shorter certificates can be combined with additional learning to generate associate degrees. Bailey and Belfield (2017) cast doubt on whether many students actually stack their credentials or whether the labor market rewards these efforts, but Meyer et al. (2022) show more positive impacts.

student supports and advising (see Exhibit 2). Although the three programs differed in their admissions process, student populations served, approach to occupational skills training, and industry focus, they produced remarkable results through their focus on these three dimensions. These dimensions lay the groundwork for the current study, providing a guiding framework for data collection and analysis.

Exhibit 2. Guiding Framework



Source. Rutschow et al., 2024.

Sample

We conducted interviews with leaders at 35 colleges to understand the systems, policies, and practices implemented by colleges with varying degrees of success at generating credentials of value. Our interview sample included leaders from colleges ranked in the quantitative analysis in the top tercile for producing credentials of value (which we refer to as *excelling colleges*) and from colleges ranked in the bottom tercile (which we refer to as *aspiring colleges*). The methods used to develop the rankings are described in Appendix A.

Because state policy plays an important role in the way community and technical colleges are structured, we limited the number of states represented in our sample to support within- and across-state comparisons. We included California, Texas, and Florida because of their size, demographic breadth, and large numbers of community colleges; Georgia and Wisconsin because of their strong technical college systems; and Louisiana, Ohio, Pennsylvania, West Virginia, and Wyoming because of their focus on energy production or energy-intensive manufacturing in a time of transition to cleaner energy sources (throughout, we refer to these states as "energy intensive"). We contacted leaders at colleges within these states to request

their participation in interviews, resulting in a final sample of 25 excelling colleges and 10 aspiring colleges (see Exhibit 3).[7]

Compared with aspiring colleges, excelling colleges were more likely to be technical colleges and located in urban or suburban communities (see Exhibit 4). At the same time, our sample—and the broad population of community colleges—contains a number of excelling colleges that were nontechnical and located in rural areas—indicating that workforce program excellence can be found in institutions with varying characteristics. Instructional spending at excelling colleges is substantially higher than at aspiring colleges, whereas spending on student services and academic supports is not.[8] The demographic characteristics of excelling and aspiring colleges' student bodies are similar; just under half of students in both excelling and aspiring colleges are White and eligible for Pell Grants (see Exhibit 5).

Exhibit 3. Distribution of Excelling and Aspiring Colleges, by State and Type of College

State	Number of colleges participating in interviews	
	Excelling colleges (*n*)	Aspiring colleges (*n*)
California	1	2
Florida	3	2
Georgia	2	0
Louisiana[a]	3	0
Ohio[a]	5	1
Pennsylvania[a]	2	0
Texas[a]	4	3
West Virginia[a]	0	1
Wisconsin	4	0
Wyoming[a]	1	1
Total	**25**	**10**

Source. Authors' analysis.

[a] These states are considered "energy intensive" because of their focus on energy production or energy-intensive manufacturing.

[7] The sample included more excelling than aspiring colleges because we had more difficulty recruiting the latter.

[8] Differences in spending could be driven by several factors, such as differences in the local tax base, differences in the types of degree programs (that is, some degrees may be more expensive due to the need for equipment or space), and differences in how states fund community colleges (that is, the level of funding and whether funding is tied to performance, seat time, or other measures).

Exhibit 4. Characteristics of Sample Colleges

Characteristic	Percentage and number of colleges participating in interviews	
	Excelling colleges, % (*n*)	Aspiring colleges, % (*n*)
Locale		
City	60 (15)	30 (3)
Suburb	20 (5)	20 (2)
Town	4 (1)	40 (4)
Rural	16 (4)	10 (1)
Type		
Technical	36 (9)	0 (0)
Nontechnical	64 (16)	100 (10)
Region		
East	8 (2)	10 (1)
South	48 (12)	50 (5)
Midwest	36 (9)	10 (1)
West	8 (2)	30 (3)
Energy-intensive states		
Energy intensive	60 (15)	60 (6)
Not energy intensive	40 (10)	40 (4)
Spending per FTE[a]		
Instructional spending per FTE[b]	$9,134	$5,982
Student services spending per FTE[c]	$2,216	$1,915
Academic support spending per FTE[d]	$1,477	$1,545

Source. Authors' analysis and NCES, n.d.

[a] FTE is full-time equivalent student. Spending per FTE student is for fiscal year 2024.

[b] NCES defines instructional expenses as "general academic instruction, occupational and vocational instruction, community education, preparatory and adult basic education, and regular, special, and extension sessions."

[c] NCES defines student services expenses as "expenses for admissions, registrar activities, and activities whose primary purpose is to contribute to students' emotional and physical well-being and to their intellectual, cultural, and social development outside the context of the formal instructional program." Examples include student activities, cultural events, intramural athletics, student organizations, and supplemental instruction.

[d] NCES defines academic support expenses as "expenses of activities and services that support the institution's primary missions of instruction, research, and public service. It includes the retention, preservation, and display of educational materials (for example, libraries, museums, and galleries); organized activities that provide support services to the academic functions of the institution (such as a demonstration school associated with a college of education or veterinary and dental clinics if their primary purpose is to support the instructional program); media such as audiovisual services; academic administration (including academic deans but not department chairpersons); and formally organized and separately budgeted academic personnel development and course and curriculum development expenses."

Exhibit 5. Average Characteristics of the Student Bodies of Sample Colleges

Characteristic	Average percentage of students in colleges participating in interviews	
	Excelling colleges, %	Aspiring colleges, %
Racial/ethnic composition		
Asian	3	2
Black or African American	17	10
Hispanic or Latino	25	36
Other[a]	9	10
White	46	42
Percentage of degree or certificate-seeking students who are Pell eligible		
Pell eligible	47	46
Not Pell eligible	53	54

Source. NCES, n.d.

[a] Other includes American Indian or Alaska Native, Native Hawaiian or Pacific Islander, two or more races, and not reported.

We conducted one-on-one or small-group interviews with participants who occupied varied roles at these colleges, including college presidents, vice presidents, provosts, vice chancellors, deans, and associate deans, typically in career and technical education programs, workforce development, or academic affairs. For some colleges, the time scheduled for the interview was insufficient to complete it; we conducted follow-up interviews to continue the conversation. For other colleges, we held multiple interviews to meet with leaders in different roles. Finally, we conducted supplemental interviews with leaders at three college systems (Wisconsin, Georgia, and California). These interviews provided additional context for the findings.

Interview Methods

Before conducting interviews, we developed a semistructured discussion protocol (see Appendix B) to guide the conversations. The questions aligned with the three key categories of practices—occupational skills training, employer involvement, and student supports and advising—identified by Rutschow et al. (2024) in their in-depth review of the practices that accounted for the success of effective sectoral programs. The discussion protocol included questions in each of those three categories and focused specifically on workforce programs.

We conducted virtual interviews with colleges leaders, which varied from 30 to 60 minutes based on the availability of focus group participants. Audio recordings produced by the virtual meeting platform were transcribed and uploaded to NVivo, a qualitative data analysis software

program. Using the discussion protocol and the framework for effective sectoral programs (Rutschow et al., 2024), we developed a detailed codebook to support robust within- and cross-case analyses of the interview data. Codebook development entailed two major steps: (1) We established a preliminary set of codes based on our key constructs of interest, and (2) we used this preliminary set of codes to code a sample of the interview transcripts, using deductive coding methods to generate a final set of codes.

We then applied the final codebook to all the transcripts. Throughout the analytic process, we engaged in regular communication within our team to ensure consistent application of the coding structure, strategies, and rules for coding the data. We also identified and discussed major patterns and themes to support shared understanding and interpretation of the coded data. The analysts compared patterns in responses from excelling and aspiring colleges, as well as comparing patterns by colleges' type (technical or nontechnical) and state economy (energy intensive or not energy intensive).

Limitations

This study provides important insights into the practices that drive successful creation of credentials of value. However, it has two primary limitations, and as a result, should be interpreted cautiously and viewed as a starting point for further research and rigorous evaluation. The first limitation is that the sample was small, especially for aspiring colleges, and not representative of the broader population of community colleges in the United States. Second, because the interviews were short (an average of 45 minutes each) and semistructured, not all colleges answered the same questions or had time to describe the full suite of strategies or approaches they were using. Although the study team used a common set of high-level questions, follow-up questions varied based on each respondents' answers. As a result, the findings may underestimate the number of colleges engaging in certain practices.

Findings

This section describes qualitative findings from interviews with leaders at 35 colleges (25 excelling colleges and 10 aspiring colleges). As noted above, these results reflect the priorities and perspectives shared by the leaders we interviewed; they may not capture the full range of strategies and approaches in use at their colleges. Still, the findings provide insight into practices that merit further exploration and research.

Occupational Skills Training

Interviews with college leaders explored the ways each identified, structured, and funded occupational skills training. The findings are organized by four key topics—programmatic

decision making, connections between workforce and academic programs, emphasis on career readiness skills, and workforce funding sources—that emerged from the interviews, summarized here and described further in the sections below. Although nearly all colleges adapt their programs to meet workforce needs, excelling colleges distinguish themselves through purposeful integration of career readiness skills, an emphasis on stackable credentials, and varied funding strategies.

- **Programmatic decision making**. Leaders from most colleges, regardless of their success at producing credentials of value, said they based program and curriculum decisions on local employer and labor market needs. However, leaders from excelling colleges were more likely to say they prioritized both job availability and job quality in their decision making.
- **Connections between workforce and academic programs**. Leaders from most colleges that described their workforce program structure said they offer a mix of credit and noncredit workforce credentials, but leaders from excelling colleges described more intentionally braiding these pathways, designing programs that allow students to progress from entry-level certificates to diploma and degree programs.
- **Emphasis on career readiness skills**. Although leaders from both excelling and aspiring colleges discussed some form of career readiness or essential skills[9] training, excelling colleges were more likely to require dedicated courses that taught those skills and offered employers guarantees that graduates would be prepared for success in the workplace.
- **Workforce funding sources**. Leaders from all colleges reported struggling with consistent and reliable sources of funding, and most braided together multiple funding sources. Leaders from excelling colleges more often reported combining public, private, and philanthropic sources to offer low- or no-cost training, whereas leaders from aspiring colleges reported relying on a narrower set of funding streams and experiencing greater funding instability.

Programmatic Decision Making

We asked college leaders how they make decisions about which programs to offer and what to include in the curriculum. The local economy and employer needs were the most commonly cited drivers of programmatic decisions for both excelling and aspiring colleges, although leaders from excelling colleges were somewhat more likely to describe these as drivers (20 of 25, or 80%, of excelling colleges and 6 of 10, or 60%, of aspiring colleges).

[9] Essential skills—often referred to as soft skills or employability skills—are the skills required for success in any workplace, such as communication, collaboration, problem solving, and time management.

College leaders described a deliberate effort to align program offerings with regional labor market needs by removing programs that no longer served the local economy—such as a robotics program with no employer demand—and adding new programs to support emerging demands. A leader from an excelling college in an urban area explained, "Demand and the jobs that are in demand drive the decisions and the work we're doing." Leaders from two excelling colleges emphasized the importance of not just job availability but job quality, noting that they "look at both what jobs are in demand, and which offer a living wage." Leaders from five colleges (four excelling and one aspiring) also said they worked closely with employers to ensure that the training met their needs, as exemplified by the quote in Box 2.

Box 2. Employer Needs Drive Programming

We partner quite closely with employers to deliver training that meets their needs. Sometimes that training is a version of the open enrollment course or courses. Sometimes it's unique and different. Again, we sort of follow their lead in terms of what they're looking for and what they need.

– Representative from an excelling, nontechnical college

Connections Between Workforce and Academic Programs

Leaders from a majority of colleges (76% of excelling and 40% of aspiring colleges) spoke about opportunities and challenges regarding the structure of their workforce programs, including the availability of short-term programs, aligning academic and workforce programs, developing programs for specific populations, and leveraging the flexibility of noncredit programs.

Short-Term Workforce Programs. Leaders from seven excelling colleges (28%), two excelling technical college systems,[10] and one aspiring college (10%) described the benefit of offering open-access and short-term workforce programs, with flexible start dates and minimal entry requirements, and often lasting 4 to 16 weeks. This approach, they noted, helped students quickly gain skills needed by local employers. A leader from an excelling technical college system stated, "Traditionally, [technical certificates] were at least a semester length, but we've heard very clearly from our employers that they don't want to wait 16 weeks to get graduates. We've been building programs that are 4 weeks, 8 weeks, in length to help get these students into the workplace [quickly]." In a separate interview with a leader from an excelling college within this system, the leader noted that they had developed even shorter programs, which allowed students to earn microcredentials in 90 days or less. These programs were designed to help students "get in, get out . . . get a credential of value." Although leaders from one aspiring college also described offering short-term noncredit programs, the offerings were housed in the college's noncredit "Corporate and Community Education" arm, rather than offered as a collegewide approach.

[10] We refer to colleges systems as excelling when all sample colleges in that system are excelling. Two of three colleges systems that participated in interviews are excelling.

Alignment Between Workforce and Academic Programs. Leaders from nearly a quarter of the excelling colleges described intentional efforts to braid together credit and noncredit programs (see Box 3). In addition, leaders from more than half of the excelling colleges and two aspiring colleges emphasized the importance of making workforce credentials stackable; that is, designing them to articulate seamlessly into credit-bearing certificates, diplomas, and associate degrees. Leaders from technical colleges and those in energy-intensive states were somewhat more likely than their counterparts to describe this intentional articulation.

Box 3. Aligning Credit and Noncredit Programming

We brought them [noncredit and credit] all together in 2012 because we realized, we believe it's essential that our credit faculty understand exactly what we're teaching in noncredit for those students who want to bridge the gap between credit and noncredit, but also for the employers, we want everything to be the same quality as our academic programs.

– Representative from excelling, nontechnical college

Leaders from excelling colleges were more likely than those from aspiring colleges to describe having established clear ladders from entry-level certificates (such as phlebotomy) to advanced diplomas and degrees (such as in allied health fields). As one leader explained, "We try to tailor all of those degrees or certificates or tech diplomas to ladder into larger degrees. . . . If we're offering a certificate program, that should ladder seamlessly into a tech diploma or associate degree." Leaders at one excelling college noted that stacking credentials benefited students who might need to start and stop their education, for example, if they needed to work full time or care for a family member. In one technical college system, leaders were able to make credential stacking and breaking the curriculum into smaller chunks a statewide priority (see Box 4).[11]

Box 4. Excelling Technical College System Emphasizes Investment in Career Pathways

We're also heavily invested in the state in guided career paths. We have varying fiscal capacities amongst our colleges, and there are various sizes, but in general, we've invested heavily in stackable credentials and chunking out our curriculum so that students have multiple on and off ramps.

– Representative from excelling, technical college system

[11] The extent to which students are actually choosing to stack their courses and desired credentials when they face these options, or how much such stacking affects earnings, remain unclear (Bailey & Belfield, 2017).

Further, stackable credentials with defined pathways help students see a clear path toward increasing career opportunities. At one aspiring college, certificates are intentionally aligned with coursework and digital badges to help students see their progress within a larger program (see Box 5). The deliberate approach of embedding industry-recognized credentials into credit-bearing programs may shorten time to employment and provide students with clear next steps for career advancement. As noted by a leader from the aspiring college that uses this approach, "[Stacking credentials] makes [students] more job-ready, sooner, and makes them more appealing to employers."[12]

Box 5. Digital Badges Help Students Track Progress Along Pathway

One of the things we did was, we built some digital badges to help students see the pathway a little bit better. So, when they complete one class [or] one program, they get a badge. [For example, they can tell if a class is] like part one of three.

– Representative from an aspiring, nontechnical college

Programs for specific populations. Leaders from four excelling and one aspiring college shared that they partnered with employers to provide workforce training for incumbent workers. They delivered customized, contract-based upskilling for current employees, often rapidly adapting or modularizing content to meet specific industry needs. This approach not only supports local economic development but also strengthens employer–college relationships and creates pathways for workers to earn credit toward further credentials. In addition, leaders from three excelling colleges said they offered targeted programs for high school students (through academies that enabled technical diploma attainment before graduation) and individuals who were incarcerated (offering certificates designed to facilitate reentry into the workforce).[13]

Noncredit flexibility. Leaders from several colleges—both excelling and aspiring—noted that noncredit offerings allowed for greater flexibility (see Box 6), "especially for industry partners and students seeking shorter, condensed training outside the standard semester schedule." This flexibility helps colleges quickly meet the evolving needs of local industry and employers. At the same time, leaders from one excelling college described prioritizing for-credit programming, noting that these courses provided students with credentials they could build on, as well as help the college secure performance-based funding.

Box 6. Noncredit Structure Can More Flexibly Meet Employer and Industry Needs

On noncredit you can start it and stop it as you need to. You can maybe only run it for 2 years, stop and then bring it back because now the workforce needs more.

– Representative from excelling, technical college

When an employer pays, training is often set up as noncredit to allow for quick payment, scheduling flexibility, and short training duration.

– Representative from aspiring, nontechnical college

[12] The Workforce Pell Act, passed in July 2025, requires noncredit programs to include stackable credentials for participating students to be eligible for Pell grants. As colleges seek to comply with the act, we expect more colleges will adopt this practice.
[13] For a summary of the evidence to date on what we know about the use and impacts of incumbent worker training see Holzer (2025).

Emphasis on Career Readiness Skills

Leaders from excelling colleges were much more likely than those from aspiring colleges to say that they integrated workforce skills into their courses or required standalone workforce skills classes (52% of excelling colleges vs. 10% of aspiring colleges).

Leaders at two excelling colleges reported requiring students to take career readiness skills courses such as job preparation or safety courses as part of certain programs. The courses included instruction on essential skills like communication and professionalism (see Box 7 for an example of the requirement in one excelling college). No aspiring colleges described this requirement.

Box 7. Essential Skills Required Element for Some Programs

Certain programs require a noncredit job prep, which is 40 hours of soft skills training (such as punctuality, proper dress, proper protocol for the field). The college also offers a noncredit course called Blueprints for Success on soft skills and employment training that can be modified for different industries.

– Representative from excelling, nontechnical college

Another 11 excelling colleges and one aspiring college reported embedding essential skills into regular coursework to varying degrees. Leaders from technical colleges were the most likely to report integration of these skills. Classes that integrated essential skills often included lessons or discussion of topics such as time management, professional dress, clear writing, collaboration, and leadership. Leaders from two of the excelling colleges said that students received grades for their work habits like attendance and professionalism, in addition to grades that reflected content mastery. Leaders from one aspiring college also described embedding essential skills in courses, but noted significant room for improvement.

Requiring career readiness courses or integrating essential skills development into curricula was often described by leaders at excelling colleges as a strategy for meeting employer needs. One excelling college representative said, “We do a great job teaching technical skills, but can you teach [students] to show up to work on time, stay the whole day, how to talk to people? So, we put a concerted effort to really address some of those [career readiness] aspects within the programs as we’re teaching technical skills.” Another leader from an excelling college said that they offered employers a guarantee: If the employer feels a graduate is not job-ready, they can send the student back to the college for retraining at no cost (see Box 8).

Box 8. Embedding Workforce Ethics in College Culture

And so, when you have work ethics constantly being embedded, that’s kind of a culture here. And students see it kind of day one. Everything that we do is really focused on moving you from a student to being a professional by the time you walk out the door. It does not matter if you’re an EMT major or a culinary arts major, we want you to have those work ethic skills from day one all the way until when you walk out.

– Representative from excelling, nontechnical college

Workforce Funding Sources

Across interviews, leaders from about two thirds of excelling and one third of aspiring colleges described braided funding models that combined public dollars, employer partnerships, philanthropy, tuition, and time-limited grants to sustain workforce programs (see Box 9 for an illustrative example). Excelling colleges frequently described leveraging multiple fundings sources, including state workforce initiatives, federal grants (for example, the Workforce Innovation and Opportunity Act [WIOA] and the Carl D. Perkins Career and Technical Education Act [Perkins V]), employer sponsorships, American Rescue Plan Act dollars, and private foundation support to offer low- or no-cost training, especially in short-term and noncredit programs. Leaders from colleges in energy-intensive states were more likely to describe braiding multiple funding sources, whereas those from colleges in other states were more likely to describe reliance on state or local funding and grants—perhaps reflecting their greater availability in the latter states.

Box 9. One College's Approach to Braiding Funding

Tuition-free programs are made possible through braided funding strategies. . . . To navigate the complexity of each funding stream's requirements, the college acts as a funding expert, matching students to sources across 15 fast-track programs, with philanthropic support from its foundation serving as a last-dollar safety net.

– Representative from excelling, nontechnical college

Although aspiring colleges often utilized a patchwork of fundings sources, they tended to depend on a narrower set of sources, such as general funds, student- or employer-paid tuition, employer donations, WIOA funds, state or local taxes, or single grants. Leaders from three aspiring colleges expressed the drawbacks of their current funding sources. Leaders from an aspiring college in an energy-intensive state said it relied heavily on state funding for about 60% of the budget—primarily sourced from oil, gas, and coal revenues, which were in decline, resulting in frequent budget cuts. Leaders at another aspiring college described the challenges of short-term grants that provided initial funding but left programs unsupported after the funding ended (see Box 10). Leaders at a third aspiring college noted that a key challenge is the inability to use Pell Grants for noncredit students, "which limits support for learners who are not working while attending school." However, starting in July 2026, this limitation may be

Box 10. Nonrecurrent Grants Leave Programs Financially Unstable

The apprenticeship program was originally launched with a state workforce recovery grant after Hurricane Irma. The program now lacks a dedicated funding source and struggles with visibility and equipment limitations.

– Representative from aspiring, nontechnical college

mitigated by the enactment of Workforce Pell Grants that can be used to support short-term training designed to connect students with in-demand careers.[14]

Employer Involvement

The following sections describe the ways college leaders align their programs with the needs of the local labor market and employers. Being responsive to local industry needs was a dominant theme across interviews. Leaders at all colleges described at least one strategy they used to align their programs with local employers' needs, with the vast majority describing a suite of complementary strategies to understand and meet employer needs. Colleges obtain information about what employers need primarily through advisory boards, which are required for all programs that receive Perkins funding, but also from private providers of LMI;[15] the engagement colleges have with local employers through offering internship and apprenticeship programs to their students; and hiring faculty from industry.

Employer Advisory Boards

Programs that receive Perkins V funding are required to establish advisory boards that meet at least annually and provide input into the way programs are designed to meet the needs of local employers. Not surprisingly, then, leaders at nearly every sample college (24 of 25 excelling colleges and 9 of 10 aspiring colleges) touched on the important role of advisory boards in shaping programs. Colleges that operate numerous workforce programs typically have a distinct advisory board for each program. College leaders mentioned having between 6 and 138 advisory boards, drawing participation from up to 800 local industry experts.

As a group, leaders from excelling colleges described more varied ways they engaged employers, spanning formal advisory boards, strong personal relationships, and informal "constant communication." A key difference between excelling and aspiring colleges was in the dynamism and detail college leaders offered about listening to employers' needs, encompassing both the variety of channels they used and the colleges' capacity to participate in conversations with employers.

[14] 119th U.S. Congress. (2025). H.R.1 – An act to provide for reconciliation pursuant to title II of H. Con. Res. 14. "One Big Beautiful Bill Act." https://www.congress.gov/bill/119th-congress/house-bill/1/text

[15] Colleges obtain LMI from both public and private sources. Publicly available data collected by state and federal governments (for example, U.S. Bureau of Labor Statistics, state workforce agencies) typically lags by a year or more (Palmer, 2024). Private companies, like Lightcast and Revello Labs, provide real-time data by scraping online job postings and salary boards. Colleges often purchase subscriptions to obtain LMI from these sources.

Insight Into Industry Trends. In both excelling and aspiring colleges, leaders shared that advisory boards "see what's coming down the horizon before we do," which helps the colleges update their programs to stay relevant. They share information about recent advances in technology, ensuring that students are prepared for both current and future jobs (see Box 11). For example, leaders from three colleges in energy-intensive states described having an emerging focus on alternative energy or electric vehicles. Leaders of technical colleges additionally described employer engagement through their advisory boards as integral to their missions and cultures (see Box 12).

Box 11. Employer Advisory Committees Help Programs Stay Relevant

Through advisory committees that are set up and advise our academic pathways on how the industries are changing and how the needs are changing, we are always able to stay relevant in terms of curriculum design.

– Representative from excelling, nontechnical college

Box 12. Employer Advisory Committees Are Mission-Critical to Technical Colleges

I think the sort of secret sauce of technical colleges, and this has been around for a long time, is that it's built into statute, as well as our culture. Every program that we offer has to have an advisory committee of employers, and they're required to meet with them twice a year . . . to review their curriculum, review the skills that they're building into that curriculum, and make sure that it is relevant for what they do today and will be relevant for what they do 2 years down the line.

– Representative from excelling, technical college system

Leaders from both excelling and aspiring colleges reported that advisory boards provided input into the programs to offer, including starting new programs to meet employers' needs and discontinuing existing programs that no longer met needs, as well as the sequencing and content of curriculum. They also reported receiving input from advisory board members on curriculum as it related to both technical skills and essential skills. Finally, they reported that advisory boards provide input on specific technology and equipment, and in some cases, even donate equipment to ensure that students are being trained on the equipment used in the workplace. A leader from an aspiring nontechnical college elaborated, "Anytime we're looking to purchase equipment, we really circle in our employers, as well, to see if it's of standard to what [they] are using. And if they know that we have the equipment on site, they're more likely to send employers or their incumbent workers to us to upskill and to train. So, we try to reach out to them and involve them as much as we can."

Two-Way Relationship. Leaders in both excelling and aspiring colleges characterized advisory boards as a two-way relationship, although this was more common at excelling colleges. The members of the advisory boards need a talent pipeline equipped to fulfill roles in the labor market, and colleges want to supply that talent pipeline. Numerous college leaders described advisory committees as helping them get better at listening to and understanding industry needs. When managers sit on advisory boards, they can offer colleges insight into "pain points in employability" and input specifically into the preparation of their school's graduates. Leaders

at some colleges (both excelling and aspiring) described the importance of including technical experts on their advisory committees to help ensure that the curriculum was up to date and provided appropriate practical training to perform the work.

In describing the two-way relationship, it was common across excelling and aspiring colleges to bring employers to campus for a variety of events (program-specific advisory board meetings, job expos, events with college leaders). Leaders from some excelling colleges also described the ways college faculty or leaders participated in industry spaces, such as external councils. Leaders at one excelling college even discussed advising employers about what wages were competitive for the roles they had trained graduates for.

Meeting Frequency and Engagement. Across excelling and aspiring colleges, some leaders described variation in advisory groups in terms of meeting frequency and advisory committee members' engagement. Perkins V requires advisory boards to meet annually, but most college leaders described meeting more often, such as once per semester, and up to four times per year or, in one case, holding a monthly forum with advisory board members. Often, advisory boards meet more often when programs are new and may move to less frequent meetings once a program is mature.

In aspiring colleges, a few leaders mentioned that not all advisory boards were effective. Although some programs might have had active advisory boards, other programs' advisory boards were more perfunctory (see Box 13). Leaders at several of these colleges mentioned that they hoped to revamp or were in the process of revamping their advisory boards to recruit members with more current industry perspectives and engage them more proactively.

Box 13. Excelling Colleges More Often Report Engaging and Listening to Employers

Where we've gotten much better is [understanding] employers' needs. We also have become better in discussing with them and shaping their questions better as we're kind of codeveloping curricular change, looking at really refining what the skills are that an individual needs.

– Representative from excelling, nontechnical college

I don't think that we have had even kind of the wherewithal of what kinds of questions to ask the advisory committee. I think it's been perfunctory and niceties and not really digging into program data, not looking at occupational segregation, right?

– Representative from aspiring, nontechnical college

Labor Market Information

Although college leaders often discussed the need to align new programs with labor market needs, only a few directly referenced using LMI (8 of 25, or 32%, of excelling colleges and 5 of 10, or 50%, of aspiring colleges). For those who mentioned using LMI, sources included local economic development organizations, Chambers of Commerce, workforce commissions, and private companies like Lightcast. Nontechnical college leaders referenced using LMI slightly more than did technical college leaders. A leader from an excelling nontechnical college noted

that it had "faculty trained in understanding labor market data and making decisions in terms of offerings and course offerings and things of that nature." Leaders from an aspiring nontechnical college described robust ways it used LMI to produce a gap analysis in its 5-year strategic plan: reviewed LMI annually and examined local LMI for the college's three campuses. Leaders at one aspiring college mentioned the need to be cautious with LMI, noting that it might not be fine-grained enough to apply directly to the college's locale; locales up to an hour away might be considered part of the same region but might have very different labor market needs.

Leaders from colleges in energy-intensive states discussed using LMI more often than did those in other states, but it was unclear how much of this difference was driven by the colleges themselves or state policy. For example, colleges in energy-intensive states may have used LMI more because it helped them understand emerging energy-intensive industries or there may have been mandates in those states that required colleges to use LMI to justify creating programs for emerging industries.

Work-Based Learning

Most leaders from both excelling and aspiring colleges discussed the importance of work-based learning experiences (17 of 25, or 68%, of excelling colleges and 6 of 9, or 67%, of aspiring colleges). Apprenticeships and internships were by far the most common types of work-based learning at both excelling and aspiring colleges (see Box 14 for the different types and frequency of work-based learning opportunities described by college leaders). Leaders of nontechnical colleges discussed work-based learning more often than did leaders of technical colleges (18 of 25, or 72% of nontechnical colleges, vs. 5 of 9, or 55%, of technical colleges). Leaders from excelling nontechnical colleges tended to emphasize a wide range of experiences, whereas leaders from aspiring colleges discussed only internships, apprenticeships, and clinical components. Leaders from several excelling colleges described opportunities for students to obtain hands-on experience in their field through field trips, guest speakers, practicums and lab experiences, and participation in community events.

Box 14. Excelling Colleges Offered a Variety of Work-Based Learning Opportunities

- Apprenticeships (11 colleges)
- Internships (11)
- Practicums/on-site clinical rotations (4)
- Site visits/employer tours (3)
- Service learning (2)
- Co-op/"earn and learn" (2)
- Job shadowing (2)

College leaders emphasized that internships and apprenticeships, in particular, provided critical opportunities to learn both technical and essential skills. A leader at an aspiring college attributed the quality of its graduates to the requirement for them to participate in internships (see Box 15). Some college leaders mentioned that work-based learning experiences were required for all students in workforce programs, and in at least one excelling college, students must have a minimum grade point average to participate in apprenticeships.

Box 15. Work-based Learning Prepares Students for All Aspects of Work

I think that's where they start to understand what those essential skills are, what it means to show up, what it means to show up prepared, what the dress code is, it's those kinds of things that are sort of, we take for granted because we've been professionals for a long time that people just entering the workforce or preparing to enter the workforce in a different capacity may not know.

– Representative from excelling, nontechnical college

We're recognized by industry for the quality of those students. I believe it's in part because we require those internships for students to gain that experience before they graduate from our programs.

– Representative from an aspiring, nontechnical college

Staff Alignment

Overall, some colleges discussed hiring instructors from industry, with clear differences between excelling and aspiring colleges (8 of 25, or 32%, of excelling colleges and 2 of 10, or 20%, of aspiring colleges). Among the excelling colleges that hire from industry, doing so is increasingly the norm, with some colleges requiring a minimum number of years of experience in industry. College leaders report that faculty with industry experience have stronger connections with the field and "stay current" with industry practices. Further, faculty with strong ties to industry can bridge industry and the classroom, improving students' learning experience by bringing a "real world element" into the classroom, as well as teaching students the norms of the industry. One college leader stated, "It's real important to us that our instructors are not just teaching them the skill but they are teaching them how to be an employee *in that career*."

Among technical colleges that hired instructors from industry, doing so was a central focus and point of pride that they connected to their mission (see Box 16). Industry expertise was far and away the most important qualification for faculty positions. As a leader at an excelling technical college explained: "We hire industry experts, and we turn them into teachers. We do not hire teachers and then try to turn them into technical experts." At this college, the process of "turning them into teachers" was a 3-year onboarding experience to teach new faculty to be effective teachers. This model has challenges. Bringing industry professionals on for full-time teaching

Box 16. Hiring from Industry Is Central to Technical Colleges' Missions

Hiring instructors from industry is "the thing I'm the most proud [of] about our college. And the thing I think really drives our institution. We don't just hire you because you're good at welding. You have to have worked in welding. . . . You have to have worked in that industry for multiple years and you bring not only your experience with the welding machine, you bring your experience being an employee in that industry.

– Representative from an excelling, technical college

roles makes it is harder for them to keep their skills current and industry ties strong—the very things that made them attractive instructors in the first place. College leaders reported addressing that issue by having faculty work in their industry during their time off, or requiring faculty to participate in industry professional development.

Nontechnical colleges that hired from industry described it as a benefit to their students to learn directly from practicing professionals, and one school leader described it as a "win-win" for their instructors to see who the "all-star students" are for hiring. However, none of the nontechnical college leaders described hiring from industry as essential to their mission or model. Two nontechnical colleges (one excelling, one aspiring) were transparent that their instructors need the income from continuing to work in industry because the college could not offer enough full-time positions or sufficient wages from teaching alone.

College leaders from excelling colleges were much more likely to discuss hiring from industry than were leaders from aspiring colleges. Particularly college leaders in more remote areas reported challenges with finding faculty from industry who were interested in teaching. When leaders from rural or aspiring colleges did note hiring from industry, they mentioned hiring part time or as adjunct faculty, whereas excelling colleges were more likely to hire full-time faculty.

Support Services and Advising

Support services and advising were common elements of workforce programs across both excelling and aspiring colleges. Most colleges offered academic advising, career support, wraparound services, and financial aid to help students overcome barriers to entry, navigate challenges, and pursue workforce credentials. Across all colleges in the study, there was a shared emphasis on helping students address academic challenges, prepare for employment, and meet basic needs. Common practices included providing guidance on academic pathways; supporting career readiness; and addressing basic needs through services such as counseling, food assistance, and emergency aid. Financial supports—like scholarships, grants, and tuition assistance—were available at many colleges, although eligibility for noncredit programs remained a challenge for both excelling and aspiring colleges.

Leaders from excelling colleges described a broader range of advising supports—including access to career pathway navigation—than did those from aspiring colleges. The former also were more likely to report availability of wraparound supports to meet students' holistic needs. Both excelling and aspiring colleges engaged employers in career preparation, although excelling colleges sometimes reported more comprehensive efforts, such as individualized employer mentorship. Overall, although there were examples of more robust support systems among excelling colleges, many practices were common in all colleges and differences were incremental rather than foundational.

Advising

Leaders at about one third of colleges discussed advising as a key student support. Both excelling (9 of 25, or 36%) and aspiring (3 of 10, or 30%) colleges said they provided academic advising, but excelling colleges described a more robust approach. Leaders from aspiring colleges mentioned academic advising generically, referencing services like tutoring and resource centers. Across the excelling colleges, the advising system was described as multilayered, involving success coaches, academic counselors, and student success advisors. These roles collectively supported students with academic challenges, skill building (for example, time management, study strategies), and service navigation. Advising was portrayed as highly accessible, with information delivered through apps, digital signage, face-to-face interactions, and other channels to ensure that students knew where to go for help. Leaders at one excelling college also highlighted the upcoming launch of ConnectED, a platform described as "enhanced advising." Leaders at another excelling college described the role of career pathway navigators, who supported students by guiding them through credit for prior learning, documentation, enrollment, and transitions to further academic programs. Finally, leaders at one excelling and one aspiring college described faculty advisors who "do a really good job of kind of advising our students the whole way like, 'Hey, this is the pathway that you need to take. . . . Get that résumé figured out. . . . Talk with your advisor.' So, we constantly are reminding them of doing those things."

Career Readiness Support

Leaders at most of the participating colleges (24 of 35, or 69%) said they provided career readiness support, separate from or in addition to teaching essential skills, described earlier. Leaders from technical colleges were somewhat more likely than nontechnical colleges to describe providing career readiness supports, which might be because of their long-standing and central focus on workforce preparation.

Universal Career Services. Leaders from 17 colleges—13 excelling (52%) and 5 aspiring (50%)—said that they offered universal career services through career services offices (that, for example, offered résumé building and online job boards), workshops, seminars, and coaching on essential skills topics that were "sometimes as simple as if you do that at work, you'll get fired . . . but just calling it out . . . is what's going to help the student realize what behaviors are okay and which ones are not." Examples of career readiness training offered at both excelling and aspiring colleges included interview skill development, résumé writing, networking, and financial literacy. Leaders at one aspiring college hosted an annual etiquette dinner that taught students to introduce themselves, use "elevator pitches," and practice networking. Although most supports were offered to current students, leaders at one excelling college mentioned that career services remained available after graduation.

Employer Engagement. Leaders from both groups of colleges said they engaged local employers to support students' career preparation, though it was somewhat more common at excelling (10, or 40%) than aspiring (3, or 30%) colleges (see Box 17). Leaders at technical colleges were also more likely to report engaging employers to support students than those at nontechnical colleges, which could be indicative of more experience with employer engagement at technical colleges.

Box 17. Excelling Colleges Engage Employers for Career Support

We also use [employers] to provide input to our students for mock interviews to get them more trained. Many of our students have never had a job, much less an interview, so they oftentimes collaborate with our programs to provide those opportunities for mock interviews. . . . So, their contributions are quite wide.

– Representative from excelling, nontechnical college

Colleges that engaged employers frequently did so though on-campus seminars, job fairs, or for three of the excelling colleges, reverse job fairs. In the reverse job fair model, employers visited student tables—described as a science-fair-style format—rather than the other way around, which "kind of forces the students to practice . . . shaking hands, looking someone in the eye, explaining . . . the skills that you have and what you bring to the table." Leaders at two excelling colleges also said that local employers provided individualized feedback to students, for example, by participating in mock interviews and giving students feedback on their performance.

Job Placement Support. Leaders from some excelling (4 of 25, or 16%) and aspiring (3 of 10, or 30%) colleges said they offered job placement support, with excelling colleges more likely to offer these supports "in house" rather than through local workforce partners. For example, leaders at one excelling college noted having "dedicated staff who work with apprentices to connect them with employers," whereas leaders from an aspiring college acknowledged that they relied on intermediaries to assist them with job placement.

Wraparound Supports

Leaders at just under half of the participating colleges said they offered wraparound supports for their students. These supports were more common at excelling colleges (13 of 25, or 52%) than at aspiring colleges (3 of 10, or 30%). These supports were also more common at technical colleges and those in energy-intensive states.

Of the college leaders who said they offered wraparound supports, most described putting "a lot of resources into making sure students have their basic needs met," often providing multiple services and resources (see Box 18). Common wraparound support services include mental health counseling, emergency financial assistance, and concrete supports such as childcare, textbook rentals, food assistance, professional clothing, and transportation assistance. Two additional leaders from excelling colleges said that they provided either mental health services or a food pantry but not a full array of wraparound supports. Leaders from another excelling college described employing a college counselor who acted as resource navigator, connecting students with community resources available to them: "So when a student is in trouble, homeless, hungry, no food, okay, she finds resources for them. She finds community resources. So, she connects them."

Box 18. Using Wraparound Supports to Meet Basic Needs

Most colleges now are familiar with a lot of the work of Sarah Goldrick-Rab and the basic needs, kind of the Maslow hierarchy. [Students] can't learn if any of those things are out of sync. So, we have a food pantry now. We have online mental health counseling for all of our students [who are] remote, in addition to having a counselor on campus.

– Representative from aspiring, nontechnical college

Financial Aid

Leaders from both excelling (8 of 25, or 32%) and aspiring (4 of 10, or 40%) colleges described various financial supports available to assist students in paying for tuition. A major challenge described by leaders from both excelling and aspiring colleges was the lack of financial aid available for noncredit courses because they were typically not Pell eligible. However, leaders from two excelling colleges said many of their workforce programs were eligible for federal aid.

Leaders from both excelling and aspiring colleges said that they kept out-of-pocket costs low for students in workforce programs either by providing state-funded grants (3 excelling colleges and 3 aspiring colleges) or by offering scholarships (4 excelling colleges and 1 aspiring college). Scholarships were typically funded by foundations or the state, and one excelling college said that tuition was free for all high school graduates of a certain county (see Box 19). One college leader from an excelling college in an energy-intensive state noted that scholarship support was important for helping fill high-wage jobs in the region: "We do a lot of scholarship support for students so that they are able to get into these shorter-term credential opportunities that actually move them right into a good-paying job. In our region, we have almost 50,000 jobs . . . that are good-paying jobs that are unfilled." Leaders from two additional colleges—one aspiring and one excelling—noted that workforce funding from WIOA or

Box 19. County-Funded Tuition for High School Graduates Reduces Barrier to Entry

So any high school graduating kid in [the county] can go to [the college] for free, get their degree here, which means, especially for a mostly Hispanic-educating institution, this is a big deal, and this is a huge barrier that we kind of just cut down, and there's no reason to not go to college anymore.

– Representative from excelling, technical college

employers could help reduce financial burdens for some students in workforce programs. Despite these opportunities, leaders from two excelling colleges said that students were paying either partially or fully out of pocket, adding that there was limited financial aid available for students in workforce programs.

Discussion

This section synthesizes themes from qualitative interviews with leaders at excelling and aspiring colleges. The findings are descriptive, and readers should not interpret them as causal. Further, many contextual factors—state policy, local economy, college size, student demographic characteristics, and funding models—vary concurrently, making it unlikely that any single factor explains differences in colleges' ability to produce credentials of value. Instead, these findings highlight promising practices and contextual factors that may warrant further exploration.

Overall, the study findings suggest incremental rather than categorical differences among colleges: Many practices appear in both excelling and aspiring colleges, but leaders at excelling colleges described their activities as having greater breadth, intentionality, and frequency. Across interviews, excelling colleges tended to combine multiple, mutually reinforcing practices:

- **Purposeful program design and pathways**. Leaders from excelling colleges were more likely to describe aligning program offerings with job availability and job quality, emphasizing stackable credentials and clear on-/off-ramps from short, open-access noncredit training into credit certificates, diplomas, and associate degrees. Leaders from several excelling colleges reported braiding noncredit and credit programs to shorten students' time to employment while preserving progression options.
- **Systematic integration of career readiness skills**. Leaders from excelling colleges—and technical colleges in particular—more often required stand-alone job-preparation courses or embedded "work ethic" and employability skills across courses; one even provided employers with retraining guarantees if graduates are not fully job-ready.
- **Broader, more dynamic employer engagement**. Although nearly all colleges used advisory boards (required for Perkins V funding), leaders from excelling colleges described deeper two-way relationships, for example, with regular touchpoints beyond statutory meetings, codevelopment of curricula and equipment decisions, reverse job fairs, and faculty/leader participation in industry councils. Excelling colleges were also more likely to engage employers in program design and to support the development of students' essential skills.

- **Work-based learning at scale**. Leaders from both excelling and aspiring colleges described offering internships, apprenticeships, and clinical rotations, but excelling colleges offered a wider portfolio, such as site visits, co-ops, service learning, and practicums.
- **Diversified, braided funding**. Leaders from excelling colleges and energy-intensive states more frequently described combining state initiatives, federal grants (e.g., WIOA, Perkins V), employer sponsorships, other federal funding streams, and foundation support to reduce or eliminate student costs, especially for short-term/noncredit programs. In contrast, leaders from aspiring colleges more often reported relying on narrower, less stable sources (e.g., single grants or cyclical state revenues), creating program instability when funds lapsed.
- **Staffing aligned with industry**. Leaders from a subset of excelling (especially technical) colleges emphasized hiring faculty from industry and supporting them with structured onboarding and professional development. Aspiring colleges that hired from industry tended to do so via adjunct roles, citing recruitment challenges.

Our findings also suggest that institutional characteristics are associated with more success at producing credentials of value.

- **Energy-intensive states**. We looked at differences across states that we considered energy intensive because of their focus on energy production or energy-intensive manufacturing. Some differences between energy-intensive states and those that were not energy intensive were evident in the interviews. Leaders from colleges in energy-intensive states more often reported intentionally aligning credit and noncredit programs, using LMI to make decisions, launching new programs in emerging industries (such as those focused on alternative energy), and braiding funding to maximize resources. They also reported more use of wraparound student supports. These practices may reflect an understanding that their regions are (or will be) transitioning away from traditional industries, and that they need to be proactive in helping their students adjust to these transitions.
- **College type**. Interviews with college leaders highlighted the fact that technical colleges were distinguished by a focused workforce mission, deep and ongoing employer engagement (including advisory boards and industry partnerships), and a strong emphasis on hiring faculty with recent industry experience. These colleges systematically integrated work readiness and employability skills into their programs. Like nontechnical colleges, many technical colleges leveraged braided funding streams and were more likely to report employer sponsorships. Technical colleges also benefited from a wider range of funding sources, which supported program stability and responsiveness to local labor market needs. Although nontechnical colleges might adopt some of these practices, they typically did so less frequently.

Additional research is needed to understand why excelling colleges perform better than aspiring colleges. This study has highlighted practices that may account for their better performance, but not the factors that position colleges to engage in these practices. Some possible explanations that merit further study include the supply of high-wage jobs in the community, the quality of guidance colleges receive from their advisory boards, the quality of senior leadership, and overall resource availability.

- **Availability of high-wage jobs**. The availability of high-wage jobs likely varies dramatically across counties and even within counties, and depends on the types of industries and employers that have chosen to locate and remain there. This is especially salient for community and technical colleges, whose core mission is to prepare students for the jobs that exist in the local labor market. When local economies offer limited high-wage opportunities, even well-designed programs will struggle to place students in them.
- **Quality of advisory board guidance**. College leaders engage their advisory boards and other local employers to shape degree and course offerings and support student transitions to the labor force. Advisory boards can provide strategic advice to help colleges anticipate changes in local labor markets, share what skills and competencies they seek in graduates, foster pipelines from colleges to high-wage jobs, review the quality and focus of curricula, and more. Although nearly all college leaders we interviewed enlisted employer advisory boards, the quality of advice that advisory boards provide colleges may vary. Indeed, some colleges talked about the role of advisory boards as perfunctory rather than impactful. It is possible that excelling colleges are more likely to have engaged advisory boards who anticipate advances in local labor markets and provide keen insights to help college leaders made decisions about course content and offerings.
- **Quality of leadership.** Generally, high-performing colleges tend to be led by strong presidents and senior staff who are innovative, forward-thinking, and responsive to student needs. The Aspen Institute awards the Aspen Prize for Community College Excellence every other year to honor excellent colleges—those that have demonstrated improvement in student outcomes. Aspen contends that what their winners have in common is strong leaders who are deeply committed to student success and have been able to translate that commitment into culture change and opportunity for students (Wyner, 2021). The president builds the college's culture by assembling a team working toward a common mission. Although this study did not systematically assess the quality of college leadership—a factor that can be difficult to measure—several of the excelling colleges were Aspen Prize winners or finalists, suggesting that they have strong leaders. This may indeed be one factor that contributes to successful outcomes for excelling colleges.
- **Resource availability.** Resource availability likely varies across community colleges, depending on factors such as regional affluence, state appropriations, and local employer

engagement.[16] In general, community colleges receive substantially less state funding per full-time equivalent student than do four-year public colleges, and the lack of such funding inhibits college performance (The Century Foundation, 2019b). The ability of an institution to fund key wraparound supports, academic or labor market counseling, and other services can depend heavily on such funding. More research is needed to determine the extent to which such funding helps account for differential college performance in generating strong workforce outcomes.

Future research might consider these factors and others as potential explanations for the success of excelling colleges. The findings above focus on *what* colleges do to generate credentials of value, but more research is needed on *how* they do it and the factors that facilitate their success. And, of course, rigorous research is needed to determine which of these factors has causal (rather than correlational) impacts on observed outcomes.

[16] Although National Center for Education Statistics data show spending levels and sources for each college, it is hard to disentangle the effects of resource availability from the choices of state appropriators or college leaders in such measures.

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Appendix A. Methodological Approach to Creating College Rankings

To identify schools for qualitative study we look for school that have an unusually large number of graduates in high-wage career and technical education (CTE) fields relative to their county's size, unemployment rate, and the year.

Identifying the College Sample

The sample for this study included all public, community and technical colleges in the United States between 2011 and 2021. Using data from the Integrated Postsecondary Education Data System (IPEDS; National Center for Education Statistics, 2011–2021), we selected on the following variables and values:

- public;
- institutional sector of either "degree-granting not primarily baccalaureate or above" or "degree-granting associate's and certificates"; and
- Title IV postsecondary institution.

IPEDS does not perfectly identify community colleges. Some community colleges offer a small number of bachelor's degrees, which may result in them being misclassified as a four-year college. Analyst judgement was used to reclassify approximately 50 colleges as community colleges. For example, University of Wisconsin–Oshkosh grants a large number of certificates and associate degrees, but is classified as primarily four-year.

The final sample included 11,831 observations, or approximately 1,075 community colleges per year.

Identifying High-Wage Workforce Credentials

We identified high-wage workforce credentials using data from the American Community Survey (ACS) from IPUMS (Ruggles et al., 2025), which includes data on worker's incomes. The sample was restricted to workers ages 18–39, who worked 35 or more hours per week, and who reported 1 or 2 years of postsecondary education. After removing records with invalid wage data and missing Standard Occupational Classification (SOC) codes, there were approximately 1,300,000 records from 2011 to 2021.

Next, we used a crosswalk provided by the Bureau of Labor Statistics and the National Center for Education Statistics (2025) to map occupation as identified by SOC codes to program type as

identified by Classification of Instructional Program (CIP) codes. This concordance is many to many (each CIP can be associated with many SOC codes and vice versa), is not empirically defined, and has no weights. Although 30% of SOC codes have exactly one CIP code and the median number is three, there are as many as 337 CIP codes associated with a single SOC code. SOC codes that are associated with fewer CIP codes are more specific than SOC codes that map to many CIP codes. To account for this, we weighted each record by the inverse of the number of CIP codes it is associated with, multiplied by the person weight from the ACS. For example, the SOC code 29-1123 (Physical Therapists) maps to two CIP codes: 51.2308 (Physical Therapy/Therapist), and 51.2311 (Kinesiotherapy/Kinesiotherapist). Each person with a SOC code of physical therapist would be included in the average, at their relevant education level, for both of the associated CIP codes, but with half their total sample weight per CIP code.

In the resulting file, each ACS respondent has a record for each CIP code associated with their SOC code. We then calculated average income by CIP code at the 2 through 6 digit level by state and nationally, and by degree level (associate degree or certificate). We inflated average income, which is at constant 2010 dollars, to 2021 dollars. We then classified a CIP code as high wage if graduates with a certificate had an average annual income of more than $45,000 and graduates with an associate degree had an average annual income of more than $50,000.

Identifying Completions

We identified college completions as the percentage of students in a college who graduated within three years of beginning an instructional program. We further identified workforce graduates as those with career and technical education CIP codes (National Center for Education Statistics, 2002) with an associate degree or certificate. We then calculated a graduation count for high-wage workforce degrees by counting graduates in high-wage CIP codes. When a CIP code has fewer digits in the school's records (is less specific), then the less specific CIP codes are used from IPUMS data.

Estimating College Fixed Effects

After constructing the file of community college completers by CIP code, we estimated a fixed effect (β_i) for each community college using the following regression model:

Model 1: $$\ln(y_{it}) = \alpha + \beta_i + \gamma \cdot \ln(\mathrm{p}_{\mathrm{i},t-1}) + \delta u_{t-1} + \xi r_{i,t-1} + \zeta_t + \epsilon_{it}$$

Where,

- y_{it} is the number of workforce graduates of school *i* in year *t* in high-wage career and technical education CIP code;
- α is the intercept term;

- β_i is the college fixed effect;
- $p_{i,t-1}$ is the population of 18–39 year olds in the county in the previous year with associated coefficient γ;
- u_{t-1} is the unemployment rate in the county in the previous year with associated coefficient δ;
- $r_{i,t-1}$ is the enrollment at school *i* in the previous year with associated regression coefficient ξ;
- ζ_t is the regression coefficients for year *t*; and
- ϵ_{it} is a residual term.

The regression is weighted by the square root of enrollment as an approximate precision weighting.

The population size is at the county level and comes from the U.S. Census Bureau's county level projections from 2010 to 2020 (which extend to 2024) estimates.

The unemployment rate comes from the Bureau of Labor Statistics' local area unemployment statistics (LAUS) program, which makes county-level unemployment rates by year.

Appendix B. Interview Protocol

Welcome and Introduction

Hello, my name is [your name], and I work for the American Institutes for Research, or AIR, a nonprofit, nonpartisan research institution working to conduct interviews and focus groups with various staff and students at select community colleges across the U.S. Thank you again for speaking with us. We appreciate your time, especially given the many competing demands in your role(s).

Purpose of Interview

AIR received a grant to conduct a study to examine the programs, policies, and practices among community colleges that have been successful at graduating numerous students with high-value degrees and certificates (defined as those that offer direct pathways into jobs with at least $45,000 in annual salary). We would like to hear about your perspective on the workforce development programs that make your college successful.

Confidentiality

We will keep the information you share during the interview or focus group confidential, and we will not identify you or any of the individuals we speak with for this study in our reporting materials. We will store documents and recordings in secure data files to be accessed only by AIR project staff. Recordings will be kept until the end of the study and then permanently deleted within 90 days after the study's completion. We will not share recordings or transcripts with anyone outside of the AIR research team. Our reporting and any presentations on the results of our study will reflect key themes and findings from across participants and will be de-identified.

AIR Recording Statement

We would like to record our meeting today to help capture information that was not captured through the notetaking. Only the team at AIR will have access to the recording. Your responses are completely confidential. We will not share your individual responses with anyone outside of the AIR team.

Do we have your permission to record? [*Press record.*] Thank you, we are now recording.

Are there any questions before we begin?

Interview Questions

Background

We'd like to start by getting to know you better.

1. Please tell me a little bit about your current position and role at [COLLEGE NAME].
   - How long have you been at the college in this role and what other positions have you held, if any?

College and Local Context/Economy

Now we'd like to learn more about your college, your local context, and the role the college plays.

2. In general, what are your college's primary goals and mission? Where does your college sit in relation to other colleges and universities in your region or in the state?
3. What programs, pathways, or degrees, if any, is your college most focused on? How are your colleges' programs and offerings organized?
   - Probe:
     - For instance, are you focused on pathways and degrees that will transfer to a four-year college – or are you more focused on shorter-term credentials or degrees – or both?
     - For instance, are some programs for credit while others are noncredit?
     - Are academic programs separated from workforce programs?
     - Are career/technical degrees primary, liberal arts/transfer degrees, or both?
     - What kinds of credentials are you most focused on?
     - Do you offer micro-credentials or provide credit for prior learning?
4. How, if at all, does workforce training fit with the mission of your college?
   - Probe:
     - Are you focused on providing education and training that prepare students for direct entry into the labor market?
     - What do these programs look like?
5. How does your college fit within your local ecosystem for job preparation and training? Who are your primary partners? Are there other organizations that provide job preparation and training similar to yours?

6. (If we do not know) What are the primary industries in your region? How, if at all, is your college's programming related to these industries?
7. (If we do not know) How, if at all, are community and technical colleges organized in your state? Is there a managing entity (like a coordinating board or a state higher education office)? How much autonomy does your institution have vis-à-vis this entity?

Program Information

8. Who is responsible for leading your academic and training programs? How much coordination is there across your institution with different program leaders?
   - Probe:
     - » Credit/noncredit
     - » Workforce/academic
9. At what level are these leaders (e.g., VPs, deans, instructors, etc.)?
10. How do you develop, define, and revise the curriculum and content within your courses and course majors/focus areas? Who is involved in this development process? How much local control do you have in this process (vs. state oversight)?
    - Probe:
      - » Focus on workforce programs (if separate from other programs)
      - » Faculty
      - » State entities
      - » Analysis of labor market information
      - » Employers and industry involvement
11. How do you finance the workforce training programs that you provide? Who is involved in the decision-making process in how resources are allocated? How, if at all, are workforce training programs prioritized in this decision-making process?
    - Probe: How does this differ for credit and noncredit programs?

Employer/Industry Engagement

12. What influence, if any, do local labor market or employer needs have on your programming? How easy or difficult is it to revise your programming and training content as industry or employer needs change?
    - Probe:

- How, if at all, do dynamic changes in the local economy, such as automation or factory/industry closures or investment, affect the programming at your college? How difficult or easy is it to respond to these challenges?

13. How do you connect with employers or industry leaders in your local region? Does [college name] develop these relationships directly (or are there other partners or organizations you lean on in building these relationships)?

14. Who (if anyone) is generally responsible for building relationships with or interacting with employers? Are there particular staff or offices at the college dedicated to this work? If so, what are their roles and responsibilities?
    - Probe:
        - Are these leaders from the industry – or have strong knowledge of local industries?
15. (If not answered above) How, if at all, do you involve industry leaders or employers in the development of your programs and/or curriculum and content? What roles do they play (if any)?
    - Probe:
        - Advisory boards or other councils
        - Gather information on current industry and labor market needs; growth forecasting
        - Input/feedback on curriculum & programs
        - Work-readiness skills development
        - Career preparation (e.g., resumes, mock interviews, etc.)
        - Career coaching or mentoring
        - Work-based learning experiences
        - Financial support
        - Hiring
16. Are there key internal or external challenges in partnering with employers? What strategies have you put in place to overcome these challenges? Are there issues that remain persistent challenges?
    - Probe – internal challenges:
        - Leadership/vision
        - Staff/faculty resistance
        - Faculty tenure and influence on workforce programming/governance

- » Faculty unions
- » Building new programs and accreditation
- » College staff turnover
- » Staff turnover with employer partners

– Probe – external challenges:

- » Local or state government or policies
- » Resources and support
- » Employers' willingness to partner
- » Local economy around college
- » Location of college in a rural area

Student Supports

Next, we would like to learn more about the admissions process to your college and what types of supports offered to students at your school.

17. What is the admissions process like at your college? What do you learn (if anything) about students' skills and academic and non-academic needs as they enter your college? How is this information used?

– Probe – types of information that could be gathered:

- » Academic or technical skills (e.g., assessments, GPA, transcripts, etc.)
- » Basic life needs (e.g., housing, food, transportation, childcare needs, etc.)
- » Socio-emotional needs (e.g., mental health, family context, etc.)
- » Financial assistance needs?

– Probe – ways information could be used:

- » Academic/technical course placement (e.g., development courses, bridge courses)
- » Recommendations or plans for academic or social supports (e.g., advising plans, counselors, tutoring centers, student groups/cohorts, specific courses to take)
- » Recommendations or plans for financial assistance and available financial aid
- » Information shared with other staff members to help connect students to support services and resources

18. Do you have challenges addressing the academic needs of students? How do you learn about their academic preparation and how does your college support these students?

- Probe:
  - Potential assessments: college readiness placement exams, high school GPA/grades, other socio-emotional skills assessments (e.g., grit assessments)
  - Potential supports: developmental education courses, bridge courses, boot camps, co-requisite courses, etc.
  - More challenges for students entering STEM-related programs (e.g., technology, engineering, health)

19. Are there disparities in academic preparation and training/academic success among different student groups at your college? How, if at all, is your college responding to these challenges?
20. What kinds of academic and non-academic supports does your college offer the general student population? How, if at all, are these integrated in students' daily schedules/life?
    - Probe:
      - Academic supports (e.g., tutors or tutoring centers, early warning systems, peer mentoring, computer-based/AI, teacher/staff coordination on needs, bridge programs, boot camps)
      - Social supports (e.g., counseling, case managers, student cohorts/learning communities, food/transportation/housing)
      - Financial (e.g., supports for tuition costs, stipends, paid work-based learning/apprenticeships)
      - Career/job supports (e.g., career readiness training/courses, coaches, job development, job placement, work-based learning opportunities, contact with employers/industry leaders, post-program completion supports, mock interviews, resume writing supports)
21. (If not learned above) What kind of career readiness training does your school offer? How, if at all, are industry leaders/employers – or industry/employer expectations- integrated into these supports?
22. How, if at all, do you track students' progress and success at your college and after they graduate? If you monitor them after they graduate, what data and measures do you use?
23. What types of accountability structures, if any, are integrated into your programs for students (e.g., consequences for tardiness, missing classes, lack of professional behavior)?
24. Are there particular technical skills/academic training or support services that you wish you could provide but can't or have not yet implemented? What are the key challenges or

barriers to implementing this training or support? What would help you overcome these barriers?

For High-Ranking Colleges Only

25. Your college is highly ranked in producing credentials of value, meaning those that provide individuals with credentials that can earn $45k or more in the marketplace. Does this surprise you? What, if anything, would you attribute this to?
26. Who or what do you think is most important or influential in your ability to provide high numbers of credentials of value?
27. What types of technical/academic training and/or supports do you think are most important in helping students complete these credentials?
28. What, if anything, would you recommend other colleges do to have similar levels of success? What do you think are their potential barriers to implementing the practices? Do you have suggestions for how to overcome these barriers?

Conclusion

29. Is there anything else you think we should know about your college, your workforce programs or your employer partnerships that we haven't covered?

We have reached the conclusion of our questions for today. Thank you for your time. If you have any questions or think of additional thoughts, please feel free to reach out to us by email.

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