RESEARCH REPORT

Expanding and Improving Work-Based Learning in Community Colleges

Better Data and Measurement to Realize Goals for Students and Employers

Shayne Spaulding   *Ian Hecker*   *Emily Bramhall*

March 2020

URBAN INSTITUTE · ELEVATE · THE · DEBATE

ABOUT THE URBAN INSTITUTE

The nonprofit Urban Institute is a leading research organization dedicated to developing evidence-based insights that improve people's lives and strengthen communities. For 50 years, Urban has been the trusted source for rigorous analysis of complex social and economic issues; strategic advice to policymakers, philanthropists, and practitioners; and new, promising ideas that expand opportunities for all. Our work inspires effective decisions that advance fairness and enhance the well-being of people and places.

Contents

Acknowledgments

Executive Summary

As the labor market changes, demand for a skilled workforce is growing. In response, interest is increasing in work-based learning (WBL) as a way to help students and workers, especially those from historically marginalized populations, prepare for and access good jobs, while helping businesses access talent. In this report, we define WBL as career preparation and training in a work setting with a connection to classroom or academic experience, and involving supervision or mentoring (Gardner and Bartkus 2014; Giffin et al. 2018).[1] We focus on WBL in community colleges and explore the following models: apprenticeships, internships, cooperative education, and practicum and clinical experiences. The report aims to support efforts by colleges, states, the federal government, philanthropies and other partners to expand, diversify and improve WBL.

Across the country and at every level of government, efforts are underway to increase the number of WBL opportunities, diversify the model into new sectors, and improve access for groups traditionally underrepresented in WBL, such as women and people of color (Toglia 2017) Community colleges, which attract many students, have a diverse student body, and provide career-focused degree and certificate programs, are well-positioned to expand and diversify WBL programming. Although community colleges have a long history of implementing WBL, measurement of WBL in community college contexts has been limited. As a result, we know little about how common WBL is in community colleges; what models and approaches work best (and for whom); who is able to access opportunities; or the outcomes and impacts it has for learners, business partners, and colleges. To better understand what works for student success and workforce preparation, and to design effective programs, the field needs better ways to capture information and measure WBL.

To meet that need and provide recommendations for action, this report draws on national data and interviews with six community colleges and documents what is known about the implementation and outcomes of WBL models in community colleges, what strategies community colleges are adopting to measure WBL, and potential steps to improve measurement and address key challenges in expanding and improving WBL in community colleges.

Key Takeaways

1. The federal government, states, and community colleges need strategies for measuring WBL to assess the effectiveness of expansion efforts in community colleges, to evaluate progress

toward realizing goals around diversifying WBL opportunities and ensuring equity, and to fill a gap in the literature on outcomes of various forms of WBL.

2. Many different models of WBL are being implemented by community colleges and a range of definitions for WBL exist, which both make measurement especially challenging. Measurement of WBL in community colleges is easiest when it is linked to the opportunity to earn credit, but there are challenges in tracking participation and outcomes, especially those that are employment-related. Experiences that are not associated with credit or that are less formal in nature are also difficult to measure.

3. When WBL models are deeply embedded in institutions and aligned with broader institutional goals, colleges are more likely to sustain and support measurement. This can include hiring dedicated staff to coordinate WBL and collect data, having institutional research offices support measurement, and using data to set and monitor progress toward goals of expansion, diversification, equity, and improved student outcomes. Support from state education agencies is also important.

Recommendations

WBL can help community college students prepare for good jobs and help employers get the talent they need. Community colleges have a critical role to play in realizing goals related to WBL expansion and diversity, equity, and inclusion. It is essential that we support colleges in collecting the data needed to understand how we are achieving equitable access and outcomes for students and remedy gaps among women and people of color. To improve measurement will require the involvement of stakeholders across levels of government and in the private sector. We recommend the following:

- **Federal policymakers** should create a cross-agency working group on WBL to develop a common definition of WBL for postsecondary education; support the implementation and measurement of WBL in education and training programs.; and develop data elements for nationally available datasets.

- **State education and workforce officials** should develop state definitions of WBL; develop common data elements for tracking WBL; share employment outcomes data with colleges to support performance improvement; and incorporate WBL into state longitudinal systems of data tracking.

- **Community college leaders** should integrate WBL data elements into data systems; incentivize employers and students to complete surveys on WBL; and provide support for data collection and performance improvement.

- **Philanthropies** should provide funding to support the collaborative work to establish common definitions and data elements; and support technical assistance, capacity building and opportunities for peer learning.

Supporting improvements in measurement of WBL at community colleges can help each of these constituents support the expansion and improvement of WBL so that all students have access to the skills needed to access good jobs and so employers can recruit and advance workers with the needed skills.

Introduction

Work-based learning (WBL), such as internships and apprenticeships, consists of career preparation and training in a work setting that involves supervision or mentoring and connects to classroom or academic experience (Gardner and Bartkus 2014; Giffin et al. 2018).[2]

In response to a changing labor market and demands for a skilled workforce, interest is increasing in WBL as a key strategy to help students and workers, especially those from historically marginalized populations, prepare for and access good jobs while helping businesses access the talent they need.

Expansion efforts for WBL are under way across the country and at every level of government; examples include federal funding and initiatives aimed at increasing the number of apprenticeships;[3] state efforts (such as those in in Colorado and California)[4] to make registered apprenticeships more common; new industries expanding WBL; and improved access for groups that are traditionally underrepresented in WBL, such as women and people of color (Toglia 2017). Notably, the American Association of Community Colleges partnered with the US Department of Labor to expand the number of registered apprenticeships nationwide through its Expanding Community College Apprenticeships Initiative.[5]

Because community colleges attract many students, have a diverse student body, and provide career-focused degree and certificate programs, they are poised to expand and diversify WBL programming. They enroll more than 7 million students in credit-bearing programs (of which more than half are students of color or women) and an estimated 5 million students in noncredit workforce programs.[6] Thus, they are uniquely positioned to close longstanding equity gaps in the labor market. They are at the forefront of preparing the workforce (using WBL as a key component in certain disciplines and institutions), giving students the skills and knowledge for jobs and careers, and partnering with employers to provide the talent they need. For community college students, especially the 29 percent who are first-generation college students or the 31 percent who come from low-income households, high-quality WBL can put students on a path to financial security and upward mobility (Ma and Baum 2016).[7]

Although community colleges have a long history of implementing WBL, measurement of WBL in community college contexts has been limited. Wide variation in implementation and diffuse governance structures within institutions that often operate independently make measurement a challenge. Colleges are also expected to meet many community needs and must work toward sometimes-competing goals in a resource-constrained environment that may not prioritize WBL or its

measurement. Consequently, we know little about how common WBL is in community colleges; what models and approaches work best and for whom; who is able to access opportunities; or the outcomes and impacts for learners, business partners, and colleges. Consensus is growing that WBL is a crucial mode of preparing people for the workforce (as shown by the body of research reviewed later in this report), but little is known about what works best for which students. Improved methods of capturing and measuring information are needed for the field to better understand how to create WBL opportunities that allow all students to participate and succeed.

BOX 1

The Urban Institute's Partnership with JPMorgan Chase

The Urban Institute is collaborating with JPMorgan Chase over five years to inform and assess JPMorgan Chase's philanthropic investments in key initiatives. One of these is New Skills at Work, a $350 million multiyear workforce development initiative that aims to help people build new in-demand skills, prepare for the future of work, and succeed in an ever-changing world of work. The goals of the collaboration include using data and evidence to inform JPMorgan Chase's philanthropic investments; assessing whether its programs are achieving desired outcomes; and informing the larger fields of policy, philanthropy, and practice. As one of several resources Urban is developing, this report aims to increase understanding of WBL in community colleges and offers recommendations to improve measurement.

This report draws on existing national data and research as well as the approaches under way in select community colleges to develop recommendations for better measuring WBL in community colleges. Although our inquiry centers on the issue of measurement, it became clear through our research and interviews that foundational work was needed to understand what WBL looks like in community colleges. We look at the models being implemented by community colleges; the motivations and goals driving WBL expansion; and the structure of these programs, including how they are staffed and supported. We briefly explore these topics to fill that gap in knowledge and because an understanding of these issues is critical to tackling measurement. Ultimately, measurement is a tool for understanding and improving learning, employment, and career-readiness outcomes for students; for improving services to employers; and for promoting shared accountability. We focus on answering the following key questions:

- What is known about implementation and outcomes of WBL models in community colleges, and what knowledge gaps exist?

- What strategies are being adopted by community colleges to measure WBL?

- What are potential approaches to measurement, and what steps could be taken to address key challenges in expanding and improving WBL in community colleges?

Through this work, we aim to support efforts by states, the federal government, philanthropies, and other partners to expand, diversify, and improve WBL in community colleges.

Overview of the Research Design

To answer our research questions, the Urban Institute team identified national data sources and then examined available literature on the outcomes and impacts of WBL, focusing on what is known about WBL in community college contexts. We interviewed experts from six national organizations (including the Urban Institute) and three state or regional public agencies to capture the state context. Finally, we interviewed representatives from six community colleges. We selected them because they focus on varying forms of WBL and to achieve a mix of models and geographic locations. Community college respondents were vice presidents and directors of WBL, workforce development, and career services, or they were other staff engaged in these efforts. In interviews, we explored what WBL opportunities the college offered, how they were implemented, how the colleges tracked participation, what other outcomes and variables interested the respondents, what challenges the college faced in implementation and measurement, and the college's goals for future improvement and expansion. Appendix B provides a list of respondents.

What Is WBL?

"WBL" can mean different things to different people depending on the goals and context of implementation (Giffin et al. 2018). Existing frameworks array WBL activities on a continuum ranging from less-intense activities aimed at career awareness and exploration, such as workplace tours and informational interviews, to more involved programs that are aimed at career preparation and training, are linked to a classroom or academic experience, and are supported by a supervisor, mentor, or faculty member; these might include internships, practica, or apprenticeships (Gardner and Bartkus 2014; Giffin et al. 2018; Linked Learning 2012).[8] We set out trying to understand the approaches on the latter half of the continuum. These experiences aim to build career-relevant skills for the workplace and improve access to good jobs. We focus on WBL in community colleges and explore apprenticeships, internships, cooperative education, and practicum and clinical experiences (described further in box 2).

Work-Based Learning Models

- Registered apprenticeship is the most formalized model of WBL in the United States; programs must meet certain standards to be registered through the Department of Labor. It consists of paid employment at a work site linked to classroom-based and on-the-job training and on-site mentorship, leading to credentials and to increased wages and earnings.[a] Nonregistered apprenticeships share some of the characteristics of registered apprenticeships but do not have to meet the same requirements. Instead, requirements and parameters are set by industry or by individual employers, meaning characteristics and standards can vary widely.

- Internships are sustained experiences held in the workplace and can last from a few weeks to a full academic year. They can be connected to a particular class, be paid or unpaid, and may or may not offer credit (Darche, Nayar, and Bracco 2009). However, some authors note internships in the higher-education context as commonly being for credit (Gardner and Bartkus 2014). Noncredit internships can have wider variation because they are not governed by course requirements. Although not always linked to eventual employment, internships provide students the opportunity to apply their classroom learning outside of school in a formal work environment.

- Co-operative education (or co-ops) is more focused on pairing what students are learning in the classroom to their work experience. Co-ops are more structured than internships in that students are placed in employment during the school year, and they are supervised by a coordinator or teacher (Stern et al. 1997). Gardner and Bartkus (2014) note that it is difficult to distinguish cooperative education from other forms of WBL, but it is characterized by classroom learning alternating with learning on the job through a series of progressive and intentionally linked experiences.

- Practica and clinical experiences are formalized learning experiences that happen at the workplace and provide learners the opportunity to practice skills learned through coursework under supervision (Gardner and Bartkus 2014). Typically unpaid, they are often required as part of state licensure or for degree programs in health care, education, social work, nursing, or other technical fields.

[a] "Apprenticeship," US Department of Labor, accessed February 27, 2020, https://www.dol.gov/general/topic/training/apprenticeship.

Mirroring the variation found in the literature, the colleges we interviewed for this report thought about WBL in different ways. Most commonly, colleges defined WBL as we do in this report, but they varied in how they applied each model, and some colleges used the terms "internship" and "co-op" interchangeably. Two extended their definition of WBL to include other kinds of service learning experiences, such as volunteering and working with nonprofit and community-based organizations for both short- and long-term opportunities; for others, this was an aspiration. Attempting to accommodate working learners, a few colleges allowed certain jobs to count as WBL experience even if they were unrelated to program of study, citing the employability skills learned in any job. Finally, some were trying to track participation in other kinds of work-related activities that were focused on career

awareness, exploration, and exposure. Although we focus on WBL that resembles jobs and is linked to academic learning, we discuss these other strategies in the context of interviewees' efforts.

In some cases, adopted definitions came from statewide efforts to expand WBL. Although state efforts to measure the prevalence of WBL at the postsecondary level are nascent, many states have developed shared definitions of WBL, a first step to measurement. Giffin and colleagues (2018) found that 28 state education agencies had formal definitions of WBL, 14 had informal definitions, and 9 had none. Though these definitions come through secondary-focused state education agencies, many reference how they might apply to postsecondary education.[9] Developing a shared definition of WBL is a key step in being able to measure participation and outcomes, but definitions must be aligned with the programs being implemented, their stated goals, and the context in which they are implemented.

What Is Known about WBL in Community Colleges?

Here we summarize available data and research on WBL in the community college context, including what is known about prevalence, characteristics, participation, and outcomes. Understanding what is known about WBL and how it is captured in national data can help identify areas where we need more information to answer key questions about WBL, such as what programs are being offered, who accesses them, and whether they are effective.

What Do National Data Tell Us about WBL?

National data sources answer some questions about WBL, but they are limited in answering key questions about WBL implementation, participation, and outcomes. The Adult Training and Education Survey, National Association of Colleges and Employers, and the Registered Apprenticeship Partners Information System each analyze WBL in different ways, but none focuses on community colleges. The Integrated Postsecondary Education Data System includes community colleges but omits certain students and programs and does not encompass WBL. These and other limitations make it difficult to fully understand student participation in various WBL models at community colleges. Appendix A provides a more comprehensive list of data sources and limitations.

What Are the Trends in Growth and Diversification of WBL?

Efforts to expand WBL and diversify WBL in community colleges suggest the need to set benchmarks and measure progress toward those goals. In this section, we discuss what is known about participation in and expansion of WBL as well as about success in increasing access and improving outcomes for historically underrepresented groups.

Growing the Number and Types of WBL Opportunities

Data on participation in WBL suggest there is room for growth: recent survey data show that only one-fifth of adults report they completed a WBL program. These work experiences occurred most frequently in the health care and education fields, both of which often require WBL in educational programs (Cronen et al. 2018). Only 14 percent said that they participated in WBL as part of a postsecondary educational program.

Although few nationally representative data sources capture WBL prevalence in community colleges over time, the most relevant data suggest that overall WBL is expanding. Registered apprenticeships, monitored by the federal government, have more consistent national-level data and have recently expanded, from 375,000 programs in 2013 to 585,000 in 2018.[10] Nonregistered apprenticeship is less well documented, and at the federal level, employer-sponsored apprenticeships have not been surveyed since 1995. Other evidence of expansion comes from the 2018 National Association of Colleges and Employers survey in which employers reported that they plan to increase their hiring rates and their compensation of interns and co-op students (NACE 2019).

Federal and state initiatives aim to expand WBL and have set targets for growth. Under the Expanding Community College Apprenticeship initiative funded by the Department of Labor, the American Association of Community Colleges aims to develop 16,000 additional registered apprenticeships. States are also focused on expansion and have set their own targets for growth. California aims to increase the number of apprenticeships in the state to 500,000 by 2029. South Carolina established a state apprenticeship agency in 2007 that incentivizes apprenticeships through the tax system, resulting in more apprenticeships (Kuehn 2017). Colorado's Business Experiential Learning Commission developed WBL for the K–12 and postsecondary system throughout the state by engaging businesses and creating a portal to connect participants with training opportunities and careers.[11]

Efforts to expand WBL hinge on employer buy-in. Employers can be concerned about the added costs of offering WBL opportunities to students; apprenticeship in particular is thought of as burdensome and expensive despite research to the contrary discussed later in this report (Kuehn, Hecker, and Simon 2019). Colleges must do all they can to recruit employer partners, but engaging employers is often challenging and costly (Barnow and Spaulding 2015; Spaulding and Martin-Caughey 2015). Colleges may have to compete with other local organizations for employers' attention, and they may not have the resources or expertise to make a convincing case.

Increasing Diversity and Ensuring Equity in Access to WBL

As WBL expands, efforts are under way to prioritize increased access to women and people of color. Registered apprenticeships in particular have a long history of excluding women as well as black and Latinx people, mirroring the employment barriers these groups face in the labor market and broader issues of structural racism (Toglia 2017). Over the past several decades, several efforts have sought to increase the participation of women and people of color in registered apprenticeships and to increase persistence and completion in these programs (Kuehn 2017; Toglia 2017).[12]

Recent data suggest that despite efforts to expand access to groups historically barred from these opportunities, disparities still exist for women and people of color in access, participation, and outcomes (Hanks, McGrew, and Zessoules 2018; Kuehn 2017). An analysis of the 2016 Adult Training and Education Survey found that women are more likely to have participated in WBL than men (34 percent to 18 percent) but are less likely to be paid, and WBL participants are less likely to be black or Latinx. Further, women constitute less than 7 percent of registered apprentices even though they make up about 47 percent of the workforce. Most registered apprentices are white (63 percent); 16 percent are Latinx and 11 percent are black (Hanks, McGrew, and Zessoules 2018).

Registered apprenticeships occur more often in traditionally male-dominated professions (such as construction, manufacturing, and electrical work) and are not necessarily linked to college programs. Efforts to grow community college apprenticeships may help address this gap given the diverse student body of community colleges.

Unpaid WBL is a key barrier to addressing diversity goals through community college programs. About 80 percent of community college students work, and 39 percent work full time.[13] Carnevale and colleagues (2015) find that the number of working learners is increasing. For students who are already working, adding WBL into a full schedule (sometimes also including family care) can be difficult.

Moreover, some students pay for credited WBL and are not compensated for their work. WBL models with the strongest links to and buy-in from participating employers include clinical experiences and practica, such as in the health and education fields, which are dominated by women. But these experiences are generally not paid for several reasons, including state policies; industry norms; licensing rules; and limited funding in health, social services, and education systems. Unpaid WBL experiences are accessible to those with the time, financial means, and social support to participate in them, which increases equity concerns.

Community colleges can help ensure equitable access to WBL because of their role in providing workforce-focused education and training and the diverse student bodies they serve. But community college leaders face challenges encouraging diversity in their WBL programs (Browning and Nickoli 2017). In a 2017 survey, respondents cited the lack of career and industry awareness as one reason that expanding diversity is difficult, pointing to the need for support in conducting outreach and providing targeted guidance for underrepresented students in these areas. The study's authors noted the need to develop WBL programs that are linked to occupations and sectors with paths to well-paid jobs and that have strong employer engagement. To address equity concerns in other kinds of WBL, it may be important to encourage employers as much as possible to offer paid WBL. Also critical is providing ongoing support services to students and supporting employers so that students persist in their WBL (Browning and Nickoli 2017; Toglia 2017). Access to child care and financial resources to meet the costs of program participation is key (Toglia 2017).

Systems of measurement are critical for understanding who has access to WBL and how well students are being served. Measurement can help stakeholders understand where gaps exist and how much they affect people of different ethnicities, races, and genders so they can take steps to remedy them. Further, measurement can bolster employer engagement efforts by providing college representatives with data to persuade employers to partner and to understand what strategies best support students' success on the job.

What Are the Outcomes and Impacts of WBL?

Research on the outcomes and impacts of WBL in the community college setting is limited, but studies show that WBL can help employers identify talent and help job seekers secure jobs. In this section, we summarize existing literature on several WBL outcomes (including education and employment) as well as student and employer perspectives on the benefits of WBL. By understanding what is known about WBL, we can identify where we need to learn more and begin data collection and measurement in a way that answers key questions about WBL in community colleges.

Education and Employment Outcomes of Different Models

Key outcomes of interest in evaluations of WBL include (1) the examination of persistence toward degrees and certifications and (2) post-WBL employment outcomes, such as whether participants are hired into the profession, whether the job is with the WBL employer, job retention rates, and wages.

Research points to the benefits of WBL, though few studies establish a causal relationship between community college student participation in WBL and educational or employment outcomes. More research and stronger evidence is available on registered apprenticeships, but other models of WBL also show promise.

Evaluations of apprenticeship programs have provided evidence of positive outcomes for workers and learners, employers, and the economy at large (Hollenbeck and Huang 2006; Reed et al. 2012). Reed and colleagues (2012) find that enrollees in registered apprenticeship programs have higher earnings; in the ninth year after program enrollment, they earned almost $6,000 on average more a year than they would have had they not participated in an apprenticeship. Over an entire career, participants earn nearly $100,000 more than they would have otherwise, and those who complete their registered program see an average of $240,000 more in earnings. Registered apprenticeships also produce a social return on investment (estimated as worth $50,000 per participant): not only do participants earn more than comparable workers, they are also more productive and are less likely to use public benefit programs.

A key metric is whether WBL experiences are converted into employment opportunities. According to the US Department of Labor's Registered Apprenticeship Partners Information Data System, apprenticeship program participants in the United States have high retention rates: 91 percent retain employment after the program ends.[14] The National Association of Colleges and Employers Internship and Co-Op Survey found that more than half of interns responding to the survey were converted into full-time employees (though as noted, that sample is not nationally representative).

Other research on co-op education programs has showed varied results. Some studies show they lead to reduced time to secure employment, higher associated grade point averages for co-op participants, and higher starting salaries, with some variation depending on the field of study (Blair and Millea 2004).[15] However, several studies suggest these impacts fade over time (Darche, Arnold, and Newhouse 2004; Gemici and Rojewski 2010). Because co-op education programs are typically paid and widely available to students in institutions that adopt the co-op model, these programs hold promise and offer lessons for other WBL models. However, we need a better understanding of how co-op education programs can be structured to realize sustained outcomes.

Despite some indication that internships are common, little research is available on internships in community colleges. Instead, we must look to other literature to find evidence about the impacts of internships. Several studies involving randomized controlled trials of workforce programs include internships, but these have largely been implemented by community-based organizations rather than

community colleges.[16] Many of these workforce programs involve a robust system of support operated by community-based organizations. As such, it is difficult to know whether findings are generalizable to community colleges and whether the internship component is what contributes to these program impacts. However, they may point to the kinds of support students need succeed in WBL.

Some evidence suggests outcomes may be affected by whether an internship is paid. In their international examination of internship programs, O'Higgins and Pinedo (2018), found evidence that longer-term, paid programs were associated with better outcomes than short-term, unpaid programs. Similarly, a 2016 study of one college campus found that paid internships on average produced better salaries and employment prospects (Crain 2016), suggesting a need for better support for paid WBL. This speaks to the importance of pay as well as the need to develop longer, more intensive programs.

Clinicals and practica required for industry licensure in some fields warrant further examination because they reflect strong industry buy-in and engagement and because they present barriers to equity since they are commonly unpaid. Sectors such as health care and education are seeking to diversify their workforces, but do these unpaid opportunities limit their ability to attract underrepresented populations?

Students and Employers Value WBL Experiences

Beyond the evidence of positive program outcomes, WBL is also valued by students and employers. Students perceive WBL experiences to be useful for building work-relevant skills, for career exploration, and for goal setting (Cronen et al. 2018; O'Higgins and Pinedo 2018; Rutschow and Taketa 2019; Stern et al. 1997; Torraco 2008). And evidence suggests that WBL helps learners expand their networks and improves access to job opportunities (Cronen et. al. 2018; Rutschow and Taketa 2019).

Employers view WBL as particularly effective for getting students ready to work and overwhelmingly approve of registered apprenticeship programs (Lerman 2018). One study found that 97 percent of surveyed employer sponsors of registered apprenticeships would recommend the program to others (Lerman, Eyster, and Chambers 2009). Another found that internships in the accounting industry helped employers by letting them gauge the fit of a potential employee. (Kessler et al. 2009). Employers value WBL because it increases the pool of qualified workers and strengthens pipelines by using the experience as an "on ramp" to a full-time job.[17]

WBL on the Ground

This section discusses the experiences of a set of community colleges in implementing WBL programs. Understanding how WBL is implemented is critical for developing an approach to measurement. And understanding the goals and motivations for starting WBL programs, the context of implementation, what programs are implemented, and key challenges are essential for figuring out what data to collect and how to collect it. Table 1 provides an overview of the colleges we interviewed and their approach to WBL.

Motivations and Goals for WBL

The primary impetus for the expansion of WBL is to equip students with the skills and pathways to enter high-wage, high-demand jobs. Colleges aim to deliver an education that is worth students' time and resources and that prepares them for a career. As such, WBL provides students opportunities to connect directly to industries of interest; to develop soft skills such as communication, teamwork, and responsiveness; and to expand classroom learning to the workplace regardless of career stage. Colleges viewed WBL as essential to a well-rounded college experience whether students were enrolled in technical programs aimed at preparation for immediate employment or pursuing an associate's degree with the intention to transfer to a four-year program.

The motivation to expand WBL also comes from state or national initiatives. MiraCosta Community College in California is expanding WBL partially in response to the state's Strong Workforce Program, which focuses on improved workforce education and connections to industry. At Bluegrass Community College, the expansion of registered apprenticeships comes in part from a state initiative to increase this type of WBL.

In additional to broader WBL goals, the colleges we spoke with emphasized that they ultimately sought to shape the goals of each WBL experience to individual students' goals and expectations. This individualized process involves the student, the employer, and a faculty advisor or supervisor. For example, at Bluegrass Community and Technical College, the student develops a contract with a faculty member and an employer before beginning WBL. This contract outlines what skills the student aims to develop through the opportunity and the employer's expectations, ensuring a mutually beneficial experience.

Collecting data is critical for measuring progress toward goals for individual students, for employers, for colleges, and for states.

TABLE 1

Colleges Interviewed for This Report

School	Fall 2018 Enrollment		About	Required for	Credit offering	Noncredit offering
	Credit	Noncredit				
Central Piedmont Community College (North Carolina)	14,949	1,644	Community college in the Charlotte area and one of the largest in the state, serving students on seven campuses.	Some majors	160 hours spent on the WBL site = 1 credit.	Formal internships program for certificate that is noncredit
Community College of Rhode Island (Rhode Island)	14,539	2,188	New England's largest community college. Enrolls nearly 20,000 students in credit-bearing programs and an additional 8,500 in workforce development programs and adult education courses annually.	Required for cybersecurity, nursing and allied health, human and social services programs and some workforce programs	Hours vary depending on academic program and co-op course.	Connections made to WBL through Division of Workforce Partnerships, career services, and faculty engagement
Cincinnati State Technical and Community College (Ohio)	8,216	262	Four campus sites, three in Southwest Ohio and one in Northern Kentucky serving urban and suburban areas. Started as a technical high school, became a technical college, then became a technical and community college.	Co-op is mandatory for associate's degree program	Varies between full time (480 hours spent on the WBL site = 2 credits) and part time (300–465 hours spent on the WBL job site = 1 credit).	
St. Petersburg College (Florida)	39,507	7,199	Florida's first two-year college. Now offers baccalaureate degrees, with 11 campuses/learning sites in the county.	Internship required for associate of science degrees	60 hours spent on the WBL site = 1 credit 180-hour internship requirement.	Service learning, business field experience, job shadowing, mentorship, simulated enterprise
MiraCosta College (California)	14,109	2,774	Hispanic-serving institution serving north county San Diego on four campuses/learning sites. Over 10 percent of enrollees are veterans, active-duty military, or their dependents. Conferred its first bachelor's degree in biomanufacturing.	For 12 of 81 associate's degrees	Internship variable 1–3 credit courses, and co-op variable 1–4 credit courses. Both require 60 hours spent on the WBL site if unpaid or 75 hours spent on the WBL site if paid.	Yes, including some internships, and service learning.
Bluegrass Community and Technical College (Kentucky)	9,527	1,762	Seven campuses serving several communities. Most students are in transfer programs but also operate workforce programs in key sectors including tech areas like health and advanced manufacturing.	25 majors	Varies between clinical (45–60 hours spent on the WBL site = 1 credit) to co-op and practicum (60–90 hours spent on the WBL site = 1 credit).	Offers noncredit WBL.

Source: Authors' analysis based on interviews with and data provided and verified by respondents.

How Is WBL Structured?

As table 1 shows, colleges offer a range of options designed to cater to students' individual goals and needs. For students going into highly technical fields or fields with rigid requirements for entry, WBL provides specific skills and is often required for graduation or (as is the case with health care degrees) for licensure. Colleges also offer opportunities for general workplace preparation, especially in nontechnical degree or transfer programs. Although most interview respondents mentioned that colleges want students to be paid and are trying to secure this for students, payment is not required with all WBL. Colleges have been grappling with how to encourage or require employers to pay students (discussed in further detail in the next section).

Credit and Noncredit Experiences

WBL opportunities are typically linked to college credit, although some colleges offer noncredit options. Among for-credit experiences, the required hours vary across the colleges (table 1).

Academic or instructional components linked to the workplace experience are common. Sometimes this involves courses directly related to technical skills required for the job. In other cases, the credit gained through course enrollment reflects a more general opportunity for reflection and guidance from a faculty advisor. One college offers the WBL course online, having students submit writing assignments electronically throughout their experience. Some colleges have developed a WBL prerequisite course in which students can prepare soft skills for the workplace and learn the requirements of their internship or co-op. This suggests the need to understand the most effective ways to prepare students for WBL experiences, not just to evaluate the WBL experiences themselves.

An additional part of earning credit is an assessment of student learning. This could be tied to a grade on specific activities throughout the experience (or a simple pass/fail metric) or it could be completed at the end of the program. Some WBL programs had a supervisor assess the student's competency at the end of the program, often based on goals the student and the employer agreed on at the start. At MiraCosta, for example, at the end of a WBL experience, the supervisor and student jointly assess performance against the objectives they set together. The worksite supervisor also appraises the student's performance and the skills he or she has acquired.

Table 1 reflects that colleges sometimes offer noncredit options to respond to student needs and demands. Where WBL was not mandatory, noncredit options provide more flexibility. Central Piedmont

Community College in North Carolina created a noncreditbearing internship with no hour requirement; students receive a certificate recognizing their internship completion but no college credit.

Accommodating Working Learners

A reoccurring concern for colleges is the structure of WBL for students with full- and part-time jobs. To address this challenge, some colleges that require WBL have been working to accommodate students. If a student's job is related to his or her program of study, colleges accommodate them by trying to align the job with college-recognized forms of WBL. In these situations, it is helpful for WBL coordinators or college faculty to work with the student and their existing employer to develop new projects in the workplace. This approach allows colleges to meet students where they are, structuring opportunities for them to gain skills and responsibilities and including a student's existing job when assessing WBL.

Colleges are flexible in other ways as well. At Cincinnati State Technical and Community College in Ohio, for example, if a student is working in health care but pursuing an engineering degree, the college might try to make the WBL requirement part time so the student can complete it over a longer period and continue working in his or her existing job.

For clinicals and practica, respondents reported that payment for clinicals is not allowed. The exact source of this limitation was unclear in our interviews, but it may be because of licensing rules, limited funding in sectors that rely on public funding or where reimbursement rates are set by government, or industry practices and dynamics (such as labor organization or concerns about patient and student well-being and safety). As noted, further research is needed to understand these issues and evaluate their impacts on gender and other dimensions of equity.

"It's helpful that we can have direct conversations with employers who understand this might not be the student's only job. Figuring out different options, being flexible to allow students to keep the job they need to support themselves. The goal is to take students from nonlivable wages to livable wages with opportunities for advancement. There will be a balance but we need to figure that out."
—Meghan L. Hughes, Community College of Rhode Island

How Are WBL Opportunities Developed and Supported?

Developing and supporting WBL opportunities often requires dedicated staff. Some colleges have developed a WBL staff position. At Central Piedmont, MiraCosta, and Cincinnati State, a WBL coordinator is responsible for building and managing strong and informed relationships with employers. They have to understand the targeted industries and be familiar with which employers and managers lend themselves to constructive WBL experiences for students.

Other colleges did not have a separate staff member for coordinating WBL, and teaching faculty held these employer relationships. The Community College of Rhode Island is structured this way but is transitioning to a more centralized approach, establishing one group of faculty dedicated to building and operationalizing partnerships with industry. When assistance is more limited, students are sometimes responsible for identifying their own opportunities.

In some colleges, the faculty or coordinator continues working with the student and employer throughout the WBL experience to ensure they are supported, help students achieve their goals, and troubleshoot challenges. This role helps the work engagement remain intentional and helps ensure the student has a true learning experience.

Respondents reported that ensuring the staff and college have the capacity to support students is an issue. Faculty have limited time given their existing workloads, and this makes the added responsibilities of WBL coordination difficult to juggle, especially if funding for those tasks is not available.

Considerations for Measurement

Colleges want to better understand if they are delivering skilled employees for the regional industry while equipping learners with the skills, knowledge, abilities, and opportunities they need. States and federal agencies investing in WBL also want to understand the results of these efforts. To build this understanding requires a strong approach to measurement. In this section, we discuss how community colleges are trying to measure WBL by examining what they are consistently tracking and the processes they are using. We also highlight variables and outcomes that community colleges are trying to track and the barriers to their effective measurement. Table 2 provides an overview of each college's approach to measurement.

TABLE 2

Approach to Measurement

Community College	Department	Database	WBL attributes and outcomes captured	Reporting
Central Piedmont Community College	Workplace Learning	Sharepoint	Program of study, WBL employer, paid or unpaid	WBL coordinators report to Sharepoint
Community College of Rhode Island	Division of Workforce Partnerships	Ellucian Banner (not WBL specific)	Enrollment, completion and grades	Information provided by faculty and administration used to develop a list of courses that include WBL.
Cincinnati State Technical and Community College	Academic Affairs; Institutional Research and Effectiveness	Simplicity and Colleague	Job placements	Co-op coordinators track co-op opportunities and employer feedback
St. Petersburg College	Career Connections office and Institutional Research & Effectiveness	Peoplesoft	Enrollment data and grades	Career Connections informs Institutional Research of courses that qualify. Uses ID tracker for non-credit experiences
MiraCosta College	Career Studies & Services	Peoplesoft; GradLeaders	Enrollment/grades for credit internships, co-ops and work experience. Faculty assessed outcomes at the course level	Course codes at the institutional level
Bluegrass Community and Technical College	Office of Research and Policy Analysis and Academic Affairs	No WBL-specific database	Enrollment, completion, and grades	Develop a list of courses that count for "experiential learning"

Source: Authors' analysis based on interviews with and data provided and verified by respondents.

What WBL Information Do Colleges Measure, and How Do They Measure It?

Colleges tend to focus on measurable educational and program outcomes, often relying on course codes to track participation rather than collecting data to measure employment, which is often more difficult to access. Most rely instead on student and employer feedback surveys to gauge program quality and outcomes. And although we did not evaluate these programs, colleges, or measurement efforts, the absence of robust data on employment is a clear gap, explained in part by the challenges that colleges face in data collection (as we discuss in the next section).

The amount of information conveyed in a course code varies; some colleges use a single course code for all activities and others use course codes to capture more detailed information, such as the form of WBL or whether students were paid. The use of course codes makes it possible to understand how many WBL opportunities are associated with specific programs in the college as a whole as well as how many students participate in a semester. In most cases, clinicals and practica are tracked separately from other kinds of WBL but still rely on course codes. With a course associated with the WBL, colleges use pass/fail rates as proxies for measuring student success.

To further assess quality, colleges commonly administer student and employer feedback surveys, although low response rates limit their usefulness. Surveys ask students or graduates about the quality of the WBL experience; its perceived value in the labor market; or other outcomes, such as whether the WBL course led to employment or conferred skills used in their current job. Similarly, colleges use employer surveys to gauge satisfaction with students and the college and to get feedback on curricula. Employers often (though not always) offer feedback on the individual student's performance and job skills gained.

Using these surveys, some colleges can generate estimates of useful metrics, such as whether a graduate is working in the field in which he or she has WBL experience. They use the feedback from employers to modify programs, relying also on input gathered informally through in-person interactions or through employer involvement in advisory committees for college programs and departments. Despite the common use of surveys, colleges cited low response rates and survey fatigue among both students and employers as a challenge to obtaining consistent data through this approach.

Colleges also collect and adapt to assessments of quality through advisory meetings with students. At MiraCosta College, students define their desired learning objectives before beginning WBL with the

guidance of a faculty mentor and workplace supervisor. Throughout the WBL, they update their faculty mentor on whether they are on track to meet or have successfully met their objectives.

"One measurable outcome I have been working on with the institutional research team is to determine of the students who have completed a work-based learning course, how many of them also then went on to complete a certificate or associates degree. If the data shows a is a higher completion or graduation rate than the current college average, that would be a impactful statistic to highlight the importance and relationship of work-based learning to completion."—Ed Injaychock, Central Piedmont Community College

For WBL outside of the credit course structure, tracking is more difficult or is managed separately. St. Petersburg College is piloting a method of using a bar code scanner and student identification cards to track participation in noncredit activities. MiraCosta Community College is beginning to explore how to track noncredit experiences as a part of California's Strong Workforce Initiative. The Community College of Rhode Island uses noncredit course codes to track some WBL activities.

What Information Is Not Collected and Why?

Colleges want to answer additional questions about their WBL programs to improve those programs and to ensure quality for students, make the case for institutional support of their efforts, and bolster recruitment of student participants and employers. They face challenges collecting data and have noted key areas where they want to know more:

- **Employment and educational outcomes for students:** Collecting or examining data on outcomes—such as whether students got a job after completing WBL, whether those jobs are linked to their WBL experience, students' wages and earnings, or students' persistence in college—is largely aspirational. Some colleges can access state wage record data or temporarily collect these data as part of grant-funded programs. Other colleges do not have access to such data, which are limited to certain users in some states because of privacy rules or can be difficult to obtain.[18] One respondent said they had to wait approximately two years to get the information needed. A further challenge is linking educational records to the employment

outcomes provided by the state. Although the Registered Apprenticeship Partners Information System provides these data on apprenticeships, colleges did not report using this system for tracking outcomes, likely because most of the colleges have limited implementation of registered apprenticeships. Data on outcomes could help make the case for additional resources and support, but colleges face challenges in accessing these data (as is common with many educational and employment programs).

- **Student demographic information:** The community colleges are all interested in measuring student demographic information to gauge whether WBL is expanding equitably. At several institutions, institutional data collection did not seem to coordinate with data collection specific to WBL. We found little evidence that colleges were examining the characteristics of participants except where data collection was the responsibility of or linked to institutional research.

- **Why students do or do not take advantage of WBL opportunities:** Colleges recognize that low participation in WBL might be because of barriers such as transportation, other employment, or that WBL experiences are sometimes unpaid. A broader measurement scheme might capture this kind of information and inform service delivery. Colleges could query their students to learn more about key barriers to participation, but as noted, getting this information consistently can be challenging.

- **Understanding the differences in outcomes between programs and types of WBL:** As one respondent said, "We've heard for years and years that registered apprenticeship is the gold standard, but we know that in terms of volume, that other types of WBL programs are far more active than registered apprenticeship. We also want to measure employment information, wage information and do a programmatic comparison." Employers may be open to other forms of WBL, but it is important to understand what drives employer preferences (e.g., not wanting to pay a wage for a registered apprenticeship) and whether other models yield the same strong outcomes of registered apprenticeships. Registered apprenticeships might work well for some students (and for some employers), but other models of WBL might be a better fit (such as if students are working to transfer to a four-year institution, they want to build work readiness, or they need more flexibility).

- **Other employment-focused activities:** Colleges discussed efforts to expand measurement of WBL to include less-formal (often noncredit) experiences, such as uncredited internships, short-term or quickly planned service learning, and other activities focused more on career awareness and exposure (e.g., classroom presentations by industry, project-based learning with

a career focus, and informational interviews). College staff indicated that measuring these kinds of student experiences is very difficult. They want to measure these experiences to understand what elements work and where to invest their time and to document how these activities contribute to employment-focused institutional goals.

How Do Colleges Staff Data Collection, and What Are the Challenges?

Colleges use a variety of approaches to staff data collection. At colleges that use WBL coordinators, they help track student and employer participation and feedback. As one college put it, "More than the measurement … it's the co-op coordinators that are the secret sauce. They're the glue." Although WBL coordinators may be dispersed by program or area of study, one college mentioned trying to "centralize process but not centralize people" by having them report to a central entity to consolidate data sources while retaining industry expertise. Faculty also play a role in data collection, gathering surveys and other feedback from students and employers. This was the case at MiraCosta, where instructors of WBL courses collect formal outcomes and employer and student surveys are administered by individual departments.

Some colleges use their institutional research offices to manage the collection and maintenance of WBL data. At Cincinnati State, an institutional research staff member is embedded in their career center, allowing him or her to draw on broader data to inform career services and to draw on the provision of such services to inform data collection and maintenance.

Tracking experiences outside the credit structure and those aimed at providing career exposure or awareness is particularly difficult. Implementing student ID scanners and tracking systems have some expenses that may be cost prohibitive, particularly for institutions with several campus locations. St. Petersburg College shared that when implementing an ID scanner and tracking system, colleges need to provide clear expectations and training to ensure the systems are used consistently.

Respondents from nearly all colleges mentioned that limited funding is a serious barrier to measurement and data collection. Thoroughly and consistently tracking WBL in its various forms takes time and resources. For example, student and employer surveys require busy faculty to assist in data collection by entering data and fielding surveys of students and employers. Several colleges are facing this challenge. Some colleges use a systematic approach to heighten their response rate, including

sending surveys multiple times and having faculty send the surveys directly to their employer connections.

Respondents mentioned that the WBL-focused office is often disconnected from the administration or from faculty who instruct in classrooms. Administrations may prioritize non-WBL in the classroom, or faculty might not recognize the benefit of experiences outside the classroom. By developing a system to track WBL experiences that professors may include in their syllabi, WBL departments may find that WBL opportunities are widespread beyond their department and opportunities exist for partnerships with faculty across the college.

Moreover, through a system of measurement, colleges can better identify the academic and employment outcomes (e.g., grades, learning outcomes, employment, salary) for students involved in WBL, thereby demonstrating, both to others in the college and to potential funders for expansion, that experiences outside the classroom are valuable for student learning and student employment.

How Do Colleges Track and Report WBL Data?

The advantage of associating credit with WBL is that it is easy to track in institutional data systems. However, colleges need to track information beyond what is captured in institutional research data. Most colleges currently have or are building database systems to more easily capture, maintain, and use data. Some also use their databases to house WBL opportunities, listing open opportunities for students to discover. One college uses a Sharepoint database that links programs with course codes and tracks individual students, employers, managers, locations, whether the opportunity is paid or unpaid, what employers are hiring, and from what programs of study they are hiring. Salesforce was also mentioned as a contact management system used to track relationships with employers.

Some colleges run regular reports on programs, but most expressed a desire to do more in this area. At Central Piedmont, reports are used to assess WBL coordinator caseloads to make sure they are distributed evenly. Staff also look to see the top five employers to host interns. One college is looking to use Tableau, a data visualization platform, to make interpreting the data easier. Making investments in a data software that can help automate portions of data collection processes can be helpful and may reduce the burden on WBL coordinators and staff.

"We've made a big push to put that data into Tableau so our program chairs can use it. This would help faculty with program review and being able to see employer evaluation which gives them input into curriculum so they can use some of this data to make decisions about what needs to be in their programs."
—Kelly Harper, Cincinnati State Technical and Community College

Respondents indicated that an institution-wide focus on WBL is essential for colleges to support and sustain data collection efforts. An initial external investment of resources and support is sometimes needed to facilitate a focus on WBL and establish elements needed for effective measurement. For example, the Community College of Rhode Island will expand its WBL focus through a Title III funding grant received in late 2019 and, through the implementation of the grant, will improve their measurement and tracking of WBL. Cincinnati State created a centralized co-op coordinator position with funding from a grant, and the school now measures expanded outcomes for WBL initiatives. Funding can be critical to building institutional capacity and the infrastructure for efficient and consistent measurement processes.

When funding disappears, however, institutional support is required to sustain efforts. Colleges suggested that an institution needs to prioritize resource allocation to ensure WBL is implemented and measured sufficiently. In colleges that require WBL or that have been moving toward wide adoption, data collection is more consistent. On the other hand, when WBL is mandatory, it sometimes means less flexibility to accommodate various forms. Colleges have had to adopt requirements to respond to circumstances such as working learners who needed to complete WBL to meet degree requirements, while also being able to count and measure participation in the activities.

Recommendations

WBL can help community college students prepare for good jobs and help employers get the talent they need. Recognizing the value of WBL, federal agencies, states, community colleges, and philanthropies are helping it expand to meet the needs of more employers and job seekers and to ensure American competitiveness globally. To understand progress toward these goals, WBL measurement in community colleges, which are a key partner in the implementation of WBL, must improve. Better measurement will help schools and other actors understand which WBL programs are best for connecting students with meaningful opportunities.

A key goal in recent efforts to expand WBL is to ensure that women and people of color, who have historically faced and continue to face barriers to WBL, can access high-quality WBL. Evidence shows stronger outcomes in WBL programs that provide students the opportunity to earn and learn (Crain 2016; O'Higgins and Pinedo 2018). Unpaid WBL opportunities are more difficult for low-income students (who are often students of color) to participate in. Employers have an important role to play in addressing these equity concerns through their willingness to pay a wage. For jobs in the public sector, other resources are required to ensure students are paid. Community college students who are managing complex lives, often balancing school, work, and family care, may need additional support to prepare for and be successful in WBL. We must help colleges collect the data they need to understand how to achieve equitable access and outcomes for students so they can prioritize remedies.

Improving approaches to measurement is challenging because the US postsecondary education system is fragmented, with disparate accountability structures and diverse goals. Funding is also an issue for many institutions, especially those serving the most disadvantaged students and those trying to meet many community needs. Although several federal agencies have a role to play in what happens on community college campuses and for helping to expand WBL, the task largely falls to states and colleges. Even within institutions, accountability can be difficult to determine. Thus, to improve measurement requires help from stakeholders across all levels of government and the private sector. We provide the following recommendations to guide key stakeholders in improving measurement of WBL.

Federal Policymakers

- **Create a cross-agency working group on WBL to develop a common definition of WBL for postsecondary education**. To support more robust data and measurement across institutions

and levels of government, a common definition of WBL must be developed. Federal agencies, including the US Departments of Education, Labor, and Health and Human Services, could convene a working group of colleges, states, and national experts to develop a common definition of WBL, starting with the most intensive forms of WBL that are focused on career preparation and training in the workplace. This work could build off prior initiatives and resources in this area, such as the recent reauthorization of the Carl D. Perkins Career and Technical Education Act's definition of WBL for secondary education, the US Department of Education's Work-Based Learning Toolkit, and the National Governors Association's Work-Based Learning Policy Academy. Many of these efforts have focused on WBL in K–12 contexts, illustrating that more focused work is needed on postsecondary implementation, particularly in community colleges.

- **Support the implementation and measurement of WBL in education and training programs.** Federal agencies, including the US Departments of Education, Labor, and Health and Human Services play an important role in supporting the adoption of program innovations and our understanding of their effectiveness through grant funding to states, colleges, and other service providers. These agencies should provide resources and technical assistance to support continued implementation of WBL in community colleges, including support for the improvement of measurement.

- **Develop data elements for nationally available datasets.** The National Center for Education Statistics should add reporting fields to capture WBL participation and programs as part of the Integrated Postsecondary Education Data System (IPEDS), the primary source of data on community colleges. An additional step would be to expand the IPEDS data collection to include noncredit programs and characteristics of WBL. Several authors have noted the need to better track noncredit workforce program participation in IPEDS (Romano et. al. 2016; Sykes 2012). The American Association of Community Colleges is attempting to address some of the gaps in IPEDS data through its Voluntary Framework for Accountability, and WBL data elements could be incorporated here as well. Other federal data sources could also integrate new WBL data elements, for example, in the Department of Labor's Workforce Integrated Reporting System (used for federal workforce program reporting) and national surveys (e.g., the National Longitudinal Survey of Youth or the National Survey of College Graduates). Including WBL in these national data sources would allow colleges, governments, and funders to better understand who is participating in WBL and to use that information to inform program development to close equity gaps.

State Education and Workforce Officials

- **Develop state definitions of WBL.** States should work toward definitions of WBL to support implementation and measurement. In our conversations with states and colleges, this definitional work was a critical first step in expanding WBL and effectively measuring it. Already, across the country, many states have established definitions of WBL, but the focus has generally been on WBL in high school contexts. These could be expanded to include postsecondary WBL, or states could develop uniform definitions that span secondary and postsecondary contexts. Several states, such as California and Colorado, are already leading the way.

- **Develop common data elements for tracking WBL.** Colleges that were tracking WBL use course codes to do so. Course codes are limiting because they are often specific to individual institutions and may be limited to WBL associated with credit coursework. Standardizing course codes could enable states to look across colleges when trying to understand whether and how WBL is expanding, and it could facilitate student transfer of WBL credits across institutions. State education agencies and college systems should also develop other common data elements that are important for understanding implementation of WBL across colleges, such as whether experiences are paid, the number of hours associated with those experiences, and the sectors in which they occur.

- **Share employment outcomes data with colleges to support performance improvement.** To help college administrators, faculty, and WBL staff understand the outcomes and impacts of their efforts, states should support the linking of student-level data on participation to data on employment outcomes. College staff expressed a desire to better understand these outcomes to help make the case for WBL within their institutions and to both students and employers. They also aspired to collect better data that could inform the development and improvement of programs. States can play a key role supporting the improvement of data collection by providing resources and opportunities for peer learning across colleges.

- **Incorporate WBL into state longitudinal systems of data tracking.** States across the country, with the support of the federal government, are developing longitudinal data systems to better track student characteristics, progress, and outcomes. According to recent information, 38 states have state longitudinal data systems in place for tracking students across two or more of the following agencies: early learning, K–12 education, postsecondary education, and the workforce.[19] WBL could be incorporated into these metrics to answer key questions about WBL and to further promote expansion.

Community College Leaders

- **Make WBL and its measurement a priority.** A major theme from our interviews was that without an institutional commitment to WBL and its measurement, it will likely fall by the wayside. Institutional priorities come from leadership; to develop, administer, measure, and continually improve WBL, community college administrators must be willing to make institutional investments in WBL. This might include adding WBL into the college's core mission and making financial investments in staff time and data instruments.

- **Integrate WBL data elements into data systems**. With support from federal policymakers, states, and philanthropies, community college leaders should work to incorporate common data elements into data collection systems and create systems for tracking WBL. Regular reports around key metrics of interest, such as the number of WBL experiences associated with each major, could help track growth into new sectors. Information on the students who participate in WBL would answer questions about equity—are women and people of color accessing opportunities in sectors and occupations that offer the promise of good jobs?

- **Incentivize employers and students to complete surveys on WBL.** Colleges rely on feedback surveys as a key source of information about WBL but face challenges with low response rates. Incentives, such as requiring surveys to complete a course or to employ an intern in the following semester, could help ensure that colleges can collect this valuable information.

- **Support data collection and performance improvement**. The colleges we interviewed expressed a desire to better track the outcomes of their efforts and to examine data to improve programs, but they have limited capacity and resources to do so. Support from offices of institutional research is key to facilitating and sustaining measurement efforts, but resources are also needed to bolster the work of WBL coordinators, who can play an important role in WBL implementation and measurement.

Philanthropies

- **Provide funding to support the collaborative work to establish common definitions and data elements.** Colleges that are strongly focused on WBL as a key strategy for student success are establishing systems for measuring student participation and outcomes. Given the staff time involved and data systems required to track results, additional resources and support are needed. An external funding source is essential for many of the colleges to begin and staff their

WBL implementation and measurement efforts. Philanthropy can play a role in jump-starting these efforts.

- **Support technical assistance, capacity building, and opportunities for peer learning.** There are also opportunities for colleges to learn from each other, and several respondents indicated they needed assistance to improve their ability to collect and analyze data related to student participation in WBL. For example, several colleges are experimenting with tracking WBL outside the course credit system, and there are lessons to be learned from these efforts. Interviewees wanted help figuring out how to best track these noncredit experiences. A community of practice with linked technical assistance could advance this work.

WBL is increasingly touted as an effective strategy for preparing people to succeed in the labor market. As a result, expansion efforts are under way across the country that aim not only to increase the number of opportunities available but also to expand into new sectors and to attract participants who will help realize goals around diversity, equity, and inclusion. Community colleges are actively involved in these efforts and have an important role to play in realizing these goals.

Our review of the literature, national data, and research and our interviews with key experts revealed the need to better understand the implementation of WBL in community college contexts. Improving measurement is a key first step, but further work is needed to ensure that quality programs are being implemented that consider students' need to earn a wage, ensure equitable access for women and students of color, and promote the need for student supports to address equity goals. Strategies that align educational programs with current employment can help address barriers to accessing WBL while supporting students' career success and advancement. Understanding more about how these approaches work would help colleges design strategies better tailored to the needs of working learners. Finally, more empirical work on the impacts of WBL in general is needed. This report begins to explore these questions and offers some initial ideas for building the knowledge base to expand and improve WBL.

Appendix A. Potential Data Sources for Understanding WBL in Community Colleges at the National Level

Potential Data Sources for Understanding WBL in Community Colleges at the National Level

Source	Sample	Relevant data captured (forms of WBL, who is captured, counts or quality)	Limitations
Adult Training and Education Survey	Nationally representative household survey of adults ages 16–65 who are not enrolled in high school; most recent wave is 2016.	Captures if respondent has completed an internship, co-op, practicum, clerkship, externship, residency, clinical experience, apprenticeship, or similar type of program. Of these, captures industry, duration, wage (no wage, training wage, same wage as regular employee). Asks Y/N questions about the presence of training/instruction, taking classes from school or other organization, and the presence of evaluation. Captures if the respondent gained credit or other certifications, if the experience was part of a formal school program, if it is related to his or her current job, and how useful skills gained in the experience are in current job.	Work experience variables ask respondent if experience was part of an associate's degree program but not about community colleges specifically, so the data may not capture short-term programs.
Integrated Postsecondary Education Data System	Aggregate annual data submitted by postsecondary institutions that receive title IV (of the Higher Education Act) funding	Includes whether an institution accepts "credit for life experiences," which include credits earned through work experience, independent study, previous licensure, and other means.	Captures prior learning credit but not other forms of WBL.
National Association of Colleges and Employers	Employers that are National Association of Colleges and Employers members (n=309)	Hiring projections, wages and benefits, and program structure of employers' internship and co-op positions	Sample is limited to employer membership of the National Association of Colleges and Employers.

National Longitudinal Survey of Youth (1997)	Nationally representative and longitudinal. Respondents were 12–17 years old in 1997 and 30–36 years old in the most recent data release (2015–16).	[For all] Participating in an apprenticeship, and internship, or a formal company training run by employer. [Only for K–12] Job shadowing, mentoring, cooperative education, school-sponsored enterprise, tech prep, internship or apprenticeship, and an 'other' category.	Captures only prevalence. Captures lower-touch forms of WBL only for K–12.
Registered Apprentice Partners Information Data System	Administrative data capturing all registered apprentices	Occupation, industry, wage growth, program characteristics (including whether the sponsor or employer is a community college), and apprentice characteristics	DOL no longer releases this data to researchers; only reflects 33 states. Difficult to narrow to apprentices who are also community college students.
National Survey of College Graduates	Nationally representative sample of college graduates, released every two to three years	Identifies work-related training, reason for work-related training, and education paid for by the employer.	Does not distinguish WBL from other work-related training. No measures of intensity or quality. Limited to college graduates.
Survey of Income and Program Participation	Nationally representative sample; oversamples low-income individuals, uses panel data	Asks if respondents attended job-readiness training, training to learn specific job skills, and general job training.	No measures of intensity or quality, does not capture different forms of WBL.
Beginning Postsecondary Students Longitudinal Study	Surveys cohorts of first-time, beginning students at three points in time: one, three, and six years after first starting in postsecondary education. Most recent data are for people who were at the end of their sixth year after entry into postsecondary education in 2017	Federal and other work-study awards received, number of jobs while enrolled, for how long, the work intensity, whether it was on or off campus, and if the respondent is primarily a student of an employee.	Does not capture WBL

Appendix B. List of Expert Respondents

Not all respondents agreed to be listed here.

- Sarah Burrow, Research Committee Chair, Cooperative Education & Internship Association

- Marie Cine, President, Council on Adult and Experiential Learning (CAEL)

- Callan Eschenburg, Project Manager, America Association of Community Colleges

- Austin Este, Senior Policy Associate, Advance CTE

- Shannon Gilkey, vice chancellor of Academics and Workforce Solutions, Kentucky Community and Technical College System

- Kelly Harper, Director of Cooperative Education, Cincinnati State

- Dwayne Hobbs, Work-based Learning Specialist, Georgia Department of Education

- Meghan L. Hughes, President, Community College of Rhode Island[20]

- Ed Injaychock, Director Work-based learning, Central Piedmont Community College

- Lois Joy, Associate Research Director, Jobs for the Future

- Kate Kreamer, Deputy Executive Director, Advance CTE

- Jason Krupp, Director of Career Connections, St. Petersburg College

- Nina Lovejoy, Employment Services Program Manager, MiraCosta College

- Karen Mayo, Dean of Academics, Bluegrass Community and Technical College

- Tekla Moquin, Executive Director of Workforce Development Partnerships, Community College of Rhode Island

- Amy Waldbilig, Vice President for Workforce Development, Cincinnati State

- Kristin Williams, Chancellor, Kentucky Community and Technical College System

Notes

[1] "Work-Based Learning Tool Kit," Perkins Collaborative Resource Network, accessed February 27, 2020, https://cte.ed.gov/wbltoolkit/index.html.

[2] "Work-Based Learning Tool Kit," Perkins Collaborative Resource Network, accessed February 27, 2020, https://cte.ed.gov/wbltoolkit/index.html.

[3] In 2017, the Trump administration issued an executive order on expanding apprenticeships, with an emphasis on expanding industry-recognized apprenticeships. See "Presidential Executive Order Expanding Apprenticeships in America," the White House, June 15, 2017, https://www.whitehouse.gov/presidential-actions/3245/. Grant funding has also been expanded at the federal level, such as through the Apprenticeships: Closing the Skills Gap grant program. See "Apprenticeship Grant Opportunities," US Department of Labor, accessed February 27, 2020, https://www.dol.gov/featured/apprenticeship/grants.

[4] See "California's Proposal for Apprenticeship Growth Requires New Approach," Center for Apprenticeship and Work-Based Learning, December 17, 2018, https://center4apprenticeship.jff.org/resources/californias-proposal-apprenticeship-growth-requires-new-approach/; and "BEL Commission," Colorado Workforce Development Council, accessed November 21, 2019, https://www.colorado.gov/pacific/cwdc/bel-commission.

[5] See "Expanding Community College Apprenticeships," American Association of Community Colleges, accessed February 27, 2020, https://www.aacc.nche.edu/programs/workforce-economic-development/expanding-community-college-apprenticeships/.

[6] "Fast Facts 2019," American Association of Community Colleges, March 2019, https://www.aacc.nche.edu/wp-content/uploads/2019/03/AACC-2019-Fact-Sheet-1.pdf.

[7] "Fast Facts 2019," American Association of Community Colleges, March 2019.

[8] "Work-Based Learning Tool Kit," Perkins Collaborative Resource Network, accessed February 27, 2020, https://cte.ed.gov/wbltoolkit/index.html.

[9] For example, California's Strong Workforce Program provides $248 million annually to expand and support career technical education in state colleges, and includes a strong measurement component. As part of the Strong Workforce Program, a centralized database houses public data on student outcomes, enrollment, completion, employment, and earnings. Under development is a plan to measure a wide range of WBL activities, from career awareness and exploration-focused activities to those centered on career readiness and preparation.

[10] See "Registered Apprenticeship National Results FY 2018," US Department of Labor, last updated September 3, 2019, https://doleta.gov/oa/data_statistics.cfm.

[11] https://www.careerwisecolorado.org/.

[12] "Kentucky Awarded Nearly $1.1 Million Grant for Apprenticeships," *Lane Report*, June 14, 2018, https://www.lanereport.com/102287/2018/06/kentucky-awarded-nearly-1-1-million-grant-for-apprenticeships/.

[13] "Community College FAQs," Community College Research Center, https://ccrc.tc.columbia.edu/Community-College-FAQs.html.

[14] See "Apprenticeship Toolkit: Frequently Asked Questions," US Department of Labor, accessed February 27, 2020, https://www.dol.gov/apprenticeship/toolkit/toolkitfaq.htm.

[15] This case study in California examined co-ops and occupational coursework. Researchers used state data from students who graduated from community college between 1997 and 1999, defining co-op as "programs that allow students to earn course credit for paid or unpaid employment that is related to a specific occupational program of study," and occupational coursework as "occupational courses are those that prepare students for work in specific fields, such as information technology, business services, fashion, and auto mechanics" and that result in certificates or AA/AS degrees. See Darche, Arnold, and Newhouse (2004, 8–9).

[16] For example, Year-Up is a training program that serves young adults ages 18 to 24 in an intensive program focused on jobs in the financial and information technology sectors. Year-Up offers training that feeds into a paid internship, along with a stipend and robust support services that include professional skills training. An evaluation of the program found higher rates of employment and positive increases on earnings compared with the control group (Fein and Hamadyk 2018). An evaluation of Per Scholas, a social venture in New York City offering training, certifications, and internships, identified higher earnings and employment rates among program participants (Maguire et al. 2010).

[17] "Why Work-Based Learning?" Center for Apprenticeship and Work-Based Learning, accessed February 27, 2020, https://center4apprenticeship.jff.org/work-based-learning/models/.

[18] For more information on the challenges with accessing state wage records see Center for Regional Economic Competitiveness (2015).

[19] "State Longitudinal Data Systems: Does the State Have a Statewide Longitudinal Data System? What Is the Name of the SLDS?" Education Commission of the States, accessed February 27, 2020, http://ecs.force.com/mbdata/MBquest2RTAN?Rep=SLDS1602.

[20] Meghan Hughes was not interviewed but provided feedback on this report.

References

Barnow, Burt S., and Shayne Spaulding. 2015. "Employer Involvement in Workforce Programs: What Do We Know?" In *Transforming U.S. Workforce Development Policies for the 21st Century*, edited by Carl Van Horn, Tammy Edwards, and Todd Greene, 231–63. Kalamazoo, MI: W.E. Upjohn Institute for Employment Research. https://www.kansascityfed.org/~/media/files/publicat/community/workforce/transformingworkforcedevelopment/bookbychapter/ch9-employer-involvement.

Blair, Benjamin F., and Meghan Millea. 2004. "Quantifying the Benefits of Cooperative Education." Starkville: Mississippi State University.

Browning, Bill, and Rebecca Nickoli. 2017. *Supporting Community College Delivery of Apprenticeships.* Boston: Jobs for the Future.

Carnevale, Anthony P., Nicole Smith, Michelle Melton, Eric W. Price. 2015. "Learning While Earning: The New Normal" *Center on Education and the Workforce.* Washington, DC: Georgetown University. https://cew.georgetown.edu/wp-content/uploads/Working-Learners-Report.pdf.

Center for Regional Economic Competitiveness. 2015. *Balancing Confidentiality and Access: Sharing Employment and Wage Data for Policy Analysis and Research.* Arlington, VA: Center for Regional Economic Competitiveness. http://www.lmiontheweb.org/download/2015-05/Report--_Data_Confidentiality_and_Sharing_-_CREC-LMI_Institute_-_May_2015.pdf.

Crain, Andrew. 2016. Understanding the Impact of Unpaid Internships on College Student Career Development and Employment Outcomes. Bethlehem, PA: NACE Foundation.

Cronen, Stephanie, Meghan McQuiggan, Emily Isenberg, Sarah Grady. 2018. *Adult Training and Education: Results from the National Household Education Surveys Program of 2016.* Washington, DC: National Center for Education Statistics. https://nces.ed.gov/pubs2017/2017103rev.pdf.

Darche, Svetlana, Michael P. Arnold, and Corey Newhouse. 2004. "The Benefits of Work-Based Learning and Occupational Coursework in the California Community Colleges" *Hatchuel Tabernik & Associates.* https://www.mendocino.edu/sites/default/files/docs/work-experience/Benefits%20of%20WBL%20Report%205-04.pdf.

Darche, Svetlana, Nara Nayar, and Kathy Reeves Bracco. 2009. "Work-Based Learning in California: Opportunities and Models for Expansion." San Francisco: James Irvine Foundation. https://www.voced.edu.au/content/ngv:59054.

Fein, David, and Jill Hamadyk. 2018. *Bridging the Opportunity Divide for Low-Income Youth: Implementation and Early Impacts of the Year Up Program.* Rockville, MD: Abt Associates.

Gardner, Phil and Kenneth R. Bartkus. 2014. "What's in a Name? A Reference Guide to Work-Education Experiences" *Asia-Pacific Journal of Cooperative Education* 15(1): 37-54. https://eric.ed.gov/?id=EJ1113556.

Gemici, Sinan and Jay W. Rojewski. 2010. "Contributions of Cooperative Education in Preparing At-Risk Students for Post-High School Transition." *Journal of Education for Students Placed at Risk* 15(3): 241–258.

Giffin, Jessica, GeMar Neloms, Amanda Mitchell, and David Blumenthal. 2018. *Work-Based Learning Definitions State Agencies.* Washington, DC: American Institutes of Research, College & Career Readiness & Success Center. https://ccrscenter.org/sites/default/files/WorkBasedLearning_StateDefinitions.pdf.

Hanks, Angela, Annie McGrew, and Daniella Zessoules. 2018. The Apprenticeship Wage and Participation Gap. Washington, DC: Center for American Progress. https://cdn.americanprogress.org/content/uploads/2018/07/10122156/ApprenticeshipWageGap-brief1.pdf

Hollenbeck, Kevin and Wei-Jang Huang. 2006. "Net Impact and Benefit-Cost Estimates of the Workforce Development System in Washington State." Kalamazoo, MI: W.E. Upjohn Institute for Employment Research. https://research.upjohn.org/cgi/viewcontent.cgi?article=1023&context=up_technicalreports

Kessler, Lara, Dori Danko, and Rita Grant. 2009. "Internships as a Beneficial External Learning Environment: A Survey and Case Study of Accounting Interns and Employers." *International Journal of Learning* 16 (8): 125–40.

Kuehn, Daniel. 2017. "Diversity and Inclusion in Apprenticeship Expansion: Lessons from South Carolina." Washington, DC: Urban Institute.

Kuehn, Daniel, Ian Hecker, and Alphonse Simon. 2019. *Registered Apprenticeship in Science and Engineering*. Washington, DC: Urban Institute.

Lerman, Robert I. 2018. "The Virtue of Apprenticeship." Washington, DC: Urban Institute. https://www.the-american-interest.com/2018/10/17/the-virtue-of-apprenticeship/.

Lerman, Robert I., Lauren Eyster, and Kate Chambers. 2009. *The Benefits and Challenges of Registered Apprenticeship: The Sponsors' Perspective*. Washington, DC: Urban Institute. https://eric.ed.gov/?id=ED508268.

Linked Learning. 2012. *Work-Based Learning in Linked Learning: Definitions, Outcomes, and Quality Criteria*. The National Center for College & Career. https://casn.berkeley.edu/wp-content/uploads/resource_files/WBL_Definitions_Outcomes_Criteria_pg_120512_v2.pdf.

Ma, Jennifer, and Sandy Baum. 2016. *Trends in Community Colleges: Enrollment, Prices, Student Debt, and Completion*. New York: College Board Research. https://go.valenciacollege.edu/academics/programs/undergraduate-research/documents/trends-in-community-colleges-research-brief.pdf.

Sheila Maguire, Joshua Freely, Carol Clymer, Maureen Conway, and Deena Schwartz. 2010. *Findings from the Sectoral Employment Impact Study*. Philadelphia: Public/Private Ventures.

NACE (National Association of Colleges and Employers). 2019. Internship Co-op Survey Report: Executive Summary. Bethlehem, PA: National Association of Colleges and Employers. https://www.naceweb.org/uploadedfiles/files/2019/publication/executive-summary/2019-nace-internship-and-co-op-survey-executive-summary.pdf.

O'Higgins, Niall, and Luis Pinedo. 2018. Interns and Outcomes: Just How Effective Are Internships as a Bridge to Stable Employment. Working paper 241. Geneva: International Labour Organization. https://ideas.repec.org/p/ilo/ilowps/994999791602676.html.

Debbie Reed, Albert Yung-Hsu Liu, Rebecca Kleinman, and Annalisa Mastri. 2012. "An Effectiveness Assessment and Cost-Benefit Analysis of Registered Apprenticeship in 10 States." Princeton, NJ: Mathematica Policy Research.

Romano, Richard M., Rita J. Kirshstein, Mark D'Amico, and Willard Hom. 2016. "Adjusting College Cost Figured for Non-credit Enrollments." Ithaca, NY: Cornell University, School of Industrial and Labor Relations.

Rutschow, Elizabeth Zachry, and Jessica Taketa. 2019. *College to Work: Findings from a Study of the Career Readiness Internship Program*. New York: MDRC. https://files.eric.ed.gov/fulltext/ED596455.pdf.

Spaulding, Shayne, and Ananda Martin-Caughey. 2015. "The Goals and Dimensions of Employer Engagement in Workforce Development Programs." Washington, DC: Urban Institute.

Stern, David, Neal Finkelstein, Miguel Urquiola, and Helen Cagampang. 1997. What Difference Does It Make If School and Work Are Connected? Evidence on Co-Operative Education in the United States. *Economics of Education Review, Education and Work, and Efficiency in Education: Essays in Memory of Charles Scott Benson*, 16 (3): 213–29. https://www.sciencedirect.com/science/article/pii/S027277579600074X.

Sykes, Andrea. 2012. *Defining and Reporting Subbaccalaureate Certificates in IPES*. Washington, DC: National Postsecondary Education Cooperative.

Toglia, Jessica. 2017. *What We Know about Equity and Diversity in Apprenticeship*. Boston: Jobs for the Future. https://jfforg-prod-prime.s3.amazonaws.com/media/documents/Lit-Review-091517.pdf.

Torraco, Richard J. 2008. "Preparation for Midskilled Work and Continuous Learning in Nine Community College Occupational Programs." *Community College Review* 35 (3): 208–36. https://journals.sagepub.com/doi/abs/10.1177/0091552107310119.

About the Authors

Shayne Spaulding is a senior fellow in the Income and Benefits Policy Center at the Urban Institute, where her work focuses on the evaluation of workforce development and postsecondary education programs. She has spent more than 20 years in the workforce development field as an evaluator, technical assistance provider, and program manager. Her research has examined the public workforce system; community college innovations; employer engagement in workforce programs; services to parents, youth, and noncustodial fathers; and other topics.

Ian Hecker is a research assistant in the Income and Benefits Policy Center, where he studies the shifting nature of low- and middle-wage jobs to help understand and replicate effective policies and programs. Hecker's research covers apprenticeship programs, the Workforce Innovation and Opportunity Act, funding mechanisms for supporting skills development, and automation and the future of work. He also supports Urban's assessment of the JPMorgan Chase & Co. New Skills at Work Initiative, focusing on improving workers' access to skills and economic opportunity, and he provides data and evidence technical assistance to both government and nonprofit actors. Hecker graduated with a BA in public policy from the University of Michigan.

Emily Bramhall is a policy assistant in the Research to Action Lab at the Urban Institute, where she works on a variety of projects in the fields of education, workforce development, and inclusive growth. Before joining Urban, she worked with YouCAN, a high school summer program focused on promoting leadership and civic engagement in Buffalo, New York. Bramhall received her BS in policy analysis and management from Cornell University.

URBAN INSTITUTE · ELEVATE · THE · DEBATE

500 L'Enfant Plaza SW
Washington, DC 20024

www.urban.org