



# Delivering Innovation Economy Skills While Wisely Using Public Funds

## Educating Today's Working Learners to Meet Tomorrow's Demands

Louis Soares | March 2011

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### Introduction and summary

Public, business, education, and labor leaders are on the frontlines of the nation's economic revival. Public policies come together with business strategies and workers' knowledge, skills, and abilities at the state and regional level to encourage business growth, create jobs, and educate workers.

The last of these three areas, educating workers, may be the most important investment we can make for America's long-term success in the global innovation economy. No less an expert than Nobel Laureate economist Gary Becker has stated that "the stock of education, training, skills and even the health of people constitutes about 75% of the wealth of a modern economy. Not diamonds, buildings or oil but things that we carry in our heads."<sup>1</sup>

More specifically, in the global innovation economy America must compete in, the skills required for national competitiveness and individual success are both ratcheting up—with one year of postsecondary education the bare minimum—and evolving into a mix of book learning, experience, and creativity. This new mix of skills will apply in every sector of the economy—clean energy, nanotech, biotech, and health care—as firms create new business models and redesign work practices to compete effectively. Providing learning experiences that deliver this skills mix will require a postsecondary education system that combines the flexibility and labor-market focus of the nation's workforce-training programs with the educational rigor of our colleges and universities.

To achieve this hybrid system of book learning and experience, public, business, education, and labor leaders must work together to ensure that we create public policy that incents training and education programs—whether they be provided by community colleges, universities, community-based organizations, vocational schools, unions, or employers—to complement each other in ways that ensure students get the skills they need as quickly and efficiently as possible. In other words, we need to connect the dots among these various programs to ensure quality education and good use of public and private investment.

Connecting the dots is even more critical in these tough economic and fiscal times. We know, for example, that workers with less education were disproportionately affected by the recession. Workers with some college or less account for nearly 70 percent of the long-term unemployed.<sup>2</sup> But supporting them through these extended tough times and providing educational assistance that prepares them for emerging employment opportunities is a complex policy problem. Some need more training than the programs currently funded through the federal Workforce Investment Act offer. Others cannot attend college courses in the traditional semester-based model because of family responsibilities.

Questions also arise regarding which jobs we should educate people to do. Which skills will they need for these jobs? How will workers with family and life responsibilities complete a course of study? Who should deliver the education? These questions must be answered with solutions that guarantee public resources are used in ways that get the maximum return on investment given public budget challenges.

This brief provides a guide to help public, business, education, and labor leaders work together to invest in workers with an eye toward connecting different programs to serve them and using resources prudently.

First, it describes how the skill needs of the innovation economy are demanding more and better collaboration among training providers, colleges, employers, and unions. Second, it highlights that the needs of the growing population of “working learners” must be taken into consideration if we are to help individuals succeed in getting postsecondary credentials. Finally, it provides examples of programs and policy recommendations that can help connect the dots between liberal arts and occupational education, build stronger bridges between training programs and colleges, and help working learners get an education while navigating a complicated labor market.

Providing quality education and training in ways that leverage resources is daunting. But our leaders do not need to reinvent the wheel. They just need to make sure that all the wheels are moving in the same direction.

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## 21st century economy skill demands

### Book learning and applied skills

Job openings are so few and far between these days that it can be easy to forget that new technologies, technology services, globalization, and changes in the way businesses organize work are still driving an increase in demand for postsecondary-level skills and credentials.<sup>3</sup> As the nation pulls out of the recession, the Georgetown Center on Education and the Workforce is projecting that of the 47 million new jobs created through 2018, 30 million will require postsecondary education. The center’s research

further indicates that over this time period, America will experience a 3-million-degree shortfall in the degree production needed to meet this demand. This will lead to a skills gap and a competitive disadvantage for the United States.

This shortfall in the number of degrees is not the only issue these dramatic technological and economic changes are presenting. They are also shifting the skills mix toward a complex blend of applied skills and book knowledge. Employers are increasingly demanding that employees at all levels hit the ground running with technical expertise, business acumen, and creativity.<sup>4</sup>

A recent *Wall Street Journal* survey of Fortune 500 recruiters illustrates this reality. Jennifer Merritt, the lead reporter on the survey, summarized corporate recruiter thinking with the following statement: “The bottom line: If you take advantage of what you can get at a strong state school or private university and you make certain you arm yourself with both the academic know-how and the ability to problem-solve and work in teams in the real world, you’re going to be among the grads employers most want to hire.”<sup>5</sup>

It is not just more credentials that the economy requires but applied skills to add value in an economy in which value is added through innovation.<sup>6</sup> In other words, getting more people to graduate with more education is not our only challenge—we also need to find a way to make people book smart and workplace savvy at the same time.

The labor market is still reflecting the demand for this unique set of book knowledge and applied experience at all levels of education even as the unemployment rate stubbornly hovers around 9 percent. Noted *New York Times* reporter Louis Uchitelle wrote about the kinds of jobs in demand back in June 2009, saying:

*Unnoticed in the government’s standard employment data, employers are begging for qualified applicants for certain occupations, even in hard times. Most of the jobs involve skills that take years to attain. Welder is one, employers report. Critical care nurse is another. Electrical lineman is yet another, particularly those skilled in stringing high-voltage wires across the landscape. Special education teachers are in demand. These jobs appear across all sectors of the economy, so the demand is not connected to one industry’s growth trajectory. Rather, for these hard-to-fill jobs, there seems to be a common denominator. Employers are looking for people who have acquired an exacting skill, first through education—often just high school vocational training—and then by honing it on the job.*<sup>7</sup>

One key observation we can draw from Uchitelle’s reporting is that the skills required for these in-demand, well-paying jobs are skills that cannot be gained solely in a classroom or through on-the-job training. The new frontier of effective worker education lies in combining classroom and workplace education to produce a hybrid of technical knowledge and hands-on skills.

The only way to develop curriculum and instruction models that deliver this skill set to large numbers of Americans is for business and education leaders to build collaborations that leverage their combined knowledge of labor markets, skills, pedagogy, and students.

### Innovation is driving this skill demand

The trend toward a blend of book and applied knowledge in jobs is further accelerated by America's need to compete in an increasingly innovative world.

Innovation—or the generation and application of new knowledge to developing new products, processes, and services that consumers and society find valuable—is a key driver of productivity and growth for the United States and most developed countries. As increasing numbers of developing countries with low-cost production and technology-enabled access to global supply chains enter markets, businesses in developed countries, each in their own way, need to migrate their business models toward innovative work by “creating new markets, increasing choice and value to customers and innovating on a global basis.”<sup>8</sup>

The process of creating new markets involves solving complex challenges our economy and society face: clean energy production; security, health, and well-being for an aging population; and innovative technological supports for education. All of these provide ample opportunities for high-value products and services. The nuanced mix of technical knowledge, business acumen, and creativity involved in a business competing on innovation is beyond many developing countries for now.

This complex mix of applied skills favors individuals with postsecondary education, but not just research scientists and engineers, as one would expect. Science and technology are creating innovation-enabled 21st century job opportunities for working Americans in frontline jobs such as biomedical and energy efficiency technicians, social media communication assistants, new materials production workers, and advanced manufacturing floor workers.

Moreover, 10 years of research on “the way innovation happens demonstrates that the process is multi-disciplinary, collaborative and democratic.”<sup>12</sup> In other words, it turns out that building a hydrogen car or a new online banking service or a new store layout requires scientists doing basic research, engineers applying that research to new hardware and software, frontline workers providing input about workflow and delivering value-added customer interactions, and even customers to provide feedback during development.

## Workplace practices are changing

We are also seeing firms respond to new production and communication technologies by developing new organizational models that promote incremental innovation from frontline employees. These business models use frontline strategies such as self-directed teams, multiskilling practices, offline committees, and performance incentives to engage workers in continuously improving products and processes to add customer value. These models are spreading and are sometimes called “high-performance workplaces.”<sup>9</sup>

The concept is that an educated workforce at the point of production can contribute numerous “smaller innovations” and improvements that add up when taken together. Firms as diverse as Toyota, Southwest, Google, and Men’s Wearhouse are implementing these strategies. The core practices of high-performance work have been expanding in the U.S. economy since the mid-1990s. A recent study shows adoption by 45 percent of firms.<sup>10</sup>

One last aspect of economic competitiveness and education in the 21st century is worth noting. The occupations and business models illustrated above require continuous learning on the job and in formal settings. As such, work and learning are becoming parallel as opposed to sequential events.<sup>11</sup> And the timeframe for employees to apply new and synthesized knowledge is being compressed. Recent surveys of senior human resource managers indicate that adaptability and applied skills such as critical thinking, IT application, teamwork, creativity, and diversity are the most likely to ensure workplace and business success in the coming years.<sup>12</sup> The same surveys found an average of 40 percent of postsecondary graduates deficient in these skill areas.

Both increasing the number of workers with postsecondary credentials and enhancing the skill mix they learn so they are ready for the innovation economy will require a much closer alignment of the nation’s worker-training programs and our traditional higher education system. Worker-training programs include public investments through the federal Workforce Investment Act and a variety of state-level initiatives as well as those programs funded by employers and through joint-management labor partnerships. The higher education system includes accredited institutions including community colleges, four-year colleges and universities, and for-profit proprietary institutions.

These education and training institutions currently do not blend academic and hands-on education very well. They don’t do enough to ensure workers can transition between programs easily and they don’t deliver instruction in ways convenient for many unemployed and underemployed workers who already have labor-market experience and other family and life responsibilities.

Public, business, education, and labor leaders need to connect the dots between these sets of programs to begin to make college credentials more employment ready and workplaces more learning friendly. That’s how we can engage unemployed and underemployed workers and working learners, a fast-growing group of Americans we’ll look at next.

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## Working learners: A new kind of college student

The Great Recession and slow recovery we are now experiencing exacerbates the challenges faced by Americans who are already in the workforce and need to get more education and obtain a postsecondary credential. The Center for American Progress defines these individuals as working learners.

The working-learners definition groups the diverse set of Americans who are in need of further education rather than the usual policy approach of defining them by their differences, such as English as a second language learner, nontraditional, low literacy, and so on. Defining them in this way makes the education challenge more manageable.

At the highest level of similarity, working learners are individuals ages 18 to 64.<sup>13</sup> They are already in the workforce but lack a postsecondary credential and need to earn a living for themselves or their families. A working learner can be employed or unemployed—in the sense that they have high labor-market attachment and are not likely to be full-time students for any length of time—married or single, male or female, or a child living with a parent but whose earnings are critical to family income.

A conservative measure of this potential pool of working learners is 75 million Americans, or 60 percent of the workforce.<sup>14</sup> Working-learner diversity, however, belies three key commonalities.

As students they:

- Will obtain a postsecondary education through simultaneous working and learning or moving between the two
- Seek to build skills and obtain credentials that employers will recognize and compensate
- Need developmental education to shore up literacy, numeracy, English-language, and college-success skills<sup>15</sup>

Developmental education, the instructional programs that help working learners improve their basic numeracy and literacy to college levels, is a common trait that presents unique challenges for working learners. The National Commission on Adult Literacy's recent report "Reach Higher America" estimates almost all working learners need help in at least one of these areas in the third bullet above when pursuing further education, especially college.<sup>16</sup>

In this recession the ranks of unemployed and underemployed are filled with working learners. But these individuals are part of a much larger trend in postsecondary education. According to the U.S. Department of Education, 73 percent of college undergraduates in the 1999-2000 school year were in some way nontraditional in that they did not meet the definition of a "traditional" student—a high school graduate that attends

college immediately, is full time, and is financially dependent on parents.<sup>17</sup> And during the early 1970s, nearly three-fourths of undergraduate students fell into the 18-to-21 age bracket but today only about 56 percent fit that description.<sup>18</sup>

The percent of undergraduates over the age of 24 is also on the rise. About 43 percent of undergraduates who were enrolled in postsecondary education were age 24 or older in the 2003-04 academic year, up from 27 percent in 1970. Eighty-two percent of these older undergraduates worked while enrolled in postsecondary education in 2003-04, the last school year in which complete data are available.<sup>19</sup> This is up from 27 percent in 1970. This aging of undergraduates is redefining the boundaries between college and other adult activities such as employment, marriage, and childrearing.<sup>20</sup>

Working learners who are combining work, life, and educational responsibilities face particular challenges in pursuing postsecondary credentials. Longitudinal research that followed a group of students over a decade found that six years after students began their postsecondary education, 62 percent of adult “employees who study” (working learners who put their work before their studies, or in economic parlance have a high labor-market attachment) had not completed a degree or certificate and were no longer enrolled, while 37 percent had achieved a degree or certificate. Among the adult “students who work” (working learners who put their studies before their work, or have less labor-market attachment), the rate of attrition was 39 percent, with 44 percent of them achieving their credential within six years.<sup>21</sup>

The reasons are straightforward for the higher level of attrition among working learners seeking postsecondary degrees or certificates. A national survey of 1,500 adult students conducted by the Lumina Foundation documented these key factors. When asked which items would make it easier for them to succeed in obtaining a postsecondary credential, they responded:

- Convenience to work and home
- Affordability
- Good information regarding financial aid and credential programs and processes
- Child-care supports
- Developmental education
- More convenient course-delivery systems<sup>22</sup>

Affordability and convenient course-delivery systems are of particular concern. The financial barrier to postsecondary education is substantial for working learners. Paying \$2,000 for a full-time semester at a community college or even \$300 to \$500 in tuition and fees for one course at a community college competes with paying for living expenses and raising a family. Courses for subassociate’s degrees or occupational certificates can cost between \$5,000 and \$9,000. Costs for books, transportation, and child care add to the bills.<sup>23</sup>



Education that leads to employment opportunities in growing sectors and convenient course delivery—at times and in ways that fit with work and life responsibilities—are both key to working-learner success. Yet most postsecondary institutions ask working learners to get their education the same way traditional students do. Programs are typically available over 16-week semesters, with each course usually requiring multiple campus visits each week—very often during the day. There is a great emphasis on hours in the classroom rather than on allowing students to demonstrate proficiency on a topic and move on to the next topic or course.

In short, working-learner needs push the boundaries of traditional postsecondary education and workforce-training programs. And we need to pay attention to these needs as this population expands.

Working learners must be able to maintain their employment and family responsibilities while pursuing further education. Further, many of these working learners have some college credits but no credential. They are among the large number of high school graduates who entered college but left without completing a degree. A growing body of evidence indicates that to be successful, working learners require flexible education programs, courses of study that yield educational credentials that employers value, career guidance, and easy-to-use financial assistance.<sup>24</sup>

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## Policy recommendations

In summary, the demand for innovation-economy skills has both elevated the education level needed for economic competitiveness to a postsecondary level and changed the mix of skills needed by workers to add value in the workplace.

“Connecting the dots” between workforce-training programs and colleges and universities to help working learners succeed given these skill demands requires changes in postsecondary policy and practice at the federal, state, and institutional levels. Serving these working learners requires a significant rethinking of the very idea of a “college education.” The traditional view of college—four to six years of full-time study in the cloistered environment of a college campus before entering the “real world” of work—is simply not relevant to working learners.

The current structure of U.S. higher education lacks the flexibility to permit movement between work and learning on the scale required to meet the challenge. In contrast, job-training programs provided by employers and unions or through the public workforce-development program contain the needed flexibility but seldom yield recognized credentials.



We will highlight the policy issues and propose solutions to these problems using several examples. Our recommendations are aimed primarily at state and institutional levels since many of the challenges outlined earlier are governed by these policies.<sup>25</sup>

We use a conceptual framework we call “connecting the dots” to underscore the fact that there is no need to reinvent the wheel. Most of the elements needed for the postsecondary education system we outline exist, but they operate according to policies that are still aligned with the mass-production economy in which technical knowledge and workplace savvy could be developed separately rather than the innovation economy that requires that they be developed simultaneously.

This lack of alignment and connectivity causes Peter Smith to argue that postsecondary education is “not a system at all ... [but] actually resembles a large and diverse cottage industry”<sup>26</sup>—a plethora of education providers including colleges and universities, community colleges, community-based organizations, employers, and labor unions, each of which implements and measures learning processes in unique ways and confers course credit and credentials based on different criteria.

Connecting the dots refers to integrating this array of providers in three ways:

- Reducing the sharp divide between the traditional liberal arts and vocational-professional curricula and integrating the competencies of both in new ways
- Building new connections among various types of postsecondary education providers so learners can progress smoothly from one to another
- Enabling working learners to “earn while you learn” by making educational opportunities available in formats and with funding structures that permit people to continue working while acquiring new knowledge and skills

These three types of integration we propose will enhance economic competitiveness and improve individual opportunity, providing Americans with the ability to creatively apply knowledge to real-world situations and to bring knowledge gained in the real world to the classroom. Such integration also ensures education is delivered in a way that meets working learners’ need for flexible learning options that accrue credit and credentials across many providers.

Facilitating these types of integration requires significant policy changes at the institutional, state, and federal levels. The challenge is to adopt new policy levers that will encourage broader diffusion of innovations that increase access to postsecondary education for working learners while maintaining and increasing the breadth, rigor, and standards of excellence associated with college-level learning.

Below we propose policy changes to bring the three types of integration to bear.

## Integrate liberal arts and vocational-professional curricula

A growing number of colleges and universities now provide work-based learning opportunities such as service learning, internships, and research and teaching assistantships. All of these opportunities add valuable applied experience to liberal arts curricula. For the most part, however, such experiences do not reflect broader integration of occupational-professional knowledge with traditional liberal education or vice versa.

Here we want to highlight some new initiatives that seek to achieve a higher level of integration between the knowledge demands of work and the academic curriculum.

### **Connecting workforce-development and job-training programs to degree paths.**

As we have described, workforce-development programs at their best deliver outcome-based training, build partnerships, and provide support to help working learners navigate changes in the labor market. There is a well-established methodology for assessing the credit course equivalent of noncredit courses and experiential learning. The process can lead to the inclusion of more general learning outcomes in job training and work-based learning outcomes in college programs.<sup>27</sup>

Two examples illustrate the potential impact of expanding this process. The Washington State Community and Technical Colleges' Integrated Basic Education and Skills Training, or IBEST, program seeks to move low-income, nonnative English speakers quickly through a combination of English as a second language, intensive adult basic education, and skills training linked to occupation credentials.<sup>28</sup> Innovative models such as IBEST are an essential first step that help working learners obtain a recognized credential. The next step is to connect such credentials to degree pathways.

The New Jersey Pathways Leading Apprentices to a College Education, or NJ PLACE, seeks to integrate apprenticeship courses offered by noncollegiate providers with general education offered by community colleges to yield an applied associate of science degree in technical studies that is transferable to baccalaureate institutions. It is the result of a statewide collaboration among all the major workforce-development stakeholders: New Jersey's 19 community colleges, employer associations, organized labor, the State Employment and Training Commission, and a number of registered apprenticeship programs.

The experience of NJ PLACE reveals one of the major obstacles to creating a degree pathway for noncredit job training. The most widely accepted source of assessing the credit equivalence of noncredit courses—the American Council on Education's College Credit Recommendation Service—is cost prohibitive for many providers. In New Jersey discussions are underway about the need to establish a state-based assessment service.

**Defining and assessing learning outcomes at community colleges.** Community colleges are the key institutions for serving working learners, as noted earlier. Through their vocational and technical programs, community colleges have always had close partnerships with employers in their service areas and have the capacity to adapt quickly to changes in the local labor market.

Many community colleges have articulation agreements that award credits for employer or joint union-employer training programs as part of an AAS degree. The challenge for community colleges is to better integrate their general education and technical missions. The following example illustrates both the possibilities and the challenges inherent in achieving such integration.

The Learning College project, initiated by the League for Innovation in the Community College in 2000 with 12 “vanguard” institutions, now involves a group of 72 institutions around the country committed to creating innovative instructional forms focused on learning outcomes and interdisciplinary learning. In particular, these colleges have created faculty, staff, and student communities aimed at transforming both general and occupational education by moving instruction from “learner-centered”—which most community colleges have always been—to “learning-centered,” with a focus on the *outcomes* of the educational process.

The most significant of the many challenges these colleges face is also the most essential for connecting the dots: defining, assessing, and documenting student outcomes. A recent evaluation of the Learning College project observes that most colleges in the project had difficulty applying the process to all college courses, programs, and degrees despite considerable experience with outcome-based learning. They particularly struggled with “general education courses and critical across-the-curriculum skills (e.g. writing, critical thinking, problem-solving and the like) remain a considerable challenge.”<sup>29</sup>

The evaluation found few of the colleges were satisfied with their methods for assessing the acquisition of skills and knowledge identified in the outcome statements. And none had created satisfactory models to document and transcript the learning outcomes.

The takeaway here is that developing a common approach to the definition, delivery, and assessment of required learning outcomes at the course, program, and degree levels is essential both for integrating occupational and general education and for reducing the inefficiencies and inequities in the transfer of credits discussed earlier.

**Creating a “practical liberal education” at baccalaureate institutions.** One promising example of integrating liberal arts and vocational instruction at institutions that grant bachelor’s degrees is the Liberal Education and America’s Promise initiative, or LEAP, where more than 150 members of the Association of American Colleges and Universities are striving to integrate the elements of a liberal education across all collegiate disciplines, including career and professional disciplines).<sup>30</sup>

One of LEAP's primary goals is to "challenge the widespread belief that students must choose either a practical or a liberal education by building widespread support for educational changes that already are producing a new synthesis of practical and liberal education."<sup>31</sup>

LEAP member colleges identify essential learning outcomes in four categories: knowledge of human cultures and the physical and natural world; intellectual and practical skills; personal and social responsibility; and integrative learning. LEAP colleges work with both employers and public schools to help college and college-bound students "understand, prepare for and achieve a challenging, public-spirited and practical liberal education."<sup>32</sup>

### *Recommendations for state and federal policy*

The examples above make clear that experimentation with integrating liberal and occupational-professional education is occurring along the continuum of postsecondary education providers. State and federal policy initiatives could increase both the pace and scale of these changes by supporting the following types of initiatives:

Support for faculty and staff to develop a common approach to the definition, delivery, and assessment of required learning outcomes at the course, program, and degree levels as well as to develop commonly accepted measures of the college equivalency of work-based learning.

Grants to create partnerships that align integrated curricula across postsecondary education providers. Colleges, universities, training providers, employers, and unions must be able to articulate areas of knowledge, skills, and attitudes that are being developed across their programs so students and instructors can define an educational pathway. The federal Departments of Education and Labor could invest in these types of partnerships through regional skills initiatives that encourage standards and curriculum development in high-demand occupations.

### *Build new connections between various types of postsecondary education providers*

Working learners are mobile learners. They need to be able to earn college degrees by transferring credits among education providers. As outlined in the previous section, this cannot be accomplished on any large scale without a better alignment of standards among institutions. Since the majority of transfers occur within states, the most effective policy interventions would encourage states to target their policy and resource leverage toward helping working learners obtain recognized and portable postsecondary credentials.<sup>33</sup>

The following recommendations need to be adopted to help working learners be successful.

**Align transfer policies for lower-division general education courses among all colleges and universities receiving state operating or capital assistance.** Some states already have such policies in place while others, such as California, do not.<sup>34</sup> New Jersey's statewide transfer policy applies to AA/AS degrees but the legislation does not cover students who complete the general education credits equivalent to the AA degree at four-year schools that do not offer the associate's degree.

After aligning outcomes and standards for lower-division courses, the two- and four-year schools will also need to align assessments so transfer students will be prepared to perform as well as students who enter four-year institutions directly.

**Create a state-based "assessment center."** To capture the credits and/or learning that would help working learners earn formal credentials, a system is needed that coordinates the assessment of credits and provides information and guidance to all students and potential students regardless of their current status. The optimal operational model for such a center would make use of physical locations and web-based tools to serve students statewide.

Specific functions of such an assessment center might include:

- **Assessment of individuals' prior learning, or PLA.** Research indicates that students who can apply PLA credit in the most flexible way possible—for general education credits, major requirements, waiving course prerequisites, and obtaining advanced standing—have much higher graduation rates than students who lack this flexibility.<sup>35</sup> PLAs should be treated as transfer credits rather than as "recommendations" for which many colleges require students to pay tuition in order to receive the credit.
- **Assessment of credit equivalence of noncredit courses.** Assessing noncredit courses for college credit equivalence is far more strategic and cost effective than assessing individuals' prior learning. States should follow Ohio's lead and establish clear guidelines for converting noncredit learning to credit that counts toward associate's or bachelor's degrees.<sup>36</sup> State-based entities like the National Program on Non-collegiate Sponsored Instruction, based at the State University of New York, have the ability to assess training programs offered by noncollegiate postsecondary providers. States should also work together to ensure these credits are portable across state lines.
- **Providing guidance to students.** Working learners need guidance on the pathways they may have toward a credential or a degree. Currently, such guidance is primarily available from advisors at the college or university where students are enrolled or where they are considering enrolling. These advisors may not have complete information or may be focused on competitive recruitment and therefore may not be willing to provide full information. A state-based center can inform students about articulation agreements that easily enable students to transfer one set of college

credits to another institution, and this center should also provide guidance on other options such as degree-completion institutions, competency-based institutions, and credit-transfer services.<sup>37</sup>

- **Expand articulation agreements.** The United States needs a much more universal system of articulation agreements—which align coursework and credits across colleges—to better serve student needs while ensuring institutional diversity. Currently, the existence of articulation between institutions depends on the individual college or university and is occasionally facilitated by a systemwide agreement. States should encourage the development of agreements systemwide between noncollegiate providers and two- and four-year public institutions as well as between four-year public institutions. These agreements should also extend to private institutions wherever possible.

### Promote an “earn while you learn” system

A very large group of U.S. workers needs—and wants—to combine work, family responsibilities, and lifelong learning. This poses a challenge to the design of the postsecondary education system at all levels.

Those who do not start college right after high school and attend full time while depending on their parents for income and support are considered “nontraditional” students by colleges and universities and do not fit into the traditional structure of college learning. Workers who have lost their jobs are considered “dislocated workers” in need of quick intervention by workforce-training programs to get them new jobs. In combination, these two groups comprise around half of all college students. Serving these working learners requires a postsecondary education system that allows them to earn a living while continuing their education.

Community colleges are the ideal place to foster an “earn while you learn” system because data show that many working learners will either begin their journey in community college, gain a postsecondary credential there, or pass through on their way to more education.<sup>38</sup> For the most part, however, community colleges are still designed primarily to serve the needs of traditional students.

In addition to many of the changes already discussed, earning while learning can be facilitated by such innovative practices as tightly defined course sequences, compressed class formats, consistent class schedules, competency-based educational advancement, coordinated support services between classes and work, and whole program registration where students register once rather than every semester.

Research indicates that these innovations at the institutional level make it more likely that a working learner will be successful at getting a degree or credential.<sup>39</sup> They modify

community college practices in ways that support the learning style and work and life responsibilities of wage earners. Ivy Tech Community College of Indiana is pioneering these earn-while-you-learn innovations through its College for Working Adults, or CWA, which enables working learners to obtain an associate's degree in less than 24 months while working full time.<sup>40</sup>

Federal policymakers can support these types of innovations with targeted investments through competitive grant processes. President Barack Obama's 2011 budget includes a \$300 million Workforce Innovation Fund that redirects current budget dollars from the Departments of Education and Labor into a co-managed, competitive grant program to support and test new ways to deliver workforce-training programs that yield post-secondary credentials through earn-while-you-learn models. The recently announced \$2 billion request for proposals for Community College and Career Training Grants is also a vehicle through which to encourage these innovations.

The Center for American Progress recommends that 50 percent of these funds be directed toward community college partnerships with businesses, unions, and nonprofit organizations that use apprenticeship and career-pathways programs linked to regional economic growth initiatives to help working learners complete associate's degrees. Such an investment could be significantly expanded by adding lifelong learning accounts to Section 529 of the Internal Revenue Code and allowing contributions from individuals, employers, and the state.

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## Conclusion

Public, business, education, and labor leaders must work together to make sure more Americans can complete postsecondary credentials and be ready to compete in the innovation economy. Connecting the dots between academic and occupational curricula within postsecondary institutions and making better connections among the various institutions will help build a national workforce-development strategy that will ensure the innovation economy not only produces broadly shared prosperity but also restores to American workers the opportunity to develop their capacity for learning and creativity.

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## Endnotes

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