



TRANSFORMING U.S. WORKFORCE DEVELOPMENT POLICIES FOR THE 21st CENTURY

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Transforming the U.S. Workforce Development System

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Learn and Earn

Connecting Education to Careers in the 21st Century

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By 2020, 65 percent of job openings will require at least some postsecondary education and training (Carnevale and Smith 2013). However, not all higher education is created equal: the costs, risks, and returns on postsecondary education and training programs are highly variable. For today's high school graduates, and an increasing share of middle-aged adults, decisions about whether to enroll in college, which institution to attend, and which program of study to pursue will have critical economic consequences.

As things now stand, however, they are making those decisions in an information vacuum. The U.S. postsecondary education system is a kaleidoscope of institutions and interests, and educational policies vary from state to state. Most importantly, there is no unified data system that connects postsecondary fields of study and degrees with actual labor market demands. Such a system would enable students to better understand how their training is likely to fit into the real-world job market, and it would also motivate institutions to be more accountable for shaping their programs to fit their students' needs.

The good news is that the data and technology needed to create such a system already exist, and the costs of integrating them into a unified whole are relatively low. The federal government is the logical place to house the exchange: given the frequency with which people, especially new college graduates, move across state lines, it would be difficult for any given state to track its labor market outcomes. Only one major barrier remains—a 2008 federal ban on the creation of a student unit

record system. Currently, the federal government collects data at the institution level, rather than the student level, which prevents users of the data from answering questions about what students learned while enrolled, as well as what happens to them in the labor market after they graduate, and how outcomes vary for students with different demographic characteristics. Proponents of the ban, largely from the higher education sector, cite privacy concerns, but colleges and universities are already legally required to send student-level data to the Department of Defense and Internal Revenue Service, and already voluntarily send data on more than 140 million students to the private National Student Clearinghouse (McCann and Laitinen 2014).

The Great Recession left millions of college graduates looking for jobs, and since then the media, students, and parents have devoted increasing attention to the value proposition of postsecondary education. The need for more transparency in the higher education sector has become apparent, and politicians have stepped in. In 2013, Senators Ron Wyden (D-OR) and Marco Rubio (R-FL) introduced the Student Right to Know Before You Go Act, which would repeal the federal ban on a student unit record system and require postsecondary institutions to report labor market outcomes of their graduates. McCann and Laitinen (2014) detail the political barriers obstructing the repeal of the ban, but there is broad bipartisan support.

But connecting the dots in the data we already have is only the beginning. As the time it takes for young people to gain traction in the labor market has lengthened, we need to find ways to simplify and accelerate the transition from education to careers. This includes strengthening career education, tying the funding of postsecondary education and training programs with cost and labor market demand, strengthening connections among institutions with education and employment missions, and scaling up competency-based education initiatives. This chapter will outline the new realities of the U.S. labor market and explore ways in which a learning-labor exchange could help students and institutions adapt to those new realities.

WHAT WE KNOW ABOUT THE LINK BETWEEN EDUCATION AND THE LABOR MARKET

- *On average, more education pays.* Over a lifetime, college graduates earn \$2.3 million on average, compared to \$1.3 million for high school graduates (Carnevale, Rose, and Cheah 2011). This earnings gap appears to be widening: the wage premium workers receive from a college education—the difference in earnings between high school and college graduates—increased from 40 percent in 1970 to 84 percent in 2010.
- *Majors and fields of study have an even larger influence on earnings than degree level.* Within and across degree levels, people have vastly different earnings:
 - College graduates who majored in the highest-paying fields earn up to three times as much as those who majored in the lowest-paying fields (Carnevale, Strohl, and Melton 2011), making the difference in earnings between the most- and least-paid college graduate greater than the difference between the average college and high school graduates.
 - A bachelor's degree in petroleum engineering translates into a median annual wage of \$120,000, compared with \$29,000 a year for a bachelor's degree in counseling psychology. And while degrees from prestigious institutions do confer advantages, a teacher with a bachelor's degree from Harvard still typically makes less than an engineer with an associate's degree from a community college.
 - The choice of majors also affects college graduates' chances of landing a job in the first place. The unemployment rate of recent college graduates for information systems, for instance, was nearly 14.7 percent, compared to 4.8 percent for graduates who majored in nursing (Carnevale and Cheah 2013).
 - The importance of field of study is so powerful that workers with less education in one field frequently earn higher wages than those with more education in another. Overall, 30 percent of workers with an associate's degree earn more than the median

worker with a bachelor's degree (Carnevale, Rose, and Cheah 2011), and one-quarter of male certificate holders earn more than the median male bachelor's degree holder (Carnevale, Rose, and Hanson 2012).

- *Occupations also play a strong role in determining wage and employment outcomes.* Workers with less education can out-earn those with more education if they gain access to high-paying occupations. For example, an engineering technician with an associate's degree typically earns more than a high school guidance counselor with a master's degree.
- *Within occupations, degree level still matters in determining earnings.* Among engineers, for example, an associate's degree holder earns \$65,000 annually, a bachelor's degree holder earns \$85,000, and a graduate degree holder earns \$103,000.¹

THE SHORTAGE OF SKILLED WORKERS AND THE NEED FOR A MORE EFFICIENT EDUCATION AND TRAINING SYSTEM

Despite the high average economic returns to higher education, the supply of skilled workers in the United States has not kept pace with employer demand (Carnevale and Rose 2011). Since 1983, the demand for college-educated workers has grown by an average rate of 3 percent each year, while the supply has only grown by 2 percent. As the demand for postsecondary education and training has increased, high school graduates have been left behind. Between 1970 and 2010, high school-educated men's wages declined by 41 percent (Jacobs 2013a), as young men have lost access to middle-wage, blue-collar jobs in the manufacturing industry and have been forced to shift into lower-paying food, personal service, sales, and office support occupations (Carnevale, Hanson, and Gulish 2013). In short, the failure of the U.S. human capital development system to adequately develop in-demand skills in its workforce has created a paradox: a large number of highly skilled job vacancies at a time when millions of Americans are looking for work (Jacobs 2013b).

Among high school students, college-age young adults, and older adults, the United States lags substantially behind its peers in literacy, numeracy, and problem solving in technology-rich environments (OECD 2013). U.S. teenagers and high school graduates have weaker basic skills than their international peers, especially in math, where 25 percent score below the baseline level, compared to 10 percent in Finland and Korea (Kuczera and Field 2013). What's more, they don't seem to be catching up: between 1994 and 2004, there was no growth in U.S. teenagers' literacy skills (Desjardins and Warnke 2012). Baby boomers rank average in numeracy skills relative to their international peers, and American teenagers and college-age adults rank dead last in numeracy (OECD 2013).

In terms of postsecondary attainment, the United States is actually losing ground to its international peers. The baby boom generation ranked first in bachelor's degree attainment and third in postsecondary attainment internationally, but today's generation of young adults ranks 12th in bachelor's degree attainment and 11th in postsecondary attainment overall.² The largest room for growth is in career-focused associate's degree programs, where the United States ranks 17th internationally, at 10 percent. By comparison, 25 percent of young adults in Canada earn a career-focused associate's degree.

Under current projections, the United States will need 11 million more workers with postsecondary credentials between 2014 and 2020 to satisfy the labor market's demand for college-educated workers.³ The recession of 2007–2009 led to the decline of low-skill construction and manufacturing jobs, replaced by jobs in health care, biotech, nanotech, clean energy, and advanced manufacturing jobs, most of which require at least an associate's degree (Soares and Steigleder 2012). This increased the level of skills mismatch in the labor market, as former construction and manufacturing workers scrambled to retrain and move into different careers (Şahin et al. 2012).

Closing the gap between the supply and demand for skilled workers will pay off in higher wages for workers (due to higher skill levels and productivity). Higher-paid workers will mean more tax revenue for federal, state, and local governments and less dependency on government programs; more productive workers will boost employer profits and lead to higher economic growth, which benefits everybody. Education

contributed one-third of the U.S. economy's productivity gains between 1950 and 2000 (Carnevale and Rose 2011). Adding an extra year of schooling for all Americans by 2025 would increase gross domestic product (GDP) growth by between \$500 billion and \$1 trillion, providing an additional \$150 billion in state, local, and federal taxes.⁴

How can we close the gap between the lagging supply of skilled workers and the growing demand? High school graduates enroll in postsecondary programs at a high rate (70 percent); the problem is that not enough of them actually finish. There are now 75 million Americans in their prime working years (aged 25–54) who do not have a postsecondary credential. Nearly 37 million have some college credit, and roughly 15 million have at least two years of college credit. Increasing the production of the U.S. education and training system by 11 million workers with postsecondary credentials is a feasible task, but it will require increasing college completion rates as well as developing high-quality adult education and workforce development programs to educate and retrain prime-age workers forced to change careers due to changing labor market dynamics, as workers shift from blue-collar jobs to high-skill service jobs.

The United States comprises three primary sectors charged with education and training missions: 1) K–12 schools, 2) postsecondary education and training institutions, and 3) employers. Altogether, they account for roughly \$1.6 trillion of spending on human capital development: \$610 billion on K–12 general education, \$483 billion on postsecondary education, and \$528 billion on employer-based training (\$164 billion on formal training and \$364 billion on informal, on-the-job training).⁵

A lot of those dollars are spent ineffectively. Workforce development programs in this nation, particularly services funded under the Workforce Investment Act (WIA), are too focused on getting unemployed and displaced workers into jobs instead of engaging them in a long-term skill development strategy, though the evidence demonstrates that this is a less effective strategy (Jacobs 2013a). Unlike its international peers, the United States does not invest in active labor market policies, such as job training. We rank 28th—second to last—in federal expenditures on workforce training among developed countries, spending only 0.1 percent of our GDP compared to the 0.7 percent average, and 1 percent in Germany and Denmark (Jacobs 2013a). The U.S.

workforce development system should operate as part of an ongoing education and training system for workers, not merely as a massive job placement service.

In other developed countries, workforce development institutions largely operate separately from institutions primarily focused on general, academic education. In the United States, however, this is not the case—postsecondary programs with academic education and workforce missions are located at the same institutions. In fact, the majority of postsecondary programs of study are career focused: 57 percent of postsecondary degrees and awards are in fields primarily focused on preparing students and trainees for the labor market.⁶

However, improving education and training will require increased public spending, which makes it politically unfeasible for at least the near future. More to the point, what we spend now is spent ineffectively. Ours is one of the least productive education and training systems among developed nations, as measured by the postsecondary attainment rate relative to spending on education and training as a share of GDP (Carnevale, Hanson, and Gulish 2013). Put more simply, we rank 11th in postsecondary attainment despite spending more than anybody else. Most of that spending has been at the federal level: between 2000 and 2010, total federal aid to postsecondary education more than doubled, to \$169 billion. At the same time, state expenditures per pupil at postsecondary institutions declined because of budget constraints and growing enrollment reflecting increased demand for postsecondary education and training (U.S. Department of Education 2012).

Proposals to reform education and training in the United States should focus, then, on enhancing the productivity and efficiency of its education and training system. Technological innovations have shown some promise to improve pedagogy and learning, but the best way to enhance productivity is to align education and training programs with the competencies the labor market demands. As it is, many students are making poor choices about what to study, and many postsecondary education and training institutions are funneling students into postsecondary programs of study that do not lead to gainful employment. Jacobson and LaLonde (2013) find, for example, that only one-quarter of Florida community college students complete a degree or certificate with a moderate or high return. Carnevale, Rose, and Hanson (2012) find that half of postsecondary certificates do not meet that standard

(even though certificates do pay off, on average).⁷ Additionally, among women who either dropped out of college before earning a credential or earned an associate's degree, 52 percent work in jobs that only require a high school diploma.⁸

The public should prioritize funding education and training programs that have labor market value. Promoting our citizens' autonomy as individuals—their ability to access a broad array of cultural goods and fully participate in a democracy—is an important goal, but it cannot be met until individuals can meet their basic needs. The inescapable reality is that work is central in American society. Those unequipped with the knowledge and skills necessary to get, and keep, good jobs are denied full social inclusion and tend to drop out of the mainstream culture, polity, and economy. In the worst cases, they are drawn into alternative cultures, political movements, and economic activities that pose a threat to mainstream American life.

Moreover, if public money is not spent funding education and training programs that promote access to high-paying careers, it is a missed opportunity to move low-income Americans and other disadvantaged social groups into the middle class. It is also a missed opportunity to increase the skills and productivity of the workforce, which would lead to broader growth and economic prosperity for all Americans.

FOUR IDEAS FOR REFORMING EDUCATION AND TRAINING IN THE TWENTY-FIRST CENTURY

Promote Transparency in the Outcomes of Education and Training Programs by Building a Learning-Labor Exchange

The most cost-effective way to ensure education and training programs are effectively preparing students and trainees for the labor market is to ensure that students, educators, practitioners, and policymakers are making informed decisions that are in line with their goals. Because the costs, risks, and returns to postsecondary programs of study are so highly variable, we need more quality, coherence, and transparency in cost and outcomes.

The current major source of data about postsecondary institutions, the Integrated Postsecondary Education Data System (IPEDS), is plagued with problems. It was designed for a postsecondary education system that mostly comprised 18-year-old high school graduates who enrolled full time at a four-year college or university and graduated from the same institution within three to five years. This means that IPEDS does not include data on half of students enrolled at two-year colleges, outcomes for students who take longer than the typical completion time, the academic preparedness of students, or students who have not graduated but are still enrolled. The federal government cannot even analyze the effectiveness of Pell Grants, the largest federal investment in higher education.⁹

However, addressing the problems with IPEDS still leaves another major problem with the current mechanisms for evaluating postsecondary programs of study: the lack of transparency about the labor market outcomes of students and trainees who enroll in and complete postsecondary education and training programs. Building a learning-labor exchange will allow us to assess the extent to which particular education and training programs result in tangible employment outcomes. Such an exchange could be used to track outcomes from early childhood education through high school, postsecondary education, and the workforce. Already, we have earnings data in state unemployment insurance (UI) databases that can be linked to transcript record data using individuals' Social Security numbers. The Department of Labor's Wage Record Interchange System facilitates the sharing of wage data across states. In addition, there is the Department of Education's State Longitudinal Data Systems (SLDS) grant program, which funds state-based programs that integrate education data in P-20 data warehouses that link student records between pre-K and college into a single system. Of the 25 states that have received grants under the SLDS program so far, Florida, Utah, and Texas have developed advanced data systems that in turn link this education data to workforce and public assistance data (Eyster, Anderson, and Durham 2013). For example, California's community college system has used these data to develop a "salary surfer" Web tool, which allows students and career counselors to determine their likely salaries and probability of finding a job for given occupations and industries.¹⁰ Pennsylvania has developed a similar tool called

“Career Coach.” However, these tools have not been established for a long enough time frame for researchers to assess their effectiveness.

Building a learning and labor exchange would require minimal up-front costs, but those costs would generate long-run savings because of the reduced regulatory burden on education and training institutions and the decreased need for the assorted surveys and disconnected data they use now. Vollman and Carnevale (2009) estimate that the start-up costs would be roughly \$60 million for the most comprehensive learning and labor exchange, along with \$14 million in ongoing costs, a small fraction of a percent of the \$295 billion of public spending on postsecondary education and training each year (Snyder and Dillow 2013).

A learning-labor exchange would also minimize the need for aggressive federal oversight or costly state regulations, such as the roughly 850,000 hours that institutions spend annually to comply with the reporting requirements for IPEDS (Laitinen 2014). However, the information system that would most effectively increase the efficiency of our education and training system is a student unit record system, which would collect data directly from and about students, as opposed to aggregated data from institutions; this practice is currently prohibited by law.¹¹ Congress should repeal this prohibition in the pending reauthorization of the Higher Education Act. A student unit record system would provide unique student identifiers through Social Security numbers that could be connected to from states’ unemployment insurance records, which contain data on wages, occupations, and employers. The two information “feedstocks”—transcript records and wage records—needed to build a learning and labor exchange have already been developed, they just need to be connected. Repealing the student unit record ban, along with passage of the Student Right to Know Before You Go Act, which has received bipartisan support, would create the foundation for a learning-labor exchange that would fundamentally restructure our education and training system for the twenty-first century.

Another approach would be to create online learning exchanges, in which job-search engines would match job openings and career pathways to specific courses being offered by traditional postsecondary institutions and online degree programs. These learning exchanges would promote healthy market competition among postsecondary institutions, which in turn would minimize the need for aggressive federal oversight or expensive state regulation. In other words, greater transpar-

ency would lead to more informed consumers and policymakers, which would encourage consumers to vote with their feet and institutions to focus on the labor market value of their programs instead of prestige.

The Department of Education is the ideal institution to administer the learning-labor exchange. First, centralizing the data would create economies of scale and cost efficiencies to replace our current system, in which each state runs its own exchange. It would also allow students, families, and policymakers to compare the efficacy of programs of study and institutions across various states. And it is a natural role for the federal government to play, given its substantial investments in postsecondary institutions.

But a learning-labor exchange alone will not ensure success at promoting the alignment between education and careers. The next step is to ensure that the high-quality information gets into the hands of those it would benefit, via user-friendly tools and information campaigns. Report cards, similar to the Department of Education's "College Scorecard," should be published at the program level, and should include such information as expected earnings, the job placement rate, the probability of completion based on students' characteristics (academic background, work experience, interests, financial resources, and family constraints), program cost, loan default rate, and median loan amount.¹² Because career counselors within institutions may not provide objective guidance about the effectiveness of programs of study at their institutions (Kuczera and Field 2013), we need public information tools and initiatives.

Develop Outcome Standards for Education and Training Programs to Ensure the Public Is Getting the Most Bang for Its Buck

Transparency itself won't be enough to move individuals and institutions toward programs with demonstrable labor market value; there should also be outcome standards in order to receive public funds. Given the size of its investment, the public has not done enough to hold institutions accountable for how public dollars are spent and whether education and training programs are effective. This is due to the public's limited access to information, as well as to the fact that workforce development programs and postsecondary programs have a variety of definitions for what constitutes successful program outcomes.

Taken together, this lack of transparency and outcome standards means that ineffective public and private training programs continue to attract trainees and public funds that could be used more effectively. The Obama administration's proposed Gainful Employment regulations provide a framework for establishing a minimum outcome standard for the receipt of public funds. The regulations are designed to evaluate the effectiveness of certificate programs at Title IV institutions and all education and training programs at for-profit colleges (except liberal arts bachelor's degree programs). In total, the regulations will apply to more than 55,000 programs at 5,600 postsecondary institutions (U.S. Department of Education 2011).

Employability is an appropriate metric for all postsecondary programs; students ought to know their probability of finding a job and comparative earnings level after completing a postsecondary program of study. At the same time, gainful employment regulations should only be used to regulate postsecondary programs of study that promise employment and earnings as a direct effect. Programs focused on academic education, by contrast, can use weighted metrics that also include assessments of learning.¹³

The core metrics that could be used as outcome standards are earnings, job placement in field, student loan debt default rate, and debt-to-earnings ratio. These metrics are better alternatives than completion, cost, and learning metrics alone. For example, completion itself is a poor indicator of success. If an enrollee completes a program and can't find a job, or ends up working in a job with lower wages than when she started, why should completion be viewed as a success? Why should a trainee who acquires valuable skills and drops out of a training program to work in a high-wage job be counted as a failure? Moreover, maximizing completion rates can be counterproductive if they simply encourage institutions to shift enrollments to less-challenging programs or to serve the most-advantaged students. Nursing programs are more difficult to complete than cosmetology programs, but some completions are more valuable than others; nursing graduates are more employable and more highly paid than cosmetology graduates. Gainful employment metrics can also improve cost metrics by evaluating program costs relative to earnings returns. Nursing programs also cost more than cosmetology programs, but the earnings returns are much higher for nursing.

Similarly, postsecondary education and training accreditors should utilize these metrics in their accreditation standards. At some accrediting bodies, these initiatives are already under way. For example, the Accrediting Council for Independent Colleges and Schools, a major national career-related education accrediting body, requires accredited education and training institutions to report graduates' job placement rate in their field of study. Institutions must maintain a job placement rate of 60 percent or higher in order to remain accredited. While the majority of postsecondary education and training institutions are subject to academically focused accreditation standards, they should be updated to align with twenty-first century demands by incorporating labor market metrics.

Simplify and Accelerate the Transition between Education and Careers

Compared to other developed countries, the transition from high school to postsecondary education and training in the United States is lengthy and complex. For example, high school graduates can spend 10 years or more navigating the postsecondary system before entering the labor market, while apprenticeships in European countries generally enroll students in their late teens, allowing them to earn while learning and achieve competencies in their target careers by their early twenties. The United States is moving in the opposite direction: here, the age at which young adults gain traction in the labor market actually increased from 26 in 1980 to 30 in 2012 (Carnevale, Hanson, and Gulish 2013). There are two major logjams: between high school and postsecondary education, and between postsecondary education and career.

One reason for the first difficulty is that high school curricula are largely focused on purely abstract, academic content, so students are required to enroll in a postsecondary program of study in order to gain exposure to career preparation and guidance.¹⁴ In part because students are not exposed to career options in high school, they do not make strategic decisions about their careers until much later in life. In some cases, the first career guidance young adults encounter is at One-Stop Career Centers (financed by the Department of Labor through WIA) after they become unemployed.

Strengthening career and technical education

To accelerate the transition between high school and postsecondary education, school districts, and state and local governments should develop and strengthen career and technical education programs. Career and technical education represents an opportunity to build an academically rigorous middle pathway that strikes a balance between abstract academic content and learning by doing. Research has already shown that this kind of career and technical education engages students, improves their math and reading skills (Stone et al. 2006), and prevents young men in particular from dropping out of high school. Countries that offer strong career and technical education pathways have more success at transitioning young people into the labor market than those with a uniform pathway, as in the United States.

Such high school career and technical education programs should bridge either directly into the labor market or into a career-focused postsecondary program of study, as well as allow for lifelong learning and upward career and educational mobility. To ensure the curriculum will be rigorous, matched to labor market demand, and confer a credential with labor market value, curriculum developers should use industry-recognized standards to plan courses of study. To ensure that these courses are relevant to specific labor market demands, they should cooperate with local employers, Workforce Investment Boards, community colleges, and regional economic developers. At the same time, career and technical education curricula must maintain their academic rigor. The demise of vocational education in the 1970s was due to its lack of rigor, which effectively shut out students from pursuing further education.

These programs must be state-led, since the main federal program that supports career and technical education, the Perkins Act, provides only roughly \$1 billion of the \$20 billion spent nationally on high school career and technical education programs.¹⁵ Federal funding can incentivize states to spend money effectively, but for the most part, states must scale up these programs themselves. Texas, for example, has especially scaled up career and technical education programs and enrolled more than 1 million students with greater than 90 percent of students meeting postsecondary performance standards for technical skills (Association for Career and Technical Education 2014).

High schools should also partner with local employers to expose students to a professional work environment by providing students with work-based learning opportunities such as internships, co-ops, and apprenticeships. Work-based learning also encourages students to think strategically about career decisions and, in many cases, earn wages to pay for further education and training along their chosen career ladders.

Alongside career and technical education, dual enrollment initiatives can accelerate young adults' entrance into the labor market. There is broad support for these initiatives; the problem lies in how the funding is allocated. The Office of Career, Technical, and Adult Education (formerly the Office of Vocational and Adult Education) provided a framework for articulation agreements for dual enrollment initiatives through revisions to the Perkins Act. The revisions would "require all consortia applying for state subgrants to establish or adopt secondary-postsecondary articulation agreements for each funded career and technical education program. State leaders would be expected to create statewide articulation agreements and encouraged to support policies that maximize the award of college credit to students who complete registered apprenticeship programs and industry-based training" (U.S. Department of Education 2012). Not only will dual enrollment accelerate the transition of young adults into careers, it will also give them access to a wider variety of courses than high schools alone can provide.

Creating stronger links between education and training institutions

The second logjam is the transition between postsecondary education and career. Unlike high school curricula, many postsecondary education and training programs focus on career preparation but remain plagued by the lack of alignment between their programs and the demands of the labor market.

Promoting transparency and developing outcome standards will promote this alignment, but reforms within institutions and at the state level are also needed to address problems at the micro level. There are administrative roadblocks, too—namely, funding mechanisms and decentralization, which create silos of disconnected institutions and programs that have similar goals but that cannot leverage the efficiencies that result from specialization and economies of scale. The critical

next steps are to break down the barriers between education, job training, workforce development, and regional economic development.

Community colleges. Community colleges are the critical link at the center of the U.S. education and training system. Today, there is no single place where individuals can coordinate all their career development activities, locate all the education and training resources available to them, and find real-time information about local, regional, and national labor markets. Similarly, public support programs, such as Unemployment Insurance, do not provide beneficiaries with immediate information or resources about job search or retraining. Community colleges are the ideal institutions to integrate these services and resources, as most Americans are geographically proximate to a community college, and community colleges' missions are more focused on workforce development than other postsecondary institutions.¹⁶

The best community colleges have formed a web of relationships with high schools, four-year colleges and universities, regional employers, local Workforce Investment Boards, One-Stop Career Centers, and regional economic planners (Holzer 2011). The Pathways in Technology Early College High School has partnered with IBM and City University of New York to create a smooth transition between high school and high-demand jobs in information technology occupations. In an era of rapidly growing costs of postsecondary education and training, community colleges have effectively controlled costs. The average tuition for a student at a community college in 2013–2014 was \$3,300, compared to \$8,900 at public four-year colleges and \$30,100 at four-year nonprofit colleges (College Board 2013).¹⁷ Community colleges are the only postsecondary institutions that actually lowered their cost per full-time equivalent student between 1999 and 2009 (Desrochers and Wellman 2011).¹⁸ They are, in short, ideally positioned to play a central role in order for the United States to tackle its projected supply shortfall of skilled workers.

However, community colleges currently face a supply shortfall of their own: money. They are unable to satisfy the demand for programs of study with high labor market returns due to the structure of funding mechanisms for postsecondary education and training, as well as recent budget constraints that have not kept pace with their growing enrollment.

Unbundling postsecondary education funding. In some cases, students do not enroll in programs of study with high labor market demand because they lack the academic skills necessary to succeed. Nearly 80 percent of enrollees in adult basic education and adult secondary education programs perform below the 9th grade level, and 40 percent perform below the 6th grade level (Rutschow and Crary-Ross 2014). But even after controlling for academic ability, students enroll in high-demand programs of study at relatively low rates (Holzer and Nightengale 2009).¹⁹ This gap arises because in the current system, community colleges are funded based on enrollment, not on program costs or the labor market value of the program offered. This discourages them from expanding high-cost programs that have high labor market value, such as nursing and allied health programs; the long wait lists for admission into high-cost, in-demand programs tends to divert students into academic or liberal arts programs that can be provided at a relatively low cost. The result has been a shortage of career-oriented programs of study that prepare students for in-demand careers. In a market that operates efficiently, supply expands to meet demand. Enrollment-based funding prevents this from happening.

The solution to this supply problem is to unbundle and repackage the pricing mechanisms in postsecondary education. Institutions should charge higher tuition for programs of study that cost more to provide. This will give institutions an incentive to expand costly programs that have substantial labor market value. The impact of that higher tuition on students would be mitigated or offset completely in two ways: by financial incentives for students who complete their studies, and by replacing the current system of funding on the basis of enrollment alone with funding mechanisms that offer financial incentives to institutions that can show a high completion rate in courses with high labor market value.

Restructuring funding, though, will not address the problems posed by decentralization. A uniquely American phenomenon, decentralization has many benefits. By providing institutions with flexibility and autonomy, it encourages creativity and innovation. Because it brings a diverse mix of students into institutions via a variety of paths, it fosters an intellectually rich and creative environment. At the same time, decentralization creates confusion: because this diverse mix of young adults are not given clear guidance about what comes next, many get

lost, change their minds, or find the educational system difficult to navigate. The result is increased costs and a longer route between school and career. Because the students who need the most help navigating this complex path frequently come from disadvantaged backgrounds, this confusion also exacerbates racial and class inequalities.

However, the solution is not necessarily to consolidate programs or institutions. There are 47 federal programs with workforce development elements, administered by nine federal agencies (Government Accountability Office 2011). That sounds inefficient, but many of those programs have specialized knowledge developed to serve specific groups. Consolidation might achieve minor administrative efficiencies at the cost of overall *effectiveness*.

Enhancing workforce development programs by leveraging partnerships. The most cost-effective form of workforce development training is high-intensity programs focused on developing skills and competencies, as opposed to short-term programs focused on job placement and labor force attachment (Jacobs 2013b). The problem is that workforce development programs lack the money to do this. Public spending on active labor market policies has been declining since the 1980s (Jacobs 2013a). In 1980, 34 percent of human capital investments by the federal government was spent on job training and employment services; by 2010, it was 9 percent. WIA, which provides job training for unemployed workers through the Title I Adults and Dislocated Workers Program, is currently funded at \$3–\$4 billion. If it were funded at the same level as the Comprehensive Employment and Training Act in 1979, it would receive \$25–\$30 billion.²⁰ Moreover, WIA, which was passed with broad bipartisan support, has not been reauthorized in the 10 years since it was first up for reauthorization in 2003.²¹

Given the lack of resources or political will to scale up workforce development programs to effectively target skill building, the next best alternative is to let these programs focus on what they can do well, while building stronger connections to other institutions in the education and training system, such as high schools, community colleges, and regional economic development agencies. The outcomes of every workforce development program, and every postsecondary program of study, should be evaluated by using common labor market metrics in

the learning-labor exchange and by developing an outcome standard on which to base funding.

“Career pathways” is a model that connects the decentralized patchwork of education and training programs and institutions into a straightforward track toward in-demand careers. Washington State, California, Illinois, Minnesota, and Wisconsin have all piloted career pathways programs, as have national and regional initiatives led by the Joyce Foundation. Centered at community colleges, career pathways have been widely embraced as the most effective structure for promoting access and completion of postsecondary programs of study without stifling upward career mobility. The Department of Labor’s Employment and Training Administration; the Department of Education, Office of Career, Technical, and Adult Education; and the Health and Human Services’ Administration of Children and Families have all united to embrace the career pathways model. A career pathway is “a series of connected education and training programs and support services that enable individuals to secure employment within a specific industry or occupational sector, and to advance over time to successively higher levels of education and employment in that sector. Each step on a career pathway is designed explicitly to prepare the participant for the next level of employment and education” (U.S. Department of Education 2012). Career pathways combine adult basic education and career training on the path to a postsecondary credential with labor market value, while forgoing excessive remediation. They also use stackable credentials, which allow students to earn marketable certificates and certifications on their way to more ambitious degrees and career goals. Career pathways programs also accelerate program completion by teaching general education and career education simultaneously.

This approach will alleviate the disadvantages of decentralization. In this system, each education and training institution has a clear role to play, but partnerships leverage local knowledge and skills to create synergies and promote specialization. Community colleges can partner with school districts on dual enrollment initiatives and basic adult education services; employers and regional Workforce Investment Boards work together to plan program offerings and provide high-quality internships, apprenticeships, and work-study opportunities. Meanwhile, One-Stop Career Centers offer job placement services.

Enhance the Productivity of Postsecondary Education Programs by Shifting from the Seat Time–Based Credit Hour to Competency-Based Education

Currently, most postsecondary programs of study are focused on seat time and the credit hour. This means that students who learn quickly spend extra hours in the classroom, while those who need extra time end up earning a low grade or failing the course and having to take it over.²² By recognizing only accredited course work presented in class, the credit hour system also discourages individuals from learning outside the classroom. It is based on a twentieth century model, in which education took place in the lecture hall. Yet we live in a time when new technologies, such as sophisticated assessment software, have encouraged modulated learning, where students advance at their own pace, and educators are facilitators and mentors, not lecturers. The credit hour system's monopoly on postsecondary learning prolongs the time it takes for individuals to acquire competencies with labor market value and muddles the value of postsecondary credentials. Consequently, industry-based certifications—which are based strictly on assessments of actual competency—have risen to prominence over the past decade.

In contrast, competency-based education uses prior learning assessments, which include standardized tests and portfolios of work, to understand the skills individuals have acquired outside of formal education programs. The University of Wisconsin has, for example, developed the UW Flexible Option, which encompasses a series of self-paced, competency-based degree and certificate programs that allows students to demonstrate mastery of competencies through prior course work, military training, or on-the-job training.²³ Competency-based education is often, though not always, focused on career preparation. For example, Brandman University, a private nonprofit postsecondary institution focused on working adults, has utilized the Department of Labor's Occupational Information Network (O*NET) to map occupational competencies onto its curricula.

This is not a new idea: prior learning assessments have been used for years by the American Council for Education to provide veterans with credit for what they learned in the military, and by the College Board, which uses advanced placement examinations as a way for high school students to earn college credits.

By making the skills workers develop in postsecondary programs more transparent, competency-based education will also benefit students by making the process of matching job seekers and employers more efficient.

Competency-based education and prior learning assessments have broad support from the American public (Lumina Foundation and Gallup 2013), but because the federal financial aid system is largely based on the credit hour, they face large institutional barriers. Even so, there are signs of change. More than 20 institutions across the United States are using competency-based education in some form—notably, Western Governors University.

CONCLUSION

The U.S. postsecondary education system is a kaleidoscope of institutions and interests, educational policies vary from state to state, and there is no unified data system connecting postsecondary fields of study and degrees with actual labor market demands. In order to improve opportunities for job seekers, meet the needs of employers, and improve the effectiveness of workforces, we need to reengineer postsecondary education by devising better ways of linking courses of study to career pathways. This will enable students to better understand how their training is likely to fit into the real-world job market, and it will motivate institutions to be more accountable for shaping their programs to fit their students' needs. For this to happen, however, we must first tackle the job of integrating the patchwork quilt of information systems that now exist among various states, agencies, and institutions into a comprehensive set of data that connects postsecondary programs with career pathways.

In a world where postsecondary education is more important than ever but less and less affordable, maintaining equal access to the American dream will be increasingly dependent on efficiency. Forging better connections between the needs of the labor market and postsecondary education will not only serve the needs of employers but will also hold colleges more accountable for providing degrees of value to their students. It will also give low-income students better strategies and clearer

pathways for getting a college degree that will help them pursue a meaningful career—and a small piece of the American dream.

Notes

1. Georgetown University Center on Education and the Workforce analysis of the U.S. Census Bureau's March Current Population Survey, 2013. Reported annual earnings are from 2012.
2. Georgetown University Center on Education and the Workforce analysis of data from OECD (2013). See [http://www.oecd.org/edu/eag2013%20\(eng\)--FINAL%2020%20June%202013.pdf](http://www.oecd.org/edu/eag2013%20(eng)--FINAL%2020%20June%202013.pdf) (accessed April 23, 2014). See Table A1.3a. Percentage of the population that has attained tertiary education by type of program and age group (2011). The age groups are 55–64 for the baby boom generation and 25–34 for young adults. Postsecondary attainment refers to “Total tertiary attainment” category and bachelor’s degree attainment refers to the “Tertiary-type A and advanced research programs.”
3. Georgetown University Center on Education and the Workforce estimate based on the supply-demand methodology in Carnevale and Smith (2013).
4. Georgetown University Center on Education and the Workforce estimate based on methodology in Carnevale and Rose (2011). This model predicts economic growth as a function of workers’ average educational attainment as measured by years of schooling, under a primary assumption of human capital theory that schooling enhances individuals’ skills and productivity.
5. Georgetown University Center on Education and the Workforce analysis of data from the American Society of Training and Development.
6. Georgetown University Center on Education and the Workforce analysis of data from U.S. Department of Education (Snyder and Dillow 2013, Tables 320–322).
7. Carnevale, Rose, and Hanson (2012) define “substantial labor market value” as providing at least a 20 percent wage premium over a high school education.
8. Based on a Georgetown University Center on Education and the Workforce analysis of data from the Current Population Survey, March supplement, 2010–2012. The analysis defines jobs requiring some college or an associate’s degree as working in an occupation where the share of workers in that occupation with at least some college is greater than the share of the labor force with at least some college. However, if the median annual earnings for the occupation are closer to the median earnings for workers with some college or an associate’s degree than to the median earnings for high school–educated workers and at least 10 percent higher than the median annual earnings for high school–educated workers, then the worker is classified as appropriately qualified for the occupation.
9. Georgetown University Center on Education and the Workforce analysis of data from the 2012 National Postsecondary Student Aid Study panel using the National Center for Education Statistics’ PowerStats.
10. <http://salarysurfer.cccco.edu/SalarySurfer.aspx> (accessed April 23, 2014).

11. McCann and Laitinen (2014) describe in detail how the student unit record system ban came about.
12. As Ruder and Van Noy (2013) note, earnings information should include the full distribution, not only the median.
13. Lumina Foundation's Degree Qualifications Profile provides a comprehensive and ambitious model for including both the quantitative and qualitative dimensions to learning that can, in theory, break down the tensions between specific and general learning; occupational and academic learning; and the tensions in the economic, cultural, and civic roles of postsecondary education. Their approach mixes both educators' and employers' perspectives in a consensus-building process. This bottom-up approach is most attractive because it relies more on faculty consensus and expertise as well as the ground-level perspectives of other stakeholders rather than top-down and more narrow measurement models like gainful employment.
14. Adoption of the Common Core represents a continued emphasis on curricula primarily focused on abstract, academic content.
15. Based on the assumption in Klein (2001) that the Perkins program accounts for 5 percent of national spending on secondary career and technical education programs.
16. However, career preparation is one of the central missions of four-year colleges and universities as well. For example, the majority of four-year college undergraduates are enrolled in career-focused majors (Carnevale, Strohl, and Melton 2011). There is also an opportunity for these institutions to incorporate labor market services into their institutional structures.
17. See Table 1A, Tuition and Fees column in College Board (2013). Prices are rounded to the nearest 100 for readability.
18. See Figure A2 in the appendix in Desrochers and Wellman (2011).
19. Holzer and Nightengale (2009) find this trend is especially strong among low-income students.
20. The Comprehensive Employment and Training Act was the federal program job training bill that provided unemployed workers with public service jobs. It was signed into law in 1973 during the Nixon administration until the Job Training Partnership Act (JPTA) replaced it in 1982 during the Reagan administration. WIA then replaced the JPTA in 1998 during the Clinton administration.
21. The Workforce Investment Act H.R.1385 received 91 votes in the Senate and 343 votes in the House of Representatives.
22. The exceptions to this are industry-based certifications, which are test-based and typically do not require individuals to complete a program of study to receive a certification.
23. <http://flex.wisconsin.edu> (accessed April 23, 2013).

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