

9

Adult Learners

Activating Prior Knowledge and Acquiring New Skills

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Since the 2007–2008 financial crisis, the United States has seen a slow but steady recovery of the millions of jobs lost during the Great Recession. An often untold side of this recovery is that most of the new jobs created—99 percent—went to people with at least some postsecondary education. Only 1 percent of the 5.6 million jobs that require a high school diploma or less have returned, and most of these have been low-skill and low-wage (Carnevale, Jayasundera, and Gulish 2016). Many reports and studies have highlighted this failure of the United States to produce enough postsecondary graduates to satisfy future jobs (Baum, Ma, and Payea 2013; Carnevale, Smith, and Strohl 2010, 2013). Evidence is also mounting that the job seekers benefiting from the recent growth in new “good jobs” are predominantly those with education beyond high school (Carnevale et al. 2017).

The aforementioned disparities augur a complex crisis: as communities and businesses continue to create well-paid, high-quality jobs, the prospect grows that the nation’s workforce will fail to meet the rapidly changing needs of an increasingly technologically advanced, knowledge-based economy. In other words, the increasing demand for “middle skill” workers in the United States will far outpace the supply of these workers. Data from the Bureau of Labor Statistics cited in a recent *Journal of Business* report provides a measure of the problem: despite 8.3 million people looking for work in July 2015, 5.4 million job openings went unfilled, and more than 54 percent of employers reported open positions for which they could not find qualified candidates (Whittaker and Williams 2016). The lack of potential workers with the necessary postsecondary credentials is hampering economic

development across the nation and within many states (Carnevale, Smith, and Strohl 2013), and those individuals without postsecondary credentials are much less economically secure in times of economic fluctuation (BLS 2016).

The deficit of skilled workers is being exacerbated by three tendencies within industry and education: 1) neglecting to effectively engage substantial proportions of potential workers (particularly adults and nontraditional learners) in efforts to combat the deficit, 2) failing to adequately capture and validate existing learning possessed by those workers and apply it to their current and future jobs, and 3) inadequately aligning credentialing outcomes with the verifiable needs of employers, workforce and economic development goals, and industry sectors. In this article, we will explore each of these tendencies in detail, first discussing current challenges to engaging working-age individuals within higher education and, consequently, within the higher-skill job market. Next, we will consider potential sources of workers' knowledge and skills. Specific questions for consideration include how adults' learning and gaps in learning can be assessed and what barriers prevent these assessments. Subsequently, we will review specific, promising strategies for communities, employers, and institutions of higher education (IHEs), with assistance from the government and policymakers, and offer examples for partnerships to support increased assessment of knowledge, encourage corresponding training and credentialing, and better align workforce and education outcomes.

UNTAPPED POTENTIAL

Many initial efforts to address the skilled worker gap have focused on input, specifically on getting new potential workers into the workforce system via credentialing. To that end, some policymakers have placed increased emphasis not only on improving access to IHEs, but also on fostering successful degree completion. This latter and more recent effort has been made with the realization that most students who enroll do not graduate in the expected time frame, and many never finish at all.¹ Yet policies for access and completion have remained primarily directed at traditional college students (full-time, first-time stu-

dents aged 18–22 years old). Importantly, this traditional pipeline is in decline nationally (Kiley 2013), and additionally, there is not much room for improvement in the traditional pathway in most states, even if this source of students and workers was not decreasing (Finch 2016).

While there are notable examples of states, IHEs, communities, and other stakeholders developing policies and programs to address non-traditional students' needs, including adults over the age of 24, overall these programs are viewed as extensions of existing traditionally focused programs and do not offer comprehensive support for adult learners.² This is perplexing, since adults lately have been the fastest-growing population within American higher education (Hess 2011; Wyatt 2011). Furthermore, there is a failure to recognize that adults have unique needs and priorities in higher education that are often not sufficiently satisfied (Ruffalo Noel Levitz 2016). As such, stakeholders should focus more resources and efforts on identifying and satisfying the needs of the adult learner population, with particular strategies to assist their enrollment, persistence, and degree attainment within systems of higher education.

Because this traditional high-school-to-college pipeline is drying up, there is a need to reorient efforts toward activating larger numbers of individuals who are already of working age (that is, adults), especially those who are not connected to the formal economy, those underemployed in low-skill and low-wage occupations, and those who are vulnerable to job loss due to automation or offshoring. The potential benefit of such targeted treatment is twofold. This strategy is likely to increase the pipeline of new students with more pronounced career motivations (Knowles 1980; Ross-Gordon 2011) moving into, through, and out of higher education into those new, higher-skill jobs. Additionally, this reorientation will help place those unemployed and underemployed individuals into new jobs more quickly in the changing economy.

SURVEYING SOURCES OF SKILLS AND KNOWLEDGE

Focusing on the input of new individuals to the economy largely ignores those who are already there but could, through education and training, perform the higher-skilled jobs the economy requires. In par-

ticular, there is a struggle to validate and recognize existing learning already possessed by workers and match it with growing jobs and sectors. What skills, knowledge, competencies, and learning do workers have already? Do we (or the workers themselves) know the full extent of their knowledge and how it not only applies to their current jobs and career choices, but to potential and future career options in their region? Oftentimes, the answer to these questions is “No.” Workers, employers, IHEs, and industry professionals often at best can answer that question only with learning that has been clearly documented, particularly through formal training environments and credentialing. Even then, this is not always satisfactory. What about learning, training, and experiences that are informal within the workplace, or even learning that has been gained entirely outside a workplace or an IHE?

There are several reasons this determination is critical.

- First, it is inefficient to ask workers to undertake education or training for something they already know, wasting time and money for both employers and employees. Furthermore, adult learners and their employers are far less likely to engage in a process that seems repetitive and a waste of their time when they have competing priorities.
- Second, how can employers and industries be sure that they cannot find the people to fill skilled roles if they do not have a proper understanding of sources of knowledge beyond formal training and credentialing or do not know what learning their employees already possess?
- Last, it is more effective to pursue and train a potential worker (or even more so, a current employee) who is already in the workforce and may already possess some of the real-world (and in-demand) skills than to educate, train, and attract a traditional student from scratch.

Before determining strategies for evaluating and recognizing workers’ knowledge, it is important to understand the sources and challenges associated with utilizing and documenting them. Many of us are accustomed to the idea that we learn at school and that a college education is acquired in college classrooms. In reality, however, learning takes place in all aspects of a person’s life—through military experience, raising a family, volunteering, and perhaps most significantly in the workplace.

Learning that occurs in the workplace can be very job specific, but it can also be broader—something that helps employees develop skills and competencies, take on new responsibilities, and even contribute to the organization’s bottom line. Thus, learning, whether in the workplace or elsewhere, can occur in a number of ways.

Formal Learning in the Workplace or Formal Credentialing

Formal learning is intentional learning that happens in college classes or professional trainings. Because of the established structure and expertise of higher education, industry certifications, and formalized workplace trainings, many employers, workforce developers, and industry experts rely on such credentialing to determine the skills and knowledge possessed by a worker. However, increasingly, many employers have indicated that they feel students exiting higher-education programs do not have the necessary skills or knowledge they would expect of them, which is often referred to as the “skills gap,” particularly in soft skills (Jaschik 2015). There is some debate over the exact cause of this gap—whether it is due to inadequacies in the programs, the rapid changes within industries compared to the length of programs, generational shifts, or the lack of clarity from industry and employers about needs and expectations (Freifeld 2014; Tulgan 2016; Whittaker and Williams 2016). Furthermore, while highly valued, many individuals and those outside formal learning environments tend to find these structures inflexible and slow to react, which poses serious problems for workforce alignment with rapid changes in the economy and skills (Anderson, Boyles, and Rainie 2012). It also tends to be the most expensive and time-consuming form of learning, typically requiring substantial time and resources to be set aside to complete it.

Informal Learning in the Workplace or Elsewhere

Informal (or experiential) learning occurs when someone is exposed to situations that facilitate acquiring knowledge or a new skill. Within the workplace, most jobs require a certain level of specialized knowledge that is often acquired informally by learning from peers and supervisors, studying instructional materials, or through simple trial and error. However, many adults have additional learning experiences out-

side work from the military, volunteer work, self-study, or daily life that may lend themselves to being applied in their current or future occupations (Klein-Collins 2010). This type of learning is more flexible in its structure, more varied in its sources, and very often directly applicable (and current) to the worker's job. However, as it is not typically part of workplace culture to constantly and rigorously evaluate workers' learning, employers often do not realize such knowledge exists, do not think to ask about it, and do not systematically evaluate it. Furthermore, workers are not typically well equipped to recognize their own informal learning or to articulate these skills and knowledge to employers (Millar and Miller 2014).

Nonformal Learning in the Workplace and Elsewhere

Nonformal learning takes place in a structured setting like a workshop or mentoring session. Sometimes, employers organize nonformal situations in which the employee is likely to learn general lessons and tricks of the trade. Nonformal learning shares many of the characteristics, benefits, and drawbacks of informal learning, but it is more deliberate and structured, similar to formal training, making it more likely to be noticed by employers.

In short, employers do not tend to recognize or support learning that takes place outside formal settings, let alone document it or evaluate it, and employers also tend to feel that the formal training that is provided is not adequate. Similarly, workers' conceptions of what they know are more likely to be based on what they have learned in formal settings, and they are not always the best advocates for their own informal and nonformal learning. Both employers and employees do not feel that they fully grasp what a given worker truly knows and whether it aligns with workforce needs.

Who should be responsible for evaluating and validating various types of learning, particularly informal and nonformal learning? Traditionally (although not always uniformly or adequately), higher-education providers have undertaken this task through efforts such as Prior Learning Assessment (PLA). In the near future, they are probably best equipped to continue to do so, so long as the expansion of such efforts is supported. As it stands, such thorough evaluations are not typically part of the culture of most employers, and employers rarely

trained to recognize or assess such learning. Some do offer reviews in connection with promotions and hiring, but many rely heavily on formal learning sources. Others may indirectly support such efforts, such as by altering tuition assistance programs to pay for PLA fees at IHEs. Last, there are industry certifications, licensures, and apprenticeships (formal learning options) that may incorporate prior learning evaluations in some areas but not all, and these often do not cover soft skills. There may be an opportunity in the future for businesses and industries to take a more direct role in learning evaluation; at this point, however, it is an open question as to whether employers should begin to take on this particular role.

TOOLS AND PRACTICES FOR VALIDATING LEARNING

While many challenges exist in determining current and prior learning, what do workers *need to know*, how do we *assess and validate* this learning, and how can we *encourage* workers to participate in this process within a postsecondary credentialing context? How do we teach these individuals the skills and knowledge that we have determined that they lack? Fortunately, there are some established and growing practices, within the academic realm, that many partnering communities, employers, and IHEs have begun to implement.

Prior learning assessment (PLA) and competency-based education (CBE) represent two specific opportunities to more formally align nonclassroom experiences with academic learning outcomes. PLA is the *assessment process* by which many colleges evaluate, for academic credit, the college-level knowledge and skills an individual has gained outside the classroom (or from noncollege instructional programs), including employment, military training and service, travel, hobbies, civic activities, and volunteer service. PLA recognizes and legitimizes the often-significant learning in which adults have engaged in many parts of their lives. Furthermore, students with PLA credit are 2.5 times more likely to graduate than students without PLA credit (Klein-Collins 2010). This is true for students regardless of race/ethnicity, age, financial aid status, or gender. PLA students also have higher persistence rates and a shorter time to degree completion, according to Klein-

Collins. Through PLA, adults learn the value of their experience, which boosts their confidence to complete their degrees.

CBE, meanwhile, is a term used for *education programs* that focus more on what students have learned, rather than on where or how long the learning takes place. Instead of evaluating student progress primarily on the amount of time spent in a classroom (using the credit hour, which is the default standard for measuring progress), CBE programs typically have clearly defined competencies that students must demonstrate through a rigorous assessment process before they can progress and earn a degree. Students may be assessed at various points in a CBE program on their content knowledge, and in doing so, IHEs determine what a student still needs to learn and teach the student only the knowledge and skills that they are missing—in other words, they fill in the knowledge gap. Because many CBE programs have been designed to allow students to learn and progress at their own pace, students with learning from life and work experience can save considerable time in earning a degree. Above all, CBE programs are designed to improve the quality of higher education by putting the focus squarely on demonstrated learning outcomes.

PLA and CBE should not be seen as separate strategies or approaches to degree completion. While PLA is primarily an *evaluation process* to convert noncollege learning into college credit, and CBE is an *educational approach* to delivering learning to students (learning that they did not obtain elsewhere), their relationship is a close one. Both PLA and CBE in all their forms share a common underlying philosophy that higher education needs to value and reward what a student knows and is able to do, regardless of how the student learned, where the student learned, and how long it took the student to learn—as long as the learning is at the college level. In fact, PLA can be an important gateway to the CBE program, with several PLA methods offered to students so that they can demonstrate required competencies based on their extra-institutional learning.

Both approaches also have particular roles to play in evaluating, documenting, and teaching the skills and knowledge that are essential to employers and industry. In particular, when drawing from job experiences, PLA can help integrate and better align a student's academic career with that student's professional career. What sets CBE programs apart is the focus on students being able to apply their knowledge in

real-world settings. Students often demonstrate competencies by completing the kind of projects or assignments that they would regularly encounter in an actual workplace. The idea is that through this kind of “authentic assessment,” IHEs will be able to say with confidence to employers that their graduates are well prepared for the workplace.

Employers respect work-based learning for its relevance and applicability. When this type of learning is woven through academic degrees, either by PLA or CBE, employers gain confidence that individuals with those degrees both know things and can do things and that the knowledge and skills development are mutually reinforcing. Both PLA and CBE precisely offer this interweaving of experiential learning within academia, tying education credentials to very real, highly valued workplace capabilities. Furthermore, PLA and CBE can play a more strategic role that helps align those IHEs to the communities they serve. Taking advantage of such opportunities will help employers recognize and value specific degrees and enable them to appreciate the benefits of postsecondary attainment more broadly. There are several examples of employer, education, and community partnerships that have promoted and supported PLA and CBE efforts.

Prior Learning Partnerships

A community college in Wisconsin undertook an initiative to examine how the assessments in its Manufacturing Essentials program could be modified to evaluate whether noncredentialed manufacturing employees have the skills and knowledge equivalent to those with credentials and to develop new assessment tools and techniques. Manufacturing faculty also received training on PLA standards and quality and on the application of those standards within their manufacturing program.

When a cosmetics manufacturing facility in Ohio announced that it was closing, many of the employees were unsure what they would do next or whether the skills developed there would serve them in any other industry. In reviewing their job roles and responsibilities, the Council for Adult and Experiential Learning (CAEL) discovered that many of those same skills are desired by pharmaceutical manufacturers. “Skills crosswalks” were created to help the transitioning workers leverage the value of their experience and prior learning to identify new

career paths, and to progress through training more rapidly than they had expected or thought possible. Additional work was completed with local colleges and BioOhio, a bioscience industry association to help the employees fill the remaining skills gaps so that they were ready for jobs in the emerging pharmaceutical industry and to become able to adapt to changing economic conditions.

Competency-Based Collaborations

Lipscomb University in Nashville, Tennessee, developed a competency-based education (CBE) model for nontraditional students returning to college to complete a degree. The Customized, Outcome-based, Relevant Evaluation (CORE) is a CBE model that integrates the use of behavioral assessment, online development, faculty coaching, and traditional coursework that can lead to a bachelor's degree. A total of 15 competencies are evaluated by Lipscomb, and these competencies can be added to students' transcripts through a system of electronic badges that document four levels of mastery for each competency. The badges can be used to demonstrate competencies to an employer, or they may be converted to credit hours and applied toward a bachelor's degree at Lipscomb. Furthermore, there is a behavioral assessment process, in which the student is placed in a simulated work situation and behavior is observed and evaluated by multiple assessors. Students who do not demonstrate all competencies can enroll in online, self-paced modules to develop the competencies. Faculty coaches assist the students during these courses. Many CORE students come to the program through their employers, who are interested in the behavioral assessment of work-related competencies (CAEL 2014).

Seattle City University (CityU) first began its endeavor with performance-based education 14 years ago in collaboration with the state of Washington through the development of a bachelor's-level, state certification program in K–12 teaching called the Alternative Route to Teacher Certification. In 2012, CityU launched two additional performance-based degree programs: 1) a Master's in Education (MEd) and 2) a Master's in Teaching (MIT). All of CityU's performance-based programs currently offered to the public are in the field of K–12 education, and the programs' primary target audience is professionals who are currently working in the field. The online, self-paced courses—or learning

blocks—in CityU’s performance-based programs are designed around a set of competencies. Candidates in these programs are assessed on their mastery of these competencies and state requirements through the evaluation of artifacts that they choose to submit from their own teaching practice. The completion of each learning block results in credit hours required for completion of the degree program (CAEL 2015).

TOOLS FOR ENCOURAGING WORKER ENGAGEMENT AND ALIGNING HIGHER EDUCATION AND WORKFORCE DEVELOPMENT

This article has addressed population targets for upskilling within the economy as well as determining what these workers still need to know and how to teach it to them within higher education. While evaluating for and awarding academic credits toward a credential is important, college credit alone is insufficient for helping workers through education and into growing jobs in their communities. Employers, IHEs, and civic partnerships must take steps to promote lifelong learning and the engagement of adult learners generally, while also promoting the development and alignment of target-sector skills and developing a workforce that not only possesses requisite skills and knowledge but also can apply those skills and knowledge in the real world.

As with conventional coursework, IHEs run the risk of issuing credits (and accruing to credentials) that garner respect generally, but whose practical utility is unknown, misaligned, or nil. If IHEs apply rigorous standards to validating skills and knowledge that students and employers may not recognize as relevant, then we will have missed the mark. Of course, high relevance absent rigorous standards is equally problematic. We need both high standards and high relevance to local industry needs in order to show workers and employers the full value of the learning. Furthermore, if we cannot convince employers, workers, and other community partners to engage in and support this type of learning, then strategies such as PLA and CBE will be insufficient.

Such efforts are too numerous to fully explore within this article, and they often vary considerably, depending on the exact local context. However, below are some examples of such partnerships pursuing

efforts that are broader than, but complementary to, efforts to evaluate prior learning for college credit and postsecondary credentialing.

The Energy Providers Coalition for Education (EPCE) is a group of industry representatives that develops, sponsors, and promotes industry-driven, standardized, quality online learning programs to meet the workforce needs of the energy industry (EPCE 2018). EPCE partners with colleges to create an online curriculum that supports clean-energy solutions and smart-grid deployment in order to train current and future industry workers. In EPCE's nearly 15-year history, more than 5,000 electric power industry workers across a variety of job categories have furthered their education. The programs combine online instruction with both classroom and apprenticeship training. EPCE also built a model to move high school students directly from energy industry coursework into employment and/or into a postsecondary energy-industry certificate or degree.

The Nashville Chamber of Commerce partnered with the Council for Adult and Experiential Learning to help determine how area colleges, universities, and technology centers can engage new learners, including adults. Using CAEL's Adult Learning Focused Institution (ALFI—now rebranded as Adult Learner 360) criteria and tool kit, Nashville colleges identify opportunities to become more adult focused. Opportunities were identified for the IHEs to build and leverage strategic partnerships between employers and IHEs to engage more adult learners. In addition, Tennessee institutions enlisted technical assistance to encourage nontraditional learners to enroll in college through PLA efforts.

Northeast Indiana's Big Goal Collaborative worked with partners to create an education training asset map of the region that showed how the current landscape of skills aligned with the needs of the target and growing economic sectors (NIRP 2018). This included

- identifying which education programs are directly linked to the region's employers;
- reviewing economic and labor market data to verify which sectors are growing;
- creating a set of sectors and occupation groups that focus on the education asset inventory;
- reviewing education and training programs to document the programs and offerings that relate to the target lists; and

- providing analysis and regional recommendations to better align program offerings to meet target-sector needs.

The Tulsa Regional Chamber of Commerce recognized that general prosperity and high employment in the region was not reaching all neighborhoods and members of the community. Stakeholders in the Tulsa region worked with technical assistance providers to create a plan to better connect all Tulsa residents to learning and job opportunities. They analyzed the region's target sector and employment growth projections, local education and training systems supporting skill development in the target sectors, and the various barriers to gainful employment and access to education in three highly underserved neighborhoods in eastern, northern, and western Tulsa. This analysis led to a comprehensive strategy, which focused on improving programmatic and sector-focused content within the education and training system, communication mechanisms designed to increase the awareness of careers and education pathways, and collaboration among the many and varied workforce stakeholders and leaders in metro Tulsa (Tulsa Regional Chamber 2018).

CONCLUSION

Simply stating that the United States currently lacks the skilled workforce it needs for the next generation of jobs fails to underscore the complexity of the problem. Challenges exist with the *individuals* being engaged (inputs), the *skills and knowledge* they already possess or need to learn (throughputs), and how well these efforts are *aligned* to national and regional needs (outputs). First, there are insufficient numbers of individuals being engaged in upskilling within the economy. In particular, efforts need to be taken to target existing workers and adults rather than relying on the traditional high school pipeline to help workers acquire those skills and fill those jobs. Second, there is an inadequate inventory and matching of the skills and knowledge that are currently possessed by American workers. Rather than assuming that workers lack knowledge simply because it has not been formally validated yet (or that they do have it simply because they have had formal training), it is critical that workforce and economic development part-

ners develop, support, and engage in thorough and rigorous methods of evaluating and validating worker skills and knowledge. Only then can programs be implemented to provide education and training to fill the knowledge gaps that exist. Last, in order for these efforts to be useful for wider economic development considerations, it is critical that these improved pipelines align higher education outputs with employer and sector needs and growth. Employers, IHEs, governments, communities, economic developers, and workers must partner to address each of these components comprehensively if the workers of today are to ever have the jobs of tomorrow.

Notes

This chapter was partly adapted and compiled from other CAEL publications (CAEL 2014, 2015; Finch 2016; Klein-Collins 2010; Simon 2015, 2016; Tate and Klein-Collins 2015; Wax and Klein-Collins 2015). Examples provided are from instances where CAEL provided technical assistance services.

1. The national fall 2006 cohort for associate and bachelor's students was compared with the combined summer 2009 graduates using the most recent data from NCHEMS (2009). For more information, see American Association of Community Colleges (2016); Complete College America (2014).
2. In this chapter I will primarily be referring to "adult learners," which are defined as students aged 25 to 64. "Nontraditional students" are students that the National Center for Education Statistics defines as having one or more of the following characteristics: "delayed enrollment into postsecondary education; attends college part time; works full time; is financially independent; has dependents other than a spouse; is a single parent; or does not have a high school diploma." Adult learners represent a substantial proportion of nontraditional students, and there is considerable overlap in terms of needs, expectations, and outlooks (Pelletier 2010, p. 2).

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