



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

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2015

W.E. Upjohn Institute for Employment Research
Kalamazoo, Michigan

Part 1

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The U.S. Approach to Higher Education and Workforce Development

Separate Parts in Search of a Whole

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In the United States today, roughly three-fourths of all high school graduates enroll in and attend a college or university. Many hope to attain skills and credentials that will enable them to find high-paying jobs as soon as they finish college and enter the labor force.

Unfortunately, large percentages of these students (especially at our public two-year institutions) drop out without earning any college credential. Even among those who do obtain a credential, they receive virtually no counseling or other information about the job market while they are there and frequently earn degrees with only modest labor market value. In the meantime, public funding for our workforce development system has been shrinking for decades, with fewer people obtaining job training over time, while our workforce institutions remain relatively separate from those of higher education.

How did the United States arrive at such a juncture? What are the strengths and weaknesses of our systems of higher education and workforce development? What would constitute the most effective reforms that we could introduce in both realms through policy? This chapter seeks to answer these questions.

THE SEPARATE SPHERES OF HIGHER EDUCATION AND JOB TRAINING

During most of the twentieth century, higher education and job training were viewed as quite separate activities with very different roles to play in the U.S. economy. Enrollment in colleges and universities expanded dramatically after World War II, with student tuition levels subsidized at least partly by the federal GI Bill, but also by states as they built their own higher education systems. Local public two-year colleges have often been seen as stepping-stones to four-year schools, though they also prepared students for a number of occupations. The public and private four-year colleges (which now number well over 2,000) have provided liberal arts degrees as well as more focused preparation for a range of occupations (such as accountants, teachers, and engineers). Among those majoring in liberal arts fields, many have gone on to obtain graduate degrees in a range of professions, while others found work directly after college in fields that didn't require specific occupational preparation.

In contrast, until the 1960s most job training was relatively short-term and occurred in the workplace, where newly hired or promoted workers would receive both formal and informal preparation for the jobs they were beginning, and where the costs of such training were split between employers and workers (Mincer 1974). This was true in both white-collar and blue-collar jobs and in a wide range of industries, such as manufacturing and service sectors. Somewhat longer-term training was also provided in some cases, such as apprenticeship programs in construction.

Federally funded job training began with the Manpower Development and Training Act of 1962, as a response to concerns over regional pockets of structural unemployment. But these efforts shifted their focus to the disadvantaged rather than the displaced and expanded quite dramatically in the late 1960s and 1970s, beginning with the War on Poverty and subsequent passage of the Comprehensive Employment and Training Act (CETA) in the early 1970s (Holzer 2013). Job training under CETA was provided in classroom settings as well as on the job. In the late 1970s, CETA funded considerable amounts of public service employment for the poor, along with job training. Funding for CETA

reached its peak (adjusted for inflation) in 1980 at the end of the Carter administration.¹

CHANGES AFTER 1980: THE JOB TRAINING PARTNERSHIP ACT AND BEYOND

During the 1980s and 1990s, CETA evolved first into the Job Training Partnership Act (JTPA) and then the Workforce Investment Act (WIA). In 2014, WIA became the Workforce Innovation Opportunity Act (WIOA). With each new legislative iteration, more authority devolved to local workforce groups (known as Workforce Investment Boards) that represented local stakeholders, including business, labor, and education agencies. Over time, the presence of local businesses on the Workforce Investment Boards grew, with the goal of steering training dollars toward growing industry sectors with greater demand for skills.

WIA created funding for some 3,000 new One-Stop Career Centers (now called American Job Centers) around the country, at which a new range of workforce services have been provided. These have included *core* services, which is essentially modest staff assistance with job search, and *intensive* services, in which job seekers receive aptitude testing and career counseling. Individuals can only receive training once they have first received core and intensive services. In addition, greater choice has been provided for those obtaining training, with funding ultimately provided through vouchers (known as Individual Training Accounts [ITAs]). Individuals receiving such vouchers can shop among local training providers, about whom information is provided at the One-Stop Centers across the nation.

Funding for these activities is provided through separate funding streams for adults, dislocated workers, and youth. A range of other programs and services, including the Job Corps for youth, are also funded through the various titles of WIOA (Besharov and Cottingham 2011).²

But funding through this legislation has diminished fairly consistently over the past three decades, even while some new funds for workforce services have appeared in other (small) federal programs and agencies.³ Public service employment has disappeared completely

from this legislation, while the numbers of workers receiving training (especially among the disadvantaged) has declined steadily over time (Holzer 2009). For those receiving ITAs, training is mostly modest and very short term.⁴ By most measures, federal expenditures on workforce services relative to the size of our economy and labor force are very modest, in comparison with most other industrial countries.⁵

Why has federal workforce funding, especially for job training, diminished so much over time? Partly this has occurred because of growing doubts about the cost-effectiveness of these services. A large body of evaluation research on federal job training programs has developed in this time period, and results have been decidedly mixed, though usually more positive than the critics allege. Publicly provided training for disadvantaged adults under JTPA and WIA have generally appeared to be cost-effective, even if its impacts are not terribly large (on average) and sometimes they fade over time.⁶

But perhaps another reason for the decline in funding is that job training, in its traditional form, has become viewed as a weak substitute for higher education as preparation for the job market. After declining in the 1970s (because of a temporary glut of college-educated workers who pursued higher education to avoid the draft for the Vietnam War), the economic value of college degrees rose substantially, beginning in the 1980s. By the year 2000, the ratio of earnings for four-year college graduates to high school graduates had roughly doubled, relative to where it stood in 1980.⁷

Greater numbers of good-paying jobs now require either two- or four-year college degrees (Autor 2010). These jobs are especially prevalent in the growing service sectors of the economy, particularly in fields such as health care, education, and finance; jobs for non-college graduates in these fields also expanded dramatically, though they paid much lower wages (Carnevale, Smith, and Strohl 2010). Compensation for jobs requiring more than a bachelor's degree (BA) have grown even more dramatically over time, and even in the years since 2000 when average compensation for those with only a BA has stagnated (Mishel 2010).

At the same time, the numbers of good-paying production and clerical jobs for those without higher education have diminished, as their wages and benefits declined or they were eliminated due to the growing power of new technologies and globalization. Institutional changes,

such as declining unionism and declining relative values of statutory minimum wages, reinforced the changes generated by these market forces (Autor, Katz, and Kearney 2008; Card and Dinardo 2007). Though some fields—notably construction—continued to provide such opportunities (at least until the Great Recession began), those in manufacturing, mining, and many other traditional sectors have declined dramatically in number (Autor 2010).

Under these circumstances, students have been flocking to two- and four-year colleges. Though enrollments declined initially during the 1980s, they eventually rose quite substantially. Unfortunately, the numbers of new college graduates did not rise as rapidly as the numbers of new enrollees, as completion rates fell. Most economists believe that the supply of new college graduates has failed to keep pace with the growing demand for these skills in the economy, and therefore the premium paid to college graduates has stayed very high (Goldin and Katz 2008).

For disadvantaged workers, college is now viewed as the best route to higher-paying jobs, rather than more traditional job training. A range of programs in two-year colleges, including certificate programs as well as those for associate's (AA) degrees, provide options for advancement for those whose academic skills are perhaps not strong enough for four-year colleges and universities. Though the official price tags on higher education have risen quite dramatically over time, so did a number of forms of financial assistance, including Pell Grants, whose maximum values and numbers rose sharply after 2000. Indeed, federal expenditures on Pell Grants now total about \$36 billion per year—and it now constitutes the largest source of public funding for workforce development in the United States today—since up to half of Pell Grant recipients are also older and independent students, who are often seeking shorter-term vocational training rather than BA (or even AA) degrees (College Board 2013).

The importance of college education as preparation for the job market has grown for one additional reason: the lack of high-quality career and technical education (CTE) options for students in high school. Traditionally, vocational education in high schools provided some direct training for non-college-bound students. But, beginning in the 1960s, such education faced criticisms over the “tracking” of low-income and minority students away from college, and over its low quality more

broadly. Efforts to generate other “school-to-work” pathways were attempted in the 1990s under the School to Work Opportunities Act (Neumark 2007) but fizzled afterward due to weaknesses in that legislation (with a modest amount of federal money spread very thinly over almost all public school districts in the nation), ideological opposition (from conservatives who claimed that the program amounted to federal bureaucrats planning the future lives of children), and indifference from the program’s primary constituents (such as the business community).

While the quality of CTE students and curricula appears to have improved since 2000, as the federal Perkins Act has encouraged state and local reforms, enrollments remain limited. Most students and their families continue to see CTE as a less preferred substitute for college rather than as a source of potential preparation for college (as well as careers); in reality, too many such programs at the high school level remain substitutes for “college prep” rather than complements or alternative pathways to getting there. And U.S. employers continue to view (perhaps correctly) high school graduates who have no specific technical training or work experience as bringing little skill and value to their workplaces, while those in Germany and other EU countries where high-quality CTE is more widely available and more heavily utilized are viewed much more positively by their employers (Hoffmann 2011; Symonds, Schwartz, and Ferguson 2011).

THE STRENGTHS AND LIMITATIONS OF HIGHER EDUCATION AS WORKFORCE PREPARATION

With its high enrollment rates, higher education in the United States offers a very wide range of both youth and adults an opportunity to earn credentials that should prepare them for well-compensated jobs. A very diverse set of institutions—public and private, two- and four-year, for-profits and nonprofits—gives students an enormous range of options from which to choose. For those completing a degree, the average economic returns on their investments remain very strong, even though the costs of the investments have risen substantially over time. And, as noted earlier, many sources of aid are provided to students so they often don’t have to pay the “sticker price” as advertised (Dynarski and

Scott-Clayton 2013). In response to these incentives, the rates of college graduation have finally risen in the United States, especially during the Great Recession of the past six or seven years.

But major problems remain. As noted earlier, completion rates among enrollees remain quite low. In particular, completion rates among minorities and low-income students at four-year colleges lag dramatically behind those of whites and/or middle- and upper-income students (Holzer and Dunlop 2013). For those at two-year colleges, fewer such gaps exist, but overall completion rates are very low. A number of sources of the completion gap have been identified by researchers, including the weak academic preparation of so many students (combined with very ineffective remediation programs), poor information regarding their college options (and underenrollment by strong low-income students in the higher-quality schools whose graduation rates are substantially higher), the pressures of providing income for their families among older students or those who became parents at early ages, and the rising cost of higher education (Bound, Lovenheim, and Turner 2010; Haskins, Holzer, and Lerman 2009).

On the last issue, state appropriations for public colleges and universities have not been rising sufficiently in recent years to keep tuition there from rising as well (Baum, Kurose, and McPherson 2013). This is especially problematic for families with limited financial assets (whose housing values no longer provide additional wealth to pay for college, as they did during the housing boom years [Lovenheim 2011]). As a result, many students pile up substantial debt while in college. For those who do not complete their degree programs, or whose labor market earnings will be limited even when completing the degree (due to the continuing weakness of the U.S. job market for young workers at all education levels), paying off this debt can be quite burdensome.

This raises another issue: in addition to low completion rates and a weak job market, some college students also face limited job market success because they experience such a paucity of workforce development services. Many students who effectively received no exposure to labor market information or career guidance in high schools also get very little in college. Most colleges themselves provide little in the way of career counseling (or even academic counseling, in some cases), and little information on national, state, or local labor markets is available to students there. Thus, most have fairly little information on the fields

of study that will prepare them for work in economic sectors where employment is growing and demand will be strong, or those that offer relatively better compensation for a particular degree level. While one could obtain such information (and personal counseling about the kind of education needed and one's aptitude for it) in a One-Stop (or Jobs Center) office, very few students receive such services (Jacobson and Mokher 2009); and the capacity of these offices would likely not be sufficient to handle a much larger inflow if more students were interested (Heaney 2011).

In many cases, students do not necessarily enroll in fields that are well-compensated. Of course, there are many determinants of these choices, including the relative strengths of their preparation for and interest in math and science relative to other fields. In the private liberal arts colleges, students are explicitly choosing fields of study for their academic interests and broad intellectual preparation rather than their ultimate rates of market compensation, and this is true to a lesser extent at public institutions as well. This strategy is particularly well-suited for those intending to pursue a postgraduate degree, who will obtain more career-specific skills later on, though not for those who hope for more immediate employment-related skills and jobs.

Still, for those seeking strong employment opportunities immediately after graduation, more guidance could be quite helpful. Thus, in a market where the variance in returns to college degrees across fields is extremely high, the choices made are not necessarily financially optimal, and many students choose fields that are not particularly well-compensated (Jacobson and Mokher 2009). Furthermore, most students get too little job search information to help them connect with employers when they finish, and institutional linkages between colleges and employers remain quite weak, so students' abilities to find the best-paying jobs for which they have prepared are also limited.

Even students' completion rates might be impaired in many cases by the lack of clear perceived links between their classroom schooling and the needs of employers, since motivation and understanding are often enhanced when academic schooling is provided *contextually* rather than abstractly. Models of work-based learning provide this context automatically, and this might contribute to their higher success rates in many cases, as we note below. Additionally, the contrast between the structure and guidance provided to students in proprietary

occupational colleges, as opposed to unstructured community colleges, might well contribute to the higher rates of graduation and employment rates afterward at the former relative to the latter, as has been noted by a number of analysts (Davis and Cho 2013; Rosenbaum 2001; Scott-Clayton 2011).

WHAT WOULD IMPROVE EDUCATION AND WORKFORCE OUTCOMES AMONG U.S. STUDENTS?

Based on the discussion above, I believe that we could improve both the education and workforce outcomes of workers in the United States, especially the disadvantaged, by undertaking the following:

- an expansion of high-quality CTE and work-based learning,
- an expansion of sectoral training models involving employers and community colleges,
- reforms in financial aid and remedial education that would improve college completion rates as well as workforce outcomes, and
- other efforts to better integrate higher education and workforce services and make both more responsive to the U.S. economy.

In each case, efforts to maintain quality and at least some focus on the disadvantaged are important, while avoiding the creation of windfalls for the business community.

Expanding High-Quality CTE and Work-Based Learning

As the European experience noted earlier suggests, a more effective and higher-quality system of CTE in high school might raise the earnings of those who do not enroll in college and improve high school graduation rates. Indeed, empirical evidence suggests that CTE has had such effects in the last few decades (U.S. Department of Education 2004). In the best such systems, though, CTE would no longer be seen as a substitute for college and would enroll those preparing for college as well. Contextualizing academic learning might improve academic

performance among those who learn better when material is presented in applied manners rather than purely abstractly; and, since large fractions of students bound for college are interested in career preparation rather than liberal arts, such a CTE curriculum might improve the college performance of these students as well.

Recent evidence suggests that the quality of curriculum has already improved for CTE students, with many more taking math and science courses in high school than in earlier decades. Changes in the Perkins Act, through which the federal government provides some modest financing of state and local CTE programs, have also generated pathways from high school CTE to “career clusters and related pathways” in every state (Holzer, Linn, and Monthey 2013).

Still, a range of potential improvements in CTE would further the goal of creating high-quality CTE systems in secondary schools around the nation. These improvements (Holzer, Linn, and Monthey 2013) would include

- high-level academic material, including advanced placement work for the highest performers;
- a curriculum that teaches occupational and general employability skills as well as academics;
- work-based or project-based applied learning across a range of traditional academic disciplines;
- engagement with employers and industry associations, to make sure curricula are relevant to the needs of growing industry sectors;
- supports for disadvantaged students who might struggle with more rigorous curricula;
- faculty and staff development to support the skills of teachers and counselors in these areas; and
- assessment tools to measure student skills in these areas and allow for accountability.

A number of academic models around the nation have incorporated these characteristics and achieved some scale. For instance, High Schools That Work is a model that has been implemented at dozens of high schools in several (mostly southern) states, which generates high

achievement scores, graduation rates, and college attendance through its CTE curricula. Linked Learning is a model that has been implemented districtwide in some California school districts, providing high-quality CTE instruction to all students.

While no rigorous evaluation evidence exists for these two models, such evidence does show that Career Academies—a model of industry-focused instruction within broader high schools that has been implemented in several thousand high schools across the nation—can generate very large improvements in earnings for students, especially at-risk males, for many years beyond graduation without any loss of academic performance (Kemple 2008). Newer versions of the Career Academies are trying to improve the college preparatory curricula in these models; and rigorous evaluation of newer teaching models (Castellano et al. 2012) show that math and science instruction at high levels can be integrated into CTE curricula.

More broadly, CTE and work-based learning need not be limited to secondary schools in the United States. A range of “career pathway” models that begin in community colleges and combine classroom instruction and academic credential attainment with paid work experience are also being developed around the nation (Choitz 2014; Fein et al. 2013) to generate occupational training for a range of postsecondary students, including the disadvantaged.

Other forms of work-based learning show promise as well. For instance, apprenticeships focus primarily on occupational learning through paid work experience on the job. Many new forms of apprenticeship now combine such learning with community college curricula that generate AA degrees. In this way, students can obtain real work experience—which young people have had great difficulty attaining in recent years, especially since the beginning of the Great Recession—with the attainment of valuable postsecondary credentials. Paid internships and various forms of incumbent worker training could be encouraged as well (Hollenbeck 2008).⁸

Evaluation evidence suggests high returns over time to workers who participate in apprenticeship programs (Lerman 2010). Worker persistence in these programs is high, even among the disadvantaged, since paid work experience is very appealing to this group. Wisconsin, Georgia, and South Carolina have taken major steps to expand such programs, at only modest public cost (Holzer and Lerman 2014).

Sectoral Models

In sectoral training models, training providers target key industries with high-demand growth and good-paying jobs (especially for those without BAs) while preparing individuals for work in these industries. Intermediaries generate partnerships between these providers (who increasingly are community colleges) and employers in these industries. The intermediaries treat both the employers and the trainees as stakeholders, and they must gain the confidence of the former by sending them well-skilled workers. But the workers themselves are also highly motivated, as they know the training prepares them for existing jobs that they can clearly see at the end of the training period.

Rigorous evaluation evidence shows that, at their best, sectoral models can generate very large impacts on worker earnings among both adults and youth (Maguire et al. 2010; Roder and Elliott 2011). These models generally do not serve those with weak basic skills or other characteristics of the “hard-to-employ.” Questions also remain about their long-term impacts, especially if and when workers change jobs or their industries restructure, and whether the strong results from a small number of sites in those evaluations can be replicated and scaled.

Still, the evidence to date has been strong enough that many states are trying to scale up these models by building partnerships between local industries, community colleges, and workforce boards for high-demand sectors (National Governors Association 2013). Indeed, these states now see sectoral training as the basis of their workforce and economic development programs, but whereas many such partnerships are being developed, we have very little evidence on numbers of participants or completion rates in these efforts.

Reforming Counseling, Financial Aid, and Developmental Programs for College

Given the very low completion rates among low-income or minority students in both two- and four-year colleges, are there reforms in practices in these sectors that might improve these rates as well as subsequent labor market success for these individuals? Undoubtedly, greater availability of high-quality early childhood programs and reforms in elementary and high school systems would improve the academic prep-

aration and therefore the success rates of those attending college; however, assuming that this will not happen quickly or fully, what else can we do for college enrollees to improve rates of success?

One possibility is in the area of financial aid. Despite our growing expenditures in this area, rigorous evidence that Pell Grants actually raise higher educational attainment (as opposed to enrollment) is quite thin (Long 2013). To address this issue, a recent report from the College Board (2013) suggests a range of reforms in the Pell Program, both for younger students and those who are older (e.g., 25 and older) who are primarily part-time students in more vocational tracks. The reforms are based on evidence that such aid is more accessible when it is simplified and more transparent, but also that having clear academic performance standards and supports can improve completion rates (Dynarski and Scott-Clayton 2013). It also reflects the recent evidence that providing information about college quality to college applicants can raise the tendency of low-income but high-performing students, who now overwhelmingly apply to very local colleges, to instead apply to and attend more highly ranked schools, where completion rates are much higher (Hoxby and Turner 2013).

Accordingly, the College Board report (2013) calls for more simplified and transparent income eligibility requirements, where students would be easily able to determine their own eligibility; clearer academic performance standards, which would provide stronger incentives for students to perform well and therefore to graduate; and individually tailored guidance and support systems, with somewhat different services provided for dependent and independent students, and including mandatory career counseling for the latter (see also Baum and Scott-Clayton [2013]).

Another area where reforms are clearly in order is in developmental (or remedial) education. Large fractions of students, especially at community colleges, now enroll and begin to attend without having the necessary academic preparation to do college-level work, and they are often assigned to (noncredit) developmental classes at the outset. But, to date, most evidence suggests that such classes rarely have positive effects on academic outcomes of students, and sometimes have negative ones (Clotfelter et al. 2013). Many colleges, even at the two-year level, require that students pass Algebra 1 before taking for-credit classes in

many fields, even though it is not clear that such math skills are required for many majors.

We are beginning to find clear evidence of developmental education programs that have more positive effects on postsecondary education outcomes. This seems to occur when these programs are more accelerated, and more integrated into material for credit rather than being “stand-alone” (Bettinger, Boatman, and Long 2013). Integrating the remedial material directly into skills training or at least into the context of labor market information appears particularly helpful. Examples of successful acceleration include the Accelerated Study in Associated Programs approach at the City University of New York, while integration with labor market training or information can be found respectively in the Integrated Basic Education and Skills Training approach in the state of Washington or the GED Bridge Program at LaGuardia Community College in New York. Efforts to reform the placement methods that colleges use for remediation, and even their requirements for successful completion, are starting to be considered as well.

Integrating Higher Education and Workforce Services with Labor Markets

Though cooperation between local higher education agencies or institutions and workforce boards has been rising over time, the two sets of agencies remain fairly “siloed” in most locations around the country. The extent to which both are really responsive to the labor demand needs of the local economy is largely limited.

The limited effects of the labor market on higher education in particular reflects a problem of too little labor market *information* among students and too few *incentives* to be responsive to that market among institutions. Given the paucity of career counseling and information for students, it is not surprising that students pay so little attention to labor market trends when making their choices of major (Long, Goldhaber, and Huntington-Klein 2014). With administrative education and labor market data as well as real-time job vacancy data becoming more available over time, our ability to remedy this problem seems to be growing. Though the colocation of Job Centers and college campuses appears to be growing (with as many as one-fourth of all centers now located on college campuses), the majority of U.S. students still appear to have little access to (or take too little advantage of) such services.

Many public institutions of higher education also have little incentive to be responsive to these forces. State subsidies for higher education in both two- and four-year colleges usually reflect student “seat time” and are rarely tied to either academic or subsequent labor market success. In addition, instructor and equipment costs in high-demand sectors (such as health technology or advanced manufacturing) are often high, further diminishing the financial incentives or abilities of colleges to expand instructional capacity in these areas. As a result, anecdotes abound of students flocking to colleges at the trough of the recession and seeking to take courses in health care and health technology, only to find these classes oversubscribed and thus unavailable to them on a timely basis.

Of course, this is not to say that there is no role for liberal arts majors at public institutions, especially at the flagship four-year schools. But incentives to be at least somewhat more responsive, especially at institutions where many or most students are seeking vocational certifications, could be made by tying state education subsidies at least partly to average credit attainment and program completion rates.⁹ Where this is being done—and at least half of the states are beginning to move in this direction—care must be taken not to generate unintended consequences at schools, which might now have an incentive either to “cream-skim” with higher admissions requirements or to lower graduation requirements in high-demand fields. But some attempts to improve these incentives, especially in the labor market, seem to be in order.¹⁰

CONCLUSION: GETTING FROM HERE TO THERE

I have argued in this chapter that our public system of workforce services and training has diminished over time and has largely been replaced by rising enrollments in higher education (with Pell Grant financing for low-income students). But education completion and the subsequent earnings of students are both limited for a variety of reasons, at least some of which reflect the separation of higher education from workforce services and an underdevelopment of course work and curricula that are relevant to the job market. Thus, the separation of higher education and workforce services from each other and from the

labor market is at least partly responsible for the weak outcomes we observe in both.

How might this situation be remedied? States need to take the lead in encouraging more development of their higher-quality CTE systems in secondary schools, work-based learning models, career pathways, and sectoral initiatives involving partnerships between business, workforce boards, and community colleges. These partnerships are, in fact, growing across the nation (National Governors Association 2013), though more needs to be done to encourage broad participation in them. The states should implement performance standards for their subsidies to publicly funded higher education institutions, both two- and four-year; these performance incentives should be based on the subsequent earnings of students in the labor market as well as academic performance and program completion (with incentives being roughly split between these two sets of outcomes). The provision of labor market information about job opportunities and career counseling more broadly should be made more readily available on college campuses. States should also consider technical assistance and financial incentives for employers implementing apprenticeship programs or other forms of incumbent worker training (Holzer and Lerman 2014).

To monitor both the scale and the quality of these developments, states should make better use of their administrative higher education and earnings data, as Zinn and Van Klunen (2014) propose. They should actively monitor the outcomes associated with any such programs created above, and do at least modest evaluations of their impacts on educational attainment and earnings, especially among the disadvantaged.¹¹

The federal government can do more to encourage this process in two ways. First, the U.S. Departments of Education and Labor have developed a wide range of competitive grants programs in recent years to encourage the kinds of partnerships described above and greater responsiveness of higher education to workforce needs and the labor market. These grant programs have included the Workforce Incentives for Regional Economic Development grants of the more recent Bush Administration; and the Trade Adjustment Assistance Community College and Career grants, Workforce Innovation grants, and Career Connect grants of the Obama administration. But many of these grants have

themselves led to small-scale and fragmented programming, rather than state-level innovation and systems development.

Accordingly, a program that targets states and encourages large-scale implementation of the approaches described above should be used, perhaps modeled after the Race to the Top grants from the Department of Education that had such large impacts on state-level programs in the K–12 years. Holzer (2011) describes what such a program would look like and how it would be administered.

Furthermore, the federal government should use its upcoming authorizations of several major federal programs, such as the Higher Education Act, the Perkins Act, and WIA to encourage these trends as well. For instance, the Pell Grants authorized under the Higher Education Act could be reformed along the lines suggested above, Perkins could be made more of a competitive grant to encourage state-level development of high-quality CTE and work-based learning (as both the recent Bush and Obama administrations have proposed), and workforce programs could do more to encourage sector partnership and career pathway development while improving performance measurement (as the recently enacted Workforce Innovation and Opportunity Act of 2014, with widespread support in both houses of Congress, would encourage).

It is also important to mention some important caveats to these ideas. As noted earlier, any efforts along these lines should be carefully monitored to encourage not only high-quality education and workforce programs (in terms of impacts on outcomes), but to maintain at least some focus on the disadvantaged while avoiding large windfalls for employers. Doing so while maintaining employer interest is a difficult balancing act; swinging too far in one direction (toward the needs of the disadvantaged) or the other (kowtowing to employers) should be carefully avoided. Careful monitoring of student and worker outcomes in these efforts, and rigorous evaluations of any programs implemented, are needed to achieve and maintain this balance.

Furthermore, the tension between general and specific skill development needs to be acknowledged. The evaluation evidence suggests that sector- or occupation-specific programs generate some of the strongest outcomes for disadvantaged youth and adults. But, over the long term, some general (or portable) skill development is very important, espe-

cially since many workers will change employers and even sectors over time. Furthermore, sectors that today show strong employment growth might show much less tomorrow, in a dynamic labor market where technology and globalization can cause rapid shifts in the locus of labor demand. The more general the skill development, however, the more reluctant employers will be to pay for it (Becker 1996), and this must be taken into account as well by program developers and administrators.

Finally, sectoral programs and others centered around community colleges will likely not be successful with the hardest-to-serve students—in other words, those reading well below the 9th- or 10th-grade level, or those with very poor work experience or physical or emotional disabilities. While our knowledge of what serves to boost employment of these groups is much more limited, our workforce policies should not forget them. Accordingly, experimentation with and evaluation of efforts to meet their needs should proceed as well.

Notes

1. Expenditures under CETA in 1980 were approximately \$17 billion (Holzer 2009), or roughly \$40 billion in today's dollars.
2. Title I includes the three funding streams above and the Job Corps, as well as other smaller programs; Title II funds Adult Basic Education; Title III encompasses the former Wagner-Peyser Act funding for One-Stop Offices; and Title IV contains miscellaneous expenditures.
3. Funding for WIOA currently totals about \$5 billion, which is down nearly 90 percent in real terms from its peak in 1980. But the U.S. Government Accountability Office (2011) reports total funding in 2010 of about \$18 billion for workforce services in 47 different federal programs, the largest of which are the various streams of WIA plus Temporary Assistance for Needy Families (TANF) and state vocational rehabilitation programs.
4. The average value of an ITA today is just a bit over \$2,000, according to Andersson et al. (2013).
5. The funding listed in the U.S. Government Accountability Office report constitutes just 0.1 percent of GDP and might rise to 0.2 percent if Pell Grant funding of vocational education is included. According to O'Leary, Straits, and Wandner (2004), this total lags behind expenditures by most countries in Europe on such services.
6. See Andersson et al. (2013) and Heinrich et al. (2011) for evidence on WIA and summaries of evaluations of JTPA.
7. The ratio of BA to high school earnings increased from roughly 0.35 in 1979 to 0.70 in 2000.

8. Hollenbeck (2008) describes state investments in incumbent worker training before the onset of the Great Recession, though some states have cut back on these expenditures since that time.
9. See the National Conference of State Legislatures (2014).
10. Though most states now are focusing only on measures of average academic performance and completion of their students for determining subsidies to colleges, Holzer (2014) argues that labor market outcomes of students through the first five years after they leave, such as their average earnings or employment rates (especially among disadvantaged or minority students), should also be used. Colleges and universities would face stronger incentives to expand teaching capacity in areas of high labor demand, even though the costs of equipment and instructors in such fields might be higher.
11. States could, for instance, do evaluations using difference-in-difference analysis of employment outcomes of young or disadvantaged workers in different counties or metropolitan areas based on the timing of introduction and implementation of new programs or procedures.

References

- Andersson, Fredrik, Julia I. Lane, Jeffrey Smith, Harry J. Holzer, and David Rosenblum. 2013. "Does Federally Funded Job Training Work? Nonexperimental Estimates of Training Impacts Using Longitudinal Data on Workers and Firms." NBER Working Paper No. 19446. Cambridge, MA: National Bureau of Economic Research.
- Autor, David. 2010. "The Polarization of Job Opportunities in the U.S. Labor Market." Washington, DC: Center for American Progress.
- Autor, David, Lawrence F. Katz, and Melissa S. Kearney. 2008. "Trends in U.S. Wage Inequality: Revising the Revisionists." *Review of Economics and Statistics* 90(2): 300–323.
- Baum, Sandy, Charles Kurose, and Michael McPherson. 2013. "An Overview of American Higher Education." *The Future of Children* 23(1): 17–40.
- Baum, Sandy, and Judith Scott-Clayton. 2013. "Redesigning the Pell Grant Program for the 21st Century." Washington, DC: The Hamilton Project, Brookings Institution.
- Becker, Gary. 1996. *Human Capital*. Chicago: University of Chicago Press.
- Besharov, Douglas J., and Phoebe H. Cottingham, eds. 2011. *The Workforce Investment Act: Implementation Experiences and Evaluation Findings*. Kalamazoo, MI: W.E. Upjohn Institute for Employment Research.
- Bettinger, Eric, Angela Boatman, and Bridget Terry Long. 2013. "Student Supports: Developmental Education and Other Academic Programs." *The Future of Children* 23(1): 93–115.

- Bound, John, Michael Lovenheim, and Sarah Turner. 2010. "Why Have College Completion Rates Declined? An Analysis of Changing Student Preparation and Collegiate Resources." *American Economic Journal: Applied Economics* 2(3): 129–157.
- Card, David, and Jonathan Dinardo. 2007. "The Impact of Technological Change on Low-Wage Workers: A Review." In *Working and Poor: How Economic and Policy Changes Are Affecting Low-Wage Workers*, Rebecca Blank, Sheldon Danziger, and Robert F. Schoeni, eds. New York: Russell Sage, pp. 113–140.
- Carnevale, Anthony, Nicole Smith, and Jeff Strohl. 2010. *Help Wanted: Projections of Jobs and Education Requirements through 2018*. Washington, DC: Georgetown Center on Education and the Workforce.
- Castellano, Marie, Kirsten Sundell, Laura T. Overman, and Oscar A. Aliaga. 2012. "Do CTE Programs of Study Improve Student Achievement? Preliminary Analyses from a Rigorous Longitudinal Study." *International Journal of Education Reform* 21(2): 98–118.
- Choitz, Vickie. 2014. "Alliance for Quality Career Pathways Programs." Washington, DC: Center for Law and Social Policy.
- Clotfelter, Charles, Helen Ladd, Clare Muschkin, and Jacob Vigdor. 2013. "Developmental Education in North Carolina Community Colleges." CALDER Postsecondary Working Paper. Washington, DC: American Institutes for Research.
- College Board. 2013. *Rethinking Pell Grants*. Washington, DC: College Board.
- Davis, Jenkins, and Sung-Woo Cho. 2013. "Get With the Program: Accelerating Community College Students' Entry into and Completion of Programs of Study." New York: Center for Community College Research, Columbia University.
- Dynarski, Susan, and Judith Scott-Clayton. 2013. "Financial Aid Policy: Lessons from Research." *Future of Children* 23(1): 67–91.
- Fein, David, Howard Rolston, David Judkins, and Karen N. Gardiner. 2013. "Learning What Works in Career Pathways Programming: The ISIS Evaluation." Unpublished paper. Bethesda, MD: Abt Associates.
- Goldin, Claudia, and Lawrence Katz. 2008. *The Race between Education and Technology*. Cambridge, MA: Harvard University Press.
- Haskins, Ron, Harry Holzer, and Robert Lerman. 2009. *Promoting Economic Mobility by Raising Postsecondary Education*. Washington, DC: Pew Research Centers.
- Heaney, David. 2011. "One-Stop Management and the Private Sector." In *The Workforce Investment Act: Implementation Experiences and Evaluation Findings*, Douglas J. Besharov and Phoebe H. Cottingham, eds. Kalamazoo MI: W.E. Upjohn Institute for Employment Research, pp. 141–152.

- Heinrich, Carolyn J., Peter R. Mueser, Kenneth R. Troske, Kyung-Seong Jeon, and Daver C. Kahvecioglu. 2011. "A Nonexperimental Evaluation of WIA Programs." In *The Workforce Investment Act: Implementation Experiences and Evaluation Findings*, Douglas J. Besharov and Phoebe H. Cottingham, eds. Kalamazoo MI: W.E. Upjohn Institute for Employment Research, pp. 371–406.
- Hoffmann, Nancy. 2011. *Schooling in the Workplace*. Cambridge MA: Harvard Education Press.
- Hollenbeck, Kevin. 2008. "Is There a Role for Public Support of Incumbent Worker Private Sector Training?" Upjohn Institute Working Paper No. 08–138. Kalamazoo MI: W.E. Upjohn Institute for Employment Research.
- Holzer, Harry. 2009. "Workforce Development as an Antipoverty Strategy: What Do We Know? What Should We Do?" In *Changing Poverty, Changing Policies*, Maria Cancian and Sheldon Danziger, eds. New York: Russell Sage, pp. 301–329.
- . 2011. "Raising Job Quality and Skills for American Workers." Discussion Paper 2011-10. Washington, DC: The Hamilton Project, Brookings Institution.
- . 2013. "Workforce Development Policies in the U.S." In *Legacies of the War on Poverty*, Martha J. Bailey and Sheldon Danziger, eds. New York: Russell Sage, pp. 121–150.
- . 2014. "Improving Employment Outcomes for Disadvantaged Students." In *Policies to Address Poverty in America*, Melissa S. Kearney and Benjamin H. Harris, eds. Washington, DC: The Hamilton Project, Brookings Institution, pp. 87–95.
- Holzer, Harry, and Erin Dunlop. 2013. "Just the Facts Ma'am: Postsecondary Education and Labor Market Outcomes in the U.S." CALDER Postsecondary Papers. Washington, DC: American Institutes for Research.
- Holzer, Harry, and Robert Lerman. 2014. "Work-Based Learning to Expand Jobs and Occupational Qualifications for Youth." Washington, DC: Center on Budget and Policy Priorities.
- Holzer, Harry, Dane Linn, and Wanda Monthey. 2013. *The Promise of High-Quality Career and Technical Education Programs in the U.S.* Washington, DC: College Board.
- Hoxby, Caroline, and Susan Turner. 2013. "Informing Students about Their College Options: A Proposal for Broadening the Expanding College Opportunities Project." Washington, DC: The Hamilton Project, Brookings Institution.
- Jacobson, Louis, and Christine Mokher. 2009. *Pathways to Boosting the Earnings of Low-Income Students by Increasing Their Educational Attainment*. New York: Hudson Institute.

- Kemple, James. 2008. *Career Academies: Long-Term Impacts on Work, Education and Transitions to Adulthood*. New York: MDRC.
- Lerman, Robert. 2010. "Expanding Apprenticeship: A Way to Enhance Skills and Careers." Washington, DC: Urban Institute.
- Long, Bridget Terry. 2013. "Supporting Access to Higher Education." In *Legacies of the War on Poverty*, Martha J. Bailey and Sheldon Danziger, eds. New York: Russell Sage, pp. 93–120.
- Long, Mark, Dan Goldhaber, and Nick Huntington-Klein. 2014. "Do Students' College Major Choices Respond to Changes in Wages?" CEDR Working Paper No. 2014-6. Seattle, WA: Center for Education, Data, and Research.
- Lovenheim, Michael. 2011. "The Effect of Liquid Housing Wealth on College Enrollment." *Journal of Labor Economics* 29(4): 741–771.
- Maguire, Sheila, Joshua Freely, Carol Clymer, Maureen Conway, and Deena Schwartz. 2010. *Tuning into Local Labor Markets*. Philadelphia: Private/Public Ventures.
- Mincer, Jacob. 1974. *Schooling, Experience and Earnings*. New York: Columbia University Press.
- Mishel, Lawrence. 2010. *Reasons for Skepticism about Structural Unemployment*. Washington, DC: Economic Policy Institute.
- National Conference of State Legislatures. 2014. "Performance-Based Funding for Higher Education." Washington, DC: National Conference of State Legislatures. <http://www.ncsl.org/research/education/performance-funding.aspx> (accessed August 26, 2014).
- National Governors Association. 2013. *State Sector Strategies Coming of Age*. Washington, DC: Center for Best Practices.
- Neumark, David, ed. 2007. *Improving the School-to-Work Transition*. New York: Russell Sage.
- O'Leary, Christopher, Robert A. Straits, and Stephen A. Wandner, eds. 2004. *Job Training Policy in the United States*. Kalamazoo, MI: W.E. Upjohn Institute for Employment Research.
- Roder, Anne, and Mark Elliott. 2011. *A Promising Start: Year Up's Initial Impacts on Low-Income Young Adult Careers*. New York: Economic Mobility Corporation.
- Rosenbaum, James. 2001. *Beyond College for All*. New York: Russell Sage.
- Scott-Clayton, Judith. 2011. "The Shapeless River: Does a Lack of Structure Inhibit Students' Progress at Community Colleges?" New York: Center for Community College Research, Columbia University.
- Symonds, William C., Robert B. Schwartz, and Ronald F. Ferguson. 2011. *Pathways to Prosperity: Meeting the Challenge of Preparing Young Americans for the 21st century*. Cambridge, MA: Pathways to Prosperity Project, Harvard Graduate School of Education.

- U.S. Department of Education, Office of Vocational and Adult Education. 2004. *National Assessment of Vocational Education, Final Report*. Washington, DC: U.S. Department of Education.
- U.S. Government Accountability Office. 2011. *Multiple Employment and Training Programs: Providing Information on Colocating Services and Consolidating Administrative Structures Could Promote Efficiencies*. Washington, DC: U.S. Government Printing Office.
- Zinn, Rachel, and Andy Van Kluenen. 2014. "Making Workforce Data Work." Washington, DC: National Skills Coalition.

