

Learning and Earning:

How to Raise the Labor Market Skills of Low-Income Adults

Harry J. Holzer

McCourt School of Public Policy

Georgetown University

March 2014

Prepared for the conference on “Innovating to End Urban Poverty,” sponsored by the Bedrosian Center on Governance and the Public Enterprise and the Price Center for Social Innovation, University of Southern California, March 27-28, 2014.

I. What is the Problem?

It is now widely acknowledged in the U.S. that the best way to raise the incomes of low-income adults would be to raise their labor market skills. In a world where skills are more highly rewarded in the job market than ever before, and where income support for the nonworking poor is very limited, the need to raise skills and earnings among low-income workers is widely acknowledged. Of course, not everyone will necessarily benefit from schooling or job training; but, for those who can, the need to expand successful education and training options for low-income adults should be one of our highest priorities.

Having said that, there is surprisingly little consensus on how we should do so. Roughly half a century of experience with job training programs for the poor, along with enormous amounts of rigorous evaluation, have generated quite mixed results on their effectiveness for this population. Some noted commentators tend to dismiss workforce development efforts completely, and urge that the resources instead be spent on early childhood education programs.¹ Others have argued that, in a changing labor market, the rewards for training short of a college diploma have diminished.² Perhaps for these reasons, our public expenditures on workforce programs for the poor have declined dramatically since 1980.³

On the other hand, we send more low-income youth and adults to college than ever before, with many pursuing “occupational” degrees or certificates at both community and 4-year colleges. Pell grant expenditures have risen dramatically since 2000 and especially in the past five years. Indeed, one could argue that community colleges have become the nation’s new job training system for the disadvantaged, with Pell grants as its primary funding mechanism.⁴

¹ See Holzer (2013) for a review of what we have learned from evaluations of job training programs since the 1960s. Nobel Laureate James Heckman (2008), among others, has often argued that workforce development programs are ineffective, and that public funding should be allocated towards early childhood education, though more recently (Heckman and Kautz, 2013) he acknowledges that some can affect the non-cognitive skills of participants.

² David Autor (2010) has argued that the middle-skill jobs of the economy are shrinking, and this has been interpreted to imply that education and training below the level of a Bachelor’s degree are losing their relative economic value, though he doesn’t necessarily agree with this interpretation (see Autor and Dorn, 2013). Holzer (2010) argues that the middle-paying jobs that are disappearing are those that pay well for high school graduates and dropouts, like production and clerical jobs, while demand for middle-skill jobs that require some postsecondary below 4-year degree (like health technology) remains fairly strong. There has also been some evidence of a continuing shrinkage of demand in middle-skill jobs because of the Great Recession (e.g., Jaimovich and Siu, 2011) but it is still unclear how much of this shrinkage is permanent.

³ Holzer (2013) notes that federal expenditures on programs run by the U.S. Department of Labor have declined by 80-90 percent since they peaked at the end of the Carter administration. A report by the US General Accountability Office (2011) notes that federal workforce expenditures are spread over 47 different programs and total about \$16B each year, though most of these programs are quite small and the total does not match the real expenditures of the late 1970s (or spending relative to GDP).

⁴ See Thomas Bailey and Clive Belfield (2013) for definitions of occupational education in community colleges. Total spending on Pell grants is now about \$36B per year, or roughly twice the total federal spending on other workforce

But here, too, student outcomes are fairly mixed. Completion rates among Pell recipients, and low-income youth and adults more broadly, appear to be very low, especially at the community colleges and the lower tiers of four-year colleges and universities at which low-income students are heavily concentrated. And, when they complete degrees or certificates, they are not always in the fields that tend to be well-compensated in the job market.⁵

Below, I outline a set of policies that I believe would improve the attainment of postsecondary credentials with labor market value among the poor. Some involve workforce development programs and institutions, and others target higher education; indeed, it is my belief that these public institutions should be much better coordinated and integrated with each other and with the labor market. Since public resources (especially at the federal level) will remain quite limited for many years (or decades) to come, we need to reform existing programs and leverage private sector funds, wherever possible. Some rigorous evaluation evidence also exists to support these efforts, though much further experimentation and evaluation will be needed to figure out more clearly what is cost-effective in this realm.

II. Some Policy Options

The policy options I recommend below include the following:

- Expansion of high-quality career and technical education (CTE) for young adults;
- Expanding sectoral training and career pathway programs;
- Reforming financial aid and remediation in higher education; and
- Better integrating higher education and workforce development programs.

A. Expand High-Quality CTE for Young Adults

Vocational education in the U.S. has been stigmatized for several decades as a low-quality educational option for young people not bound for higher education. Starting in the 1960s, vocational education has been attacked as a way of tracking low-income and/or minority students away from college, and thus permanently lowering their opportunities relative to those of whites/middle class.

programs. Even if one excludes Pell support for more traditional academic programs, it funds as much or more on occupational programs than do all of the federal workforce programs.

⁵ Completion rates at American colleges have been declining as enrollment rises, but completion rates are highly correlated with average quality of the institution (as measured by student test scores), even controlling for the quality of the students (Bound et al., 2009). For the relative economic returns to credentials in different fields see Carnevale et al. (2012) or Jacobson and Mokher (2009).

But it needn't be so. CTE options in Europe, especially in Germany and Scandinavian countries, show that good jobs can be made available to those who graduate from secondary school with strong technical skills. And a variety of CTE models have been developed in the U.S. that prepare high school students for both college and careers, rather than one or the other.⁶

While many of these efforts begin in the secondary schools for high school students, they are not limited to these schools and these students; indeed, a range of newer models also provide these options for young adults at community colleges and other venues. For adults, and especially those with custody of children, it is critically important to provide paid work experience on top of classroom schooling during the early parts of their careers. In addition, the academic benefits of *contextual education*, including work-based or project-based learning, for those who do not succeed in more traditional classrooms have been emphasized as well.⁷

Accordingly, a set of models generally referred to as *learning while earning* have been developed to provide work-based learning for young adults, on their way to gaining a postsecondary credential. These include apprenticeships, internships, and co-op education, among others.

For instance, apprenticeships are being expanded in a number of states, like North and South Carolina, often with support of foreign-owned (especially German) companies.⁸ Apprenticeship schools are being developed in a number of industries which provide associate degrees to those who complete a range of courses plus work experience.⁹ Evaluation evidence suggests that the post-program earnings of participants are significantly enhanced as a result of these efforts. And apprenticeships cost relatively little, in terms of public funds, since employers pay apprentices wages and benefits (though usually at below-market levels) for their work.¹⁰

Of course, to ensure that these programs serve lower-income young adults, efforts must be made to reach out to the low-income or disadvantaged populations, and perhaps to provide pre-apprenticeship skill-building to prepare them for the technical rigors of these programs.¹¹

⁶ See Symonds et al. (2011) and Holzer et al. (2013) for discussions of the value of career and technical education and the range of high-quality "pathways" they can create for all students, including those bound or not bound for college. At the high school level, the evaluations of the Career Academies show strong and lasting impacts on the earnings of at-risk young men. Other promising models include Linked Learning in California and High Schools that Work in the South.

⁷ See Lerman (2013) for a discussion of contextual education and its potential benefits.

⁸ See Schwartz (2013) or Schneider (2013).

⁹ See Holzer et al. (2013) for a discussion of an apprenticeship school in shipbuilding that awards associate degrees in Virginia.

¹⁰ Economists have long argued that employers will pay relatively low wages when they are training new workers, especially when the training is fairly general in nature. See Becker (1993) or Mincer (1974).

¹¹ See Reed et al. (2012) for evidence on the economic rewards to apprenticeship, and Conway and Gerber (2009) on pre-apprenticeship programs in construction for disadvantaged men.

Expansion of incumbent-worker training for entry-level employees might also accomplish some of this as well.¹²

B. Expand Sectoral and Career Pathway Programs

While career and technical education constitutes a particular mode of delivering education and work experience, are their particular content models that seem successful for training disadvantaged adults for good-paying jobs? The most promising models in this area are *sectoral* training and *career pathways*.

Sectoral training targets particular sectors of the economy that have strong demand for middle-skill workers and jobs that compensate these workers well. Examples of these sectors include health care, information technology, advanced manufacturing and construction. Intermediaries often develop expertise in one or more industries, and work closely with employers to provide training to fit their needs. The intermediaries generally develop the trust of the employers at providing highly skilled workers, who then provide jobs directly for the trainees. The latter, in return, might be more motivated to succeed, since they see the jobs that await them after training.

Rigorous evaluation has already established that these programs can be extremely cost-effective for both youth and adults. But questions remain about our ability to replicate and scale the best programs, and about whether the early post-program gains for workers are maintained over time, especially when some change jobs and industries.¹³ It is also important to make sure that these approaches at least partially target disadvantaged workers, rather than the middle-class workers whom employers would likely prefer to hire.

Career pathway models tend to focus more on specific occupational ladders rather than industries. They usually involve a range of career steps involving a sequence of courses of studies and jobs. For instance, a career pathway in nursing might first take a student to a certificate in Licensed Practical Nursing (LPN) on their way to becoming Registered Nurses (RN). Contextual learning is a major goal of these programs, as is the attainment of “stackable credentials” which can lead to employment in the short-term but which can also be supplemented with additional education and credential attainment over time.

¹² See Hollenbeck (2008) for a discussion of incumbent worker training programs at the state level and their economic value.

¹³ See Maguire et al. (2010) for evidence from random assignment studies on three local sectoral training programs for adults that strongly raise earnings for adults for at least two years. Roder and Elliott (2013) provide similar evidence for Year Up, a program that targets at-risk youth with at least a high school diploma or a GED. These programs generally outperform training funded by the Workforce Investment Act (WIA), though the latter tend to be cost-effective too (Heinrich et al. 2009). The sectoral programs tend not to admit the hardest-to-employ candidates with low basic skills. Also, the Center for Employment and Training (CET) in San Jose was an early sectoral program that was very successful but was much less successful when the U.S. Department of Labor attempted to replicate it around the country (Miller et al., 2005).

But little evaluation evidence exists to date on the career pathway models. A number of states are moving to develop both sectoral models and career pathways, through partnerships between industry associations, workforce agencies and providers of higher education or training. But many questions remain about how to develop systems of career pathways. It seems especially challenging to develop career pathway models that are flexible enough to respond to dynamic labor markets, in which high-demand occupations or industries today might shrink tomorrow in response to technology changes and/or globalization.¹⁴ Providing credentials that are “portable” across firms and sectors as well as stackable is thus a major goal as well.

C. Reforming Financial Aid and Remediation

Given the large numbers of low-income youth and adults attending college in the U.S., at a great deal of both private and public expense, it is extremely important to improve the low rates at which these individuals successfully complete their programs of study. To do so, we might need reforms in both financial aid, including Pell grants, and also in remediation programs in 2-year and 4-year schools.

Some potential reforms in the federal Pell grant program have been outlined in a recent College Board report.¹⁵ These reforms would make Pell grant applications much simpler and more transparent; but they would also require more supportive services to be available to aid recipients, and also stronger incentives for improved performance on their part, and on the part of the institution as well.

For instance, the report suggests that all students above a certain age be required to obtain career counseling before they begin their studies, and periodically while they are enrolled.¹⁶ This would presumably help students pick appropriate fields of study, which they would be better able to complete, and also fields in which jobs are available and provide adequate compensation for them. Students would also be required to maintain certain levels of academic performance in order to remain eligible for their grants over time.¹⁷

Furthermore, the institutions receiving the Pell might also be required to provide such services, along with data on student completion rates and earnings afterwards. Some recently proposed federal legislation would seek to make such data more widely available to students at all colleges and universities.¹⁸ A number of states have also begun experimenting with tying their rates of

¹⁴ See Fein (2012).

¹⁵ See Baum et al. (2013), a report written by a group of 14 coauthors including myself.

¹⁶ One way of getting career counseling to Pell recipients that we recommended in our report is to require or incentivize them to visit One-Stop offices funded by the Workforce Investment Act. This would, of course, require greater quality of One-Stop staff and capacity overall.

¹⁷ Ibid.

¹⁸ Senator Wyden (D-OR) has introduced The Student Right to Know Before You Go Act, which would require colleges to publish extensive information about completion rates and labor market outcomes of their graduates.

higher education subsidy at state institutions to both completion rates and post-program earnings.¹⁹

Of course, poorly designed performance incentives can often lead to unanticipated consequences and gaming on the part of aid recipients. For instance, one can imagine colleges either raising their entry requirements, to raise completion rates, or perhaps lowering standards for completion in high-demand fields (like health care) to improve their outcomes. We therefore should move slowly to develop appropriate performance incentives that would minimize these possible responses.

Remediation efforts at our colleges and universities (often called “developmental education”) also need reform. Currently, many students get stuck in remedial classes (often to meet requirements like passing Algebra I) before they are allowed to take any courses for credit, and many drop out before completing them. Indeed, there is mixed evidence on whether or not such remediation in its current form has positive or negative effects on academic outcomes, including completion rates.²⁰

But some evidence is beginning to emerge on forms of remediation with better success rates. In general, more rapid forms of remediation seem more successful, as well as remediation more directly linked to labor market information or training. In the latter realm, two models stand out: 1) The Integrated Basic Education and Skill Training (I-BEST) program in Washington State; and 2) The GED Bridge Program at LaGuardia Community College in New York.

The I-BEST program integrates remediation directly into occupational training classes. Two instructors are provided in each class, with one providing remediation whenever it is needed to proceed with the actual training. The GED Bridge program provides students with labor market information and contexts, so that students can better see the links between the skills they are learning and their ultimate labor market use. Some preliminary evidence suggests that both have been successful in improving academic performance among participating students.²¹

More broadly, providing more structure and guidance to community college students, and helping them with transitions to newer courses of study, other academic institutions or the job market, would likely improve their completion rates and earnings as well.²²

¹⁹ See the National Conference of State Legislatures (NCSL, 2012) summary of the many states that have begun to condition some part of their higher education subsidies to outcomes generated by their 2-year and 4-year colleges.

²⁰ See Bettinger et al. (2013) and Clotfelter et al. (2013).

²¹ See Zeidenberg et al. (2010) and Hutchens and Fader-Smith (2013).

²² See Scott-Clayton (2011), Rosenbaum et al. (2006), and Jenkins and Cho (2012).

D. Integrating Higher Education and Workforce Development Programs

Several of the proposed reforms listed above suggest that higher education must be more closely linked to the labor market, and perhaps to certain kinds of workforce development services like career counseling and information about earnings for various fields of study.

More broadly, this should be an explicit goal of policy. Many students at colleges today, especially community colleges, obtain very little *information* and guidance about the world of work which awaits them; and their institutions currently face little *incentive* to provide such guidance. Indeed, these institutions also have little incentive to expand instructional capacity in high-demand fields like health care or information technology, given that the state subsidies on which they rely so heavily are uniformly based on student enrollments across fields (regardless of completion rates) while the costs of equipment and instructors in these fields can often be quite high.

In recent years, a number of competitive grant programs from the U.S. Departments of Education and Labor have been developed to try to bridge these gaps. Some are jointly administered by the two departments, while others are from one or the other but seek to improve the links between higher education institutions and the labor market.²³ Furthermore, the One-Stop offices funded by the Department of Labor are increasingly being collocated on community college campuses, so that students attending the former can have easy access to the latter; and local and state Workforce Investment Boards (or WIBs) include representatives of higher education to better coordinate federal job training funding with the world of higher education.

Still, much more could be done in this area. In a recent paper (Holzer, 2011), I proposed a new federal grants program to assist and incent states in their efforts to integrate higher education with workforce systems and the labor market. The grants, perhaps modeled on the Race to the Top program to incent state-level reforms in its K-12 system, would provide generous funding to states that expand their CTE offerings, and provide incentives for its state colleges to respond to job market trends. The grants would especially reward states that target their disadvantaged populations for higher education efforts that are closely linked to occupations and industries that pay well and appear to have strong labor demand.

III. Conclusion

The policy recommendations listed above embody certain common themes about how to raise the skills of low-income adults. These themes broadly include the need to better integrate the various programs of study in higher education, especially community colleges (and supports like financial aid and remediation for the disadvantaged) to workforce services and information about the labor market. More broadly, higher education programs and institutions should be better

²³ Important grant programs include the Trade and Adjustment Assistance Community College to Career Training (TAACCCT), based on a \$2B funding stream; and the Workforce Innovation Funds administered by the U.S. Department of Labor.

integrated with workforce development, and both should be more responsive to labor market changes, and to occupations and industries of strong demand. It is also important that these programs maintain some focus on the disadvantaged, while not becoming stigmatized in the eyes of most Americans and especially employers.

But several caveats should be mentioned. First, the U.S. labor market has been changing quite dramatically in recent years. In the aggregate, it has been relatively weak ever since the Great Recession began at the end of 2007, and training is not necessarily a substitute for job availability. Indeed, education and training work best when demand in skilled occupations is relatively strong. Still, on average those with the education and training clearly do better, even in a weak labor market, than those without. While there has also been some shrinkage in demand in middle-skill jobs during the recession, on top of the shrinkage that occurred earlier, demand for those with postsecondary credentials and especially in technical fields has remained relatively strong. And, since demand for workers by occupation and industry can shift rapidly in our dynamic labor markets, students must have strong general skills as well as those more specific to their sector, if and when they need to change firms and sectors.

Second, the adage “one size doesn’t fit all” is clearly relevant here. The most successful training programs, like the sectoral ones that have been evaluated, clearly require that students be able to hand technical material at the postsecondary level. These programs will not be successful (or even open to) many of the hardest to employ, especially high school dropouts and others with very poor basic skills or work experience. For the latter group, we have much less evidence on what works to improve their labor market performance, except perhaps for subsidies that enhance earnings on very low-wage jobs.²⁴

Third, we have had some great difficulty replicating and scaling the most successful models described above. For instance, the quite successful Center for Employment and Training (CET) in San Jose was not successful when it was reproduced by the US Department of Labor in the late 1990s (see Footnote 13). Whether or not the best sectoral programs described above will suffer the same fate is not yet clear. Many states have built workforce systems around sectoral models and career pathways, but we do not yet have rigorous evidence on the extent to their success.

Fourth, public funding of any new initiatives will be extremely limited in the foreseeable future. The only way to fund any new efforts is through reforms or reallocation of existing funding (which is always difficult politically) and/or by leveraging private sector investments.

Despite these caveats, there is also some basis for encouragement moving ahead with these ideas. Many states have begun to consider reforms in how they fund higher education, and on how to

²⁴ For instance, in the Employment Retention and Advancement (ERA) project evaluated by MDRC, most training interventions were not successful at improving employment and earnings among the hard-to-employ, but earnings subsidies in a few sites in Texas were more successful. See Hamilton and Scrivener. (2012).

incent better completion rates and labor market success, especially among the disadvantaged. While there remains much to be learned, the process has started. Furthermore, there is broad political support for some activity in this area, especially among employers who find it difficult to recruit and retain skilled workers right now, and who worry a great deal about their ability to do so after the Baby Boomers retire (and are mostly replaced by relatively unskilled immigrants).

Whatever is done, there is a need to continue the innovation and evaluation efforts that have been heavily supported by private foundations and by the federal government in the past several years. This process will hopefully encourage further innovation in this area, while we all get a better sense of what works and what doesn't at improving skills among the disadvantaged, at what cost, and for whom.

REFERENCES

- Autor, David. 2010. "The Polarization of Job Opportunities in the U.S. Labor Market." Center for American Progress, Washington DC.
- Autor, David and David Dorn. 2013. "How Technology Wrecks the Middle Class." *The New York Times*, August 25.
- Bailey, Thomas and Clive Belfield. 2013. "Community College Occupational Degrees: Are They Worth It?" In L. Perna ed. *Preparing Today's Students for Tomorrow's Jobs in Metropolitan America*. Philadelphia: University of Pennsylvania Press.
- Baum, Sandy et al. 2013. *Rethinking Pell Grants*. Washington DC: The College Board.
- Becker, Gary. 1993. *Human Capital*. Chicago: University of Chicago Press.
- Bettinger, Eric; Angela Boatman and Bridget Terry Long. 2013. "Student Supports: Developmental Education and Other Academic Programs." *The Future of Children*. Vol. 23, No. 1, 93-116.
- Bound, John; Michael Lovenheim and Sarah Turner. 2009. "Why Have College Completion Rates Declined? An Analysis of Changing Student Preparation and Collegiate Resources." NBER Working Paper No. 15566.

Carnevale, Anthony; Tamara Jayasundara and Andrew R. Hanson. 2012. *Five Ways That Pay Along the Way to the B.A.* Center for Education and the Workforce, Georgetown University.

Clotfelter, Charles; Helen Ladd, Clara Muschkin and Jacob Vigdor. 2013. "Developmental Education in North Carolina Community Colleges." CALDER Postsecondary Working Papers, American Institutes for Research.

Conway, Maureen and Allison Gerber. 2009. "Construction Pre-Apprenticeship Programs: Results from a National Survey." Aspen Institute, Washington DC.

Fein, David. 2012. *Career Pathways as a Framework for Program Design and Evaluation: A Working Paper from The Innovative Strategies for Increasing Self-Sufficiency (ISIS) Project.* Office of Planning, Research and Evaluation. U.S. Department of Health and Human Services. Washington DC.

Hamilton, Gayle and Susan Scrivener. 2012. *Increasing Employment Stability and Earnings for Low-Wage Workers: Lessons from the Employment Retention and Advancement (ERA) Project.* New York, MDRC.

Heckman, James. 2008. "Schools, Skills and Synapses." NBER Working Paper.

Heckman, James and Tim Kautz. 2013. "Fostering and Measuring Skills: Interventions That Improve Character and Cognition." IZA Discussion Paper.

Heinrich, Carolyn J. & Mueser, Peter R. & Troske, Kenneth & Jeon, Kyung-Seong & Kahvecioglu, Daver C., 2009. "New Estimates of Public Employment and Training Program Net Impacts: A Nonexperimental Evaluation of the Workforce Investment Act Program," IZA Discussion Papers 4569.

Hollenbeck, Kevin. 2008. "Is There a Role for Public Support of Incumbent Worker On-the-Job Training?" W.E. Upjohn Institute for Employment Research.

Holzer, Harry J. 2013. "The War on Poverty's Workforce Development Programs." In M. Bailey and S. Danziger eds. *The Legacy of the War on Poverty.* New York: Russell Sage Foundation.

Holzer, Harry J. and Erin Dunlop. 2013. "Nothing But the Facts Ma'am: Postsecondary Education and Labor Market Outcomes in the U.S." CALDER Postsecondary Working Paper, American Institutes for Research.

Holzer, Harry J. 2010. *Is the Middle of the Job Market Really Disappearing?* Center for American Progress, Washington DC.

Holzer, Harry J. 2011. *Raising Job Quality and Skills for American Workers: Creating More Effective Education and Workforce Development Systems in the States.* Hamilton Project, Brookings Institution, Washington DC.

Holzer, Harry J.; Dane Linn and Wanda Monthey. 2013. *The Promise of High-Quality Career and Technical Education*. The College Board, Washington DC.

Hutchens, John and Randy Fader-Smith. 2013. *New Study Shows LaGuardia Community College's GED Bridge Program Significantly Boosts GED Pass Rates and College Enrollment*. New York, MDRC.

Jacobson, Louis and Christine Mokher. 2009. *Pathways to Boosting the Earnings of Low-Income Students by Increasing Their Educational Attainment*. CNA, Washington DC.

Jaimovich, Nir and Henry Siu. 2012. "The Trend is the Cycle: Job Polarization and Jobless Recoveries." NBER Working Paper No. 18334

Jenkins, Davis and Sung-Woo Cho. 2012. "Get With the Program: Accelerating Community College Students' Entry Into and Completion of Programs of Study." Community College Research Center, Columbia University.

Lerman, Robert. 2013. "Should Employer-Led Training be the Framework for Workforce Development?" Unpublished paper, The Urban Institute.

Maguire, Sheila; Joshua Freely, Carol Clymer, Maureen Conway and Deena Schwartz. 2010. *Tuning Into Local Labor Markets: Findings from the Sectoral Employment Study*. Philadelphia: PPV.

Miller, Cynthia; Johannes Bos, Kristin Porter, Fannie M. Tseng, Yasuyo Abe. 2005. *The Challenge of Repeating Success in a Changing World: Final Report on the Center for Employment Training Replication Sites*. New York: MDRC.

Mincer, Jacob. 1974. *Schooling, Experience and Earnings*. New York: National Bureau of Economic Research.

National Conference on State Legislatures. 2012. "Performance-Based Funding for Higher Education in the States." <http://www.ncsl.org/research/education/performance-funding.aspx>

Reed, Deborah et al. 2012. *An Effectiveness Assessment and Cost - Benefit Analysis of Registered Apprenticeship*. Mathematica Policy and Research, Washington DC.

Roder, Anne and Mark Elliott. 2012. *A Promising Start: Year Up's Initial Impact on the Earnings of Young Adults*. Economic Mobility Corporation, New York.

Rosenbaum, James; Regina Deil-Amen and Ann Persons. 2006. *After Admission: From College Access to College Success*. New York: Russell Sage Foundation.

Schneider, Howard. 2013. "Recasting high school, German firms transplant apprentice model to U.S." The Washington Post, November 27.

Schwartz, Nelson. 2007. "Recasting high school, German firms transplant apprentice model to U.S." *The New York Times*, November 30.

Scott-Clayton, Judith. 2011. "The Shapeless River: Does a Lack of Structure Inhibit Students' Progress at Community Colleges?" Community College Research Center, Columbia University.

Symonds, William; Robert Schwartz and Ronald Ferguson. 2011. *Pathways to Prosperity*. Graduate School of Education, Harvard University.

United States Government Accountability Office. 2011. *Multiple Employment and Training Programs: Providing Information on Colocating Services and Consolidating*. Washington DC.

Zeidenberg, Matthew; Sun Woo Cho and Davis Jenkins. 2010. "Washington State's Integrated Basic Education and Skills Training (I-BEST) Program: New Evidence of Effectiveness." Community College Research Center, Columbia University.