THE HAMILTON PROJECT

Proposal 7: Expanding Apprenticeship Opportunities in the United States

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Introduction

Reducing inequality and expanding opportunity are central challenges increasingly acknowledged by leaders across the political spectrum. Policymakers generally agree that one key solution is to prepare young people and adults with the skills to earn a good income. Unlike other advanced countries, however, reform proposals in the United States have typically included little or nothing about apprenticeship—a highly cost-effective mechanism for developing workplace skills and for reducing youth unemployment. However, interest in apprenticeship models is building in the United States, partly because of the recent successes of Britain and South Carolina in stimulating major expansions of apprenticeship training. A robust apprenticeship system is especially attractive because of its potential to reduce youth unemployment, improve the transition from school to career, upgrade skills, raise wages of young adults, strengthen a young worker's identity, increase U.S. productivity, achieve positive returns for employers and workers, and use limited federal resources more effectively.

Apprenticeship prepares workers to master occupational skills and achieve career success. Under apprenticeship programs, individuals undertake productive work for their employer, earn a salary, receive training primarily through supervised work-based learning, and take academic instruction that is related to the apprenticeship occupation. The programs generally last from two to four years. Apprenticeship helps workers to master not only relevant occupational skills, but also other work-related skills, including communication, problem solving, allocation of resources, and dealing with supervisors and a diverse set of coworkers. The course work is generally equivalent to at least one year of community college. Completing apprenticeship training yields a recognized and valued credential attesting to mastery of skill required in the relevant occupation. Unlike the normal part-time jobs held by high school and college students, apprenticeship integrates what young people learn on the job and in the classroom. Box 7-1 describes a successful youth apprenticeship program in Georgia.

In some ways, apprenticeship offers an alternative to the "academic-only" college focus of U.S. policymakers. Increasingly, placing all of our career-preparation eggs in one basket is leaving young adults, especially minority young men, well behind. Among young adults ages twenty-five to thirty-four in 2013, 49 percent of all women and 37 percent of African American women had earned at least an Associate degree; for men, the comparable figures were 40 percent and 28 percent, respectively.[1] Furthermore, in 2011–12, nearly two African American women earned a bachelor's degree for every African American male who earned one (National Center for Education Statistics 2013). Despite the well-documented high average returns to college, variations in interests, capacities, and learning styles suggest many young people would benefit far more from alternative pathways to rewarding careers than they do from academic-only pathways.

Apprenticeship can narrow the postsecondary achievement gaps in both gender and race. Having learning take place mostly on the job, making the tasks and classroom work highly relevant to their careers, and providing participants with wages

BOX 7-1.

The Georgia Youth Apprenticeship Program

In 1992, the Georgia General Assembly passed a law directing the Departments of Education, Labor, and Technical Adult Education to develop and implement youth apprenticeship programs by 1996. Today, the program operates successfully with more than 7,000 participants.

During their freshman and sophomore years of high school, students learn about the possibility of joining the apprenticeship program as juniors and seniors. Students can then apply to participate in a structured program of at least 2,000 hours of work-based training and 144 hours of related coursework. Apprentices complete not only their high school diploma, but also a postsecondary certificate or degree, and certification of industry-recognized competencies applicable to employment in a high-skill occupation. The fields vary widely from energy to information technology, manufacturing, and transportation and logistics. Mentorship is a key part of the program, as are employer evaluations of the student's job performance and the building of professional portfolios. As of 2009, more than 7,000 students in Georgia were participating in a youth apprenticeship.

High schools are responsible for recruiting and counseling students, supporting career-focused learning, and assisting in identifying industry partners. Postsecondary schools participate in developing curriculum and dual credit arrangements. Businesses offer apprenticeship positions, provide each apprentice with a worksite supervisor, and ensure that apprentices gain experience and expertise in all the designated skill areas. The worksite supervisors must participate in mentor orientation and training so that they can guide students through all the skill areas and serve as coaches and role models. Parents must agree to and sign an educational training agreement and provide transportation to the student. Finally, apprentices must maintain high levels of attendance and satisfactory progress in classes (both academic and career-oriented) and in the development of occupational skills at the worksite.

Employers report high levels of satisfaction with the apprentices and the apprenticeship program. Over 95 percent say the program has been highly beneficial to the company and that they would recommend the program to other companies. Participating companies also report good quality student performance in problem-solving and communication skills. There has been no rigorous evaluation of the impact of apprenticeship participation on students in Georgia, but participation has been growing among both companies and students.

while they learn are especially beneficial to men, particularly minority men. Apprenticeship can give minorities increased confidence that their personal efforts and investment in skill development will pay off, giving graduates a genuine sense of occupational identity and occupational pride.

Additionally, apprenticeship is a useful tool for enhancing youth development. Young people work with natural adult mentors who offer guidance but allow youth to make their own mistakes (Halpern 2009). Youth see themselves judged by the established standards of a discipline, including deadlines and the genuine constraints and unexpected difficulties that arise in the profession. Supervisors provide the close monitoring and frequent feedback that helps apprentices keep their focus on performing well at the work site and in the classroom.

Furthermore, apprenticeship is distinctive in enhancing both the worker supply side and the employer demand side of the labor market. On the supply side, the financial gains to apprenticeship are strikingly high. U.S. studies indicate that apprentices do not have to sacrifice earnings during their education and training and that their long-term earnings benefits exceed the gains they would have accumulated after graduating from community college (Hollenbeck 2008). The latest reports from the state of Washington show that the gains in earnings from various education and training programs far surpass the gains from all other alternatives (Workforce Training and Education Coordinating Board 2014). A broad study of apprenticeship in ten states also documents large and statistically significant earnings gains from participating in apprenticeship programs (Reed et al. 2012).

On the demand side, employers can feel comfortable upgrading their jobs knowing that their apprenticeship programs will ensure an adequate supply of well-trained workers. High levels of apprenticeship activity in Australia, Canada, and Britain demonstrate that even companies in labor markets with few restrictions on hiring, firing, and wages are willing

to invest in apprenticeship training. While no rigorous evidence is available about apprenticeship's costs and benefits to U.S. employers, research in other countries indicates that employers gain financially from their apprenticeship investments (Lerman 2014).

In general, firms reap several advantages from their apprenticeship investments. They save significant sums in recruitment and training costs, in reduced errors in placing employees, in excessive costs when the demand for skilled workers cannot be quickly filled, and in all employees being well versed with company procedures. One benefit to firms that is rarely captured in studies is the positive impact of apprenticeship on innovation. Well-trained workers are more likely to understand the complexities of a firm's production processes and therefore to identify and implement technological improvements, especially incremental innovations to improve existing products and processes. A study of German establishments documents this connection and finds a clear relationship between the extent of in-company training and subsequent innovation (Bauernschuster, Falck, and Heblich 2009). In the United States, evidence from surveys of more than 900 employers indicates that the overwhelming majority of them believe their programs are valuable and involve net gains (Lerman, Eyster, and Chambers 2009). Nearly all sponsors reported that apprenticeship programs help them meet their skill demands—87 percent reported that they would strongly recommend registered apprenticeship programs, and another 11 percent recommended apprenticeship programs with some reservations. Other benefits of apprenticeship include reliably documenting appropriate skills, raising worker productivity, increasing worker morale, and reducing safety problems.

While apprenticeship offers a productivity-enhancing approach to reducing inequality and expanding opportunity, activity in the United States has declined in recent years to levels about one-tenth of those in Australia, Canada, and Britain. Some believe the problems include inadequate information and familiarity with apprenticeship, an inadequate infrastructure, and expectations that sufficient skills will emerge from community college programs. Others see the main problem as an unwillingness of U.S. companies to invest, no matter how favorable government subsidies and marketing policies are. In considering these explanations, we should remember that even in countries with robust apprenticeship systems, only a minority of firms actually hires apprentices. Since the number of apprenticeship applicants already far exceeds the number of apprenticeship slots, the main problem today is to increase the number of apprenticeship openings that employers offer. Counseling young people about potential apprenticeship opportunities is a sensible complementary strategy to working with the companies, but encouraging interest in apprenticeship could be counterproductive without a major increase in apprenticeship slots.

Developing a more robust support system for apprenticeship programs requires action at various levels of government. This proposal consists of a series of targeted initiatives that rely on both state and federal support. At the state level, governments could develop marketing campaigns to persuade employers to create apprenticeship programs, and to build on existing youth apprenticeship programs. At the federal level, the government could provide federal subsidies to encourage take-up of existing vouchers for apprenticeship programs; designate occupational standards for apprenticeship through a joint Office of Apprenticeship (OA)–Department of Commerce (Commerce) team; and develop an infrastructure of information, peer support, and research within the Departments of Commerce and Labor.

The Challenge

Today apprentices make up only 0.2 percent of the U.S. labor force, far less than in Canada (2.2 percent), Britain (2.7 percent), and Australia and Germany (3.7 percent). In addition, government spending on apprenticeship programs is tiny compared with spending by other countries and spending on less-effective career and community college systems that provide education and training for specific occupations. While total annual government funding for apprenticeship in the United States is only about $100 to $400 per apprentice, federal, state, and local annual government spending per participant for two-year public colleges is approximately $11,400 (Cellini 2012). Not only are government outlays sharply higher, but the cost differentials are even greater after accounting for the higher earnings (and associated taxes) of apprentices compared to college students. Given these data, at least some of the low apprenticeship penetration can be attributed to a lack of public effort in promoting and supporting apprenticeship and to heavy subsidies for alternatives to apprenticeship.

However, the historical reasons for apprenticeship's low penetration in the United States are less important than the potential for future expansion.[2] Recent experiences in Britain and in selected areas of the United States suggest grounds for optimism, but the barriers to expansion are significant.

One significant barrier is limited information about apprenticeship. Because few employers offer apprenticeship programs, most employers are unlikely to hear about apprenticeship from other employers or from workers in other firms. Compounding the problem is both the difficulty of finding information about the content of existing programs and the fact that developing apprenticeship programs is

complicated for most employers, often requiring technical assistance that is minimal in most of the country. The experiences in Britain and South Carolina (discussed below) demonstrate that effective marketing is critically important for expanding the number of firms offering apprenticeship programs.

A second barrier is employer misperceptions that apprenticeship will bring in unions. There is no evidence that adopting an apprenticeship program will increase the likelihood of unionization, but reports about such close links persist. A third barrier is the asymmetric treatment of government postsecondary funding, with college courses receiving financial support and courses related to apprenticeship programs receiving little financial support. Policies to reduce the government spending differentials between college subsidies and apprenticeship subsidies can help overcome this barrier.

Another significant complication to developing more apprenticeship opportunities is that U.S. apprenticeship programs are categorized in three different ways: registered apprenticeship with the Department of Labor's OA, unregistered apprenticeship, and youth apprenticeship. Official data generally fail to track unregistered apprenticeship; evidence suggests their numbers exceed those of registered apprenticeship.[3] Small youth apprenticeship programs operate in a few states. Furthermore, tiny budgets and an excessive focus on apprenticeship in the field of construction have hampered expansion of the registered apprenticeship system. The federal government spends less than $30 million annually to supervise, market, regulate, and publicize the system. Many states have only one person working under the OA. In sharp contrast, Britain spends about £1 billion (or about $1.7 billion) annually on apprenticeship, which would amount to nearly $8.5 billion in the United States after adjusting for population.

Unlike programs in Austria, Germany, and Switzerland, the apprenticeship system in the United States is almost entirely divorced from high schools and serves very few workers under the age of twenty-five. Only a few states, notably Georgia and Wisconsin, now operate youth apprenticeship programs that provide opportunities to youth ages sixteen to nineteen. State funding pays for coordinators in local school systems and sometimes for required courses not offered in high schools. In Georgia, 143 out of 195 school systems currently participate in the apprenticeship program, serving a total of 6,776 students. These apprentices engage in at least 2,000 hours of work-based learning, as well as 144 hours of related classroom instruction. The Wisconsin program includes one-year to two-year options for nearly 2,000 high school juniors and seniors, requiring from 450 to 900 hours in work-based learning and two to four related occupational courses. The program draws on industry skill standards and awards completers with a Certificate of Occupational Proficiency in the relevant field. Some students also receive technical college academic credit. In Georgia, the industry sectors offering apprenticeship range from business, marketing, and information management to health and human services and technology and engineering. The Wisconsin youth appenticeship programs are in food and natural resources, architecture and construction, finance, health sciences, tourism, information technology, distribution and logistics, and manufacturing.

A New Approach

Recent proposals by the administration and some members of Congress suggest apprenticeship expansion would require substantial government funding. To support apprenticeship, President Obama included $500 million per year for four years in his fiscal year 2015 budget. Senators Tim Scott (R-SC) and Corey Booker (D-NJ) have proposed providing tax credits to employers hiring apprentices. Though these steps are necessary, they may not be sufficient.

Building a robust apprenticeship system in the United States, even with new resources, will require branding at the state and/or federal levels and marketing at both the general level and the firm level. I suggest five strategies: two could be accomplished at the state level, and three would be the responsibility of the federal government.

THE STATE ROLE

Develop high-level and firm-based marketing initiatives

Britain's success in expanding apprenticeship positions from about 150,000 in 2007 to over 850,000 in 2013 offers one example for how to create successful national and decentralized marketing initiatives. Alongside various national efforts, including the National Apprenticeship Service and Sector Skills Councils, the British government provided incentives to local training organizations to persuade employers to create apprenticeship programs. A similar model could be developed in the United States. State governments could build a state marketing campaign together with incentives and technical support to community colleges and other training organizations to market apprenticeship at the individual firm level. However, simply marketing to firms through existing federal and state agencies may not work if the staff lacks the marketing dynamism, sales talent, and passion for expanding apprenticeship. Pay for performance is recommended: technical education and training organizations would earn revenue only for additional apprenticeship programs that each college or organization developed with employers.

Each apprenticeship slot stimulated by the college/training organization would increase the work-based component of the individual's education and training and would reduce the classroom-based component. Assume the work-based component amounts to 75 percent of the apprentice's learning program and the school-based courses are only 25 percent of the normal student course load: by allowing training providers to keep more than 25 percent of the standard full-time-equivalent (FTE) cost provided by federal, state, and local governments in return for providing the classroom component of apprenticeship, the community colleges and other training organizations would have a strong incentive to develop units to stimulate apprenticeship. State and local governments could provide matching grants to fund units within technical training organizations to serve as marketing arms for apprenticeship. The marketing effort should encourage government employers as well as private employers to offer more apprenticeship opportunities.

South Carolina's successful example involved collaboration between the technical college system—a special unit devoted to marketing apprenticeship programs—and a federal representative from the OA. With a state budget for Apprenticeship Carolina of $1 million per year, as well as tax credits to employers of $1,000 per year per apprentice, the program managed to stimulate a six-fold increase in registered apprenticeship programs and a five-fold increase in apprentices. Especially striking is that these successes—including 4,000 added apprenticeship opportunities—took place as the economy entered a deep recession and lost millions of jobs. The costs per apprentice totaled only about $1,250 each calendar year, including the costs of the tax credit.

Build on youth apprenticeship programs

State government spending on youth apprenticeship programs amounts to about $3 million in Georgia and $2 million in Wisconsin. Although these programs reach only a modest share of young people, the United States could make a good start on building apprenticeship programs if the numbers in Georgia could be replicated throughout the country. The focus would be on students who perform better in work-based settings than in purely school-based ones and who are less likely than the average student to attend a four-year college or complete a bachelor's degree. To create about 250,000 quality jobs and learning opportunities, the gross costs of such an initiative would be only about $105 million—about $450 per calendar year—or about 4 percent of current school outlays per student-year. Moreover, some of these costs would be offset by reductions in teaching expenses, as more students would spend more time in work-based learning and less time in high school courses. In all likelihood, the modest investment would pay off handsomely in the form of increased earnings and associated tax revenues, as well as reduced spending on educational and other expenditures.

A good place to start is with Career Academies, schools within high schools that have an industry or occupational focus. Over 7,000 Career Academies operate in the United States; these programs already include classroom-related instruction and sometimes work with employers to develop internships in fields ranging from health and finance, to travel and construction. Because a serious apprenticeship involves learning skills at the workplace at the employer's expense, the Academies would be able to reduce the costs of teachers relative to a full-time student. If, for example, a student spends two days per week in a paid apprenticeship, the school should be able to save at least 15 percent of its costs for that student. Applying these funds to marketing, counseling, and oversight for youth apprenticeship should allow the Academy or other school to stimulate employers to provide apprenticeship slots. Success in reaching employers will require a talented, business-friendly staff that is well trained in business issues and apprenticeship initiatives.

To implement this component, state governments should fund marketing and technical support to Career Academies to set up cooperative apprenticeship programs with employers, using either state or federal dollars. The first step should be planning grants for interested and capable Career Academies to determine who can best market to and provide technical assistance to the Academies. Next, state governments should sponsor performance-based funding to units in the Academies so they receive funds for each additional apprenticeship. Private foundations should offer resources for demonstration and experimentation in creating apprenticeship opportunities within high school programs, especially Career Academies.

THE FEDERAL ROLE

Extend use of current postsecondary and training subsidies to apprenticeship

Several postsecondary programs could be set up to subsidize at least the classroom portion of apprenticeship. Already, localities can use training vouchers from the Workforce Investment Act for apprenticeship programs. To encourage greater use of vouchers for apprenticeship, the federal government could provide one to two more vouchers to Workforce Investment Boards for each training voucher used in an apprenticeship program. Another step is to encourage the use of Trade Adjustment Act training subsidies to companies sponsoring apprenticeship, just as training providers receive subsidies for Act-eligible workers enrolled in full-time training. In addition, policies could allow partial payment of the Act's extended unemployment insurance to continue for employed individuals in registered apprenticeship programs.

Allowing the use of Pell Grants to pay at least for the classroom portion of a registered apprenticeship program makes perfect sense as well. Currently, a large chunk of Pell Grants pays for occupationally oriented programs at community colleges and for-profit career colleges. The returns on such investments are far lower than the returns on apprenticeship. The Department of Education can authorize experiments under the federal student aid programs (Olinsky and Ayres 2013), allowing Pell Grants for some students learning high-demand jobs as part of a certificate program. Extending the initiative to support related instruction (normally formal courses) in an apprenticeship could increase apprenticeship slots and reduce the amount that the federal government would have to spend to support these individuals in full-time schooling.

The GI Bill already provides housing benefits and subsidizes wages for veterans in apprenticeship programs. However, funding for colleges and university expenses is far higher than for apprenticeship. Offering half of the GI Bill college benefits to employers hiring veterans into an apprenticeship program could be accomplished by amending the law. Unless the liberalized uses of Pell Grants and GI Bill benefits are linked with an extensive marketing campaign, however, the take-up by employers is likely to be limited.

Designate best practice occupational standards for apprenticeships

To simplify the development of apprenticeship for potential employers, a joint OA–Commerce team should designate one or two examples of good practice with regard to specific areas of expertise learned at work sites and with regard to subjects learned through classroom components. The OA–Commerce team should select occupational standards in consultation with selected employers who hire workers in the occupation. Once selected, the standards should be published and made readily accessible. Employers who comply with these established standards should have a quick and easy path to the registration of the program. In addition, workforce professionals trying to market apprenticeship will have a model that they can sell and that employers can adopt, either as-is or after making modest adjustments. Occupational standards used in other countries can serve as starting points for the OA–Commerce team and for industry groups involved in setting standards and in illustrating curricula.

Develop a solid infrastructure of information, peer support, and research

The federal government should sponsor the development of an information clearinghouse, a peer support network, and a research program on apprenticeship. The information clearinghouse should document the occupations that currently use apprenticeship in the United States and in other countries, along with the list of occupation skills that the apprentices master. The clearinghouse should include the curricula for classroom instruction, the skills that apprentices should learn and ultimately master in the workplace, and up-to-date information on available apprenticeship slots and on applicants looking for apprenticeship opportunities. The development of the information hub should involve agencies within Commerce as well as in the OA.

The research program should cover topics especially relevant to employers, such as the return to apprenticeship from the employer's perspective and the net cost of sponsoring an apprentice after taking into account the apprentice's contribution to production. Other research should examine best practices for marketing apprenticeship programs, incorporating classroom and work-based learning by sector, and counseling potential apprentices.

COSTS AND BENEFITS

The proposals in this paper would involve only a modest amount of new funding, though some shift in the allocation of funds for the education and training marketplace would be necessary. To date, apprenticeship programs have not proven to be very expensive for the government; the majority of costs stem from the federal and state costs of administering apprenticeship programs, tuition paid by participants, instruction costs related to the academic portions of the programs, and those borne directly by taxpayers through higher spending or forgone tax revenue (Reed et al. 2012; Workforce Training and Education Coordinating Board 2014).

A recent study of apprentices in the state of Washington gives an indication of the potential costs and benefits associated with an apprenticeship program (Workforce Training and Education Coordinating Board 2014). The average cost per participant borne by the individual and government was about $5,500. In contrast, the per-participant cost associated with participation in a community college professional or technical program are about $16,000 per year.

The potential benefits, as indicated by this study, are stunning: apprentices raised their earnings relative to a comparison group by an average of nearly $78,000 over two and a half years after leaving the program. In comparison, participants in community college professional or technical programs netted only about $15,000 in increased earnings. Projecting earnings effects through age sixty-five, these relative earnings for apprentices amount to roughly $440,000 at a cost of $5,500; the comparison figures for participants in community college professional or technical programs are $175,000 at a cost of about $20,000 (Workforce Training and Education Coordinating Board 2014). A separate study conducted

by Deborah Reed and colleagues (2012) of ten other states found earnings gains associated with apprenticeship training amounting to $6,000–$6,500 per year per participant. In addition to these quantitative benefits, apprenticeship—in particular registered apprenticeship—also results in numerous social benefits, including added productivity of workers, reduced use of government safety-net programs by participants, and a stronger local economy.

Two studies of the earnings gains of apprentices and government costs in the United States find that the social benefits outweigh the social and government costs by ratios of 20:1 to 30:1 (Reed et al. 2012; Workforce Training and Education Coordinating Board 2014), although the extent to which these benefits are due to government investment as compared to employer investment is indeterminate. Investing in extensive marketing aimed at increasing apprenticeship with appropriate incentives for performance will add only modestly to government costs while yielding substantial gains for workers and the public.

Given the high share of apprenticeship programs undertaken through joint union-employer agreements, some share of the earnings gains associated with apprenticeship may actually result from the role of unions in bargaining for higher wages. Still, workers must have raised their productivity enough through their apprenticeship in order for employers to afford to pay union wages. On the cost side, construction unions and both union and non-union employers certainly invest large sums in training apprentices. Manufacturing companies that train apprentices do so as well. This stimulus to private investments is one of the reasons apprenticeship increases earnings at a modest cost to the government.

Questions and Concerns

Will enough employers offer apprenticeship positions?

Stimulating a sufficient increase in apprenticeship slots is the most important challenge. Although it is easy to cite examples of employer reluctance to train, the evidence from South Carolina and Britain suggests that a sustained, business-oriented marketing effort can persuade a large number of employers to participate in apprenticeship training. Both programs were able to more than quadruple apprenticeship offers over about five to six years. Today, U.S. employers are far less likely to offer apprenticeship programs than are their counterparts in many other advanced economies. One reason is that federal and state governments have not provided adequate resources to encourage and help employers adopt apprenticeship programs. New policies may or may not succeed in generating significant growth in apprentices, but we are highly unlikely to achieve growth without trying something along the lines of the proposals in this paper.

Will enough workers apply for the additional apprenticeship slots?

Compared to expanding the demand for apprentices, increasing supply by attracting sufficient applicants for apprenticeship is likely to be relatively easy. Although representative data on the number of applicants per apprenticeship slot do not exist, many examples indicate that the number of applicants is far higher than the number of apprenticeship openings. Take the case of the Apprenticeship School, a program linked to the shipbuilding tasks of a company in Newport News, Virginia.[4] In 2013, the school had over 6,000 applicants for about 240 positions. Most craft apprenticeship programs in the building trades have far more applicants than apprentice slots. The case of Britain offers additional evidence: the massive increase in intermediate or advanced apprenticeship positions between 2007 and 2013 was matched by a sufficient increase in applicants. Nonetheless, providing counseling and information to prospective apprentices will still be a sensible investment, especially after an expansion in apprenticeship slots, because a good matching process is critical for the effectiveness of the program for workers and firms.

What role does public perception play in the expansion of apprenticeship opportunities?

Public perception and awareness of apprenticeship could play a major role in its expansion in the United States. In the United Kingdom, for example, a large shift in public perception occurred over the past few decades, leading to a series of pro-apprenticeship campaigns that coincided with a rapid increase in apprenticeship. In the year following the implementation of a marketing campaign in London, the number of apprentices in the city more than doubled from 20,350 to 41,400 (Evans and Bosch 2012). Furthermore, a £25 million public apprenticeship fund introduced in 2010, which included a marketing component, coincided with a near doubling of apprenticeship starts in England—from 279,700 to 520,600—between the 2009–10 and 2011–12 academic years (Skills Funding Agency 2014).

Importantly, too, is the culture surrounding both the teaching and learning aspect of apprenticeship. In the United States, registered apprenticeship in the building trades industry have been present for more than 100 years and are an integral part of the training for construction-related occupations. Many workers in these industries are accustomed to their role as mentor and teacher. As apprenticeship becomes more common in other industries, the apprenticeship model—which relies heavily on the participation of existing workers—

may become a familiar and welcome of aspect of employment in other industries.

Will apprenticeship programs accept disadvantaged workers?

Apprenticeship can play a role in helping the disadvantaged, but not all will benefit. As noted above, apprenticeship promotes youth development and provides a pathway to rewarding careers that is less reliant on classroom instruction. This approach is particularly relevant to the learning processes of men, especially minority men. In many cases, employer requirements will limit the opportunity of the most educationally disadvantaged from entering various professions. Of course, exclusions of this type occur even without an apprenticeship. Still, apprenticeship is attractive even to disadvantaged workers because they provide clear incentives for low-performing students to work hard to attain adequate skills to qualify for apprenticeship that leads to career jobs that pay well. Finally, there is a distribution of apprenticeship occupations; some occupations might not require advanced education yet still involve apprenticeship that leads to attractive careers.

Conclusion

Expanding apprenticeship is a potential game-changer for improving the lives of millions of Americans and for increasing the efficiency of government dollars spent on developing the workforce. Instead of spending over $11,000 per year on students in community college career programs, why not shift resources toward apprenticeship programs, which are far more cost-effective? Apprenticeship programs yield far higher and more-immediate impacts on earnings than community or career college programs, yet cost the student and the government far less than college programs. Community college graduation rates, especially for low-income students, are dismally low. Even after graduating, they often have trouble finding a relevant job. For students in postsecondary education, forgone earnings are one of the highest costs. In contrast, participants in apprenticeship programs rarely lose earnings and often earn more than if they had not entered an apprenticeship. Furthermore, apprentices are already connected with an employer and can demonstrate the relevant credentials and work experience demanded by other employers. Finally, there are net gains flowing to employers from apprenticeship programs.

The key question is not whether the shift in emphasis from community and/or career colleges toward apprenticeship is desirable, but whether it is feasible. Although some argue that the free U.S. labor market and the weak apprenticeship tradition pose insurmountable barriers to scaling-up apprenticeship, the dramatic increases in apprenticeship in Britain offer strong evidence that building a robust apprenticeship program in the United States is feasible.

The first step is persuading policymakers and employers about the desirability and feasibility of apprenticeship. Once that intellectual hurdle is overcome, the next step is establishing leadership at the policy and program levels and effective implementation of the new approach. Institutional change of this magnitude is difficult and will take time, but will be worthwhile in terms of increased earnings, enhanced occupation identity, increased job satisfaction, and expansion of the middle class.

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Endnotes

1. The figures come from tabulations by the author from the March 2013 Current Population Survey (National Bureau of Economic Research n.d.).
2. For a detailed look at the barriers to expanding apprenticeship in the United States, see Lerman (2013).
3. Data from the combined 2001 and 2005 National Household Education Surveys indicate that 1.5 percent of adults were in an apprenticeship program in the prior year (National Center for Education Statistics 2008). If these data are accurate, the number of unregistered apprentices would far exceed the number of registered ones.
4. See http://as.edu/index.html for the school's Web site.

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