
Youth Apprenticeship: A Hopeful Approach for Improving Outcomes for Baltimore Youth

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Introduction

America faces increasing economic challenges. Slow economic growth, the stagnation of wages in middle- and low-wage jobs, and the decline of the two-parent family have all contributed to the problem. Young people are facing high unemployment and underemployment that may limit their long-term success. Young men, particularly those from low- and even middle-income families, are falling behind in school and experiencing large declines in job prospects. Their inability to earn a good salary and to find satisfying jobs with upward mobility likely contribute to the increase in female-headed families and delays in starting two-parent families. Moreover, the lack of early work experience leads to weaker future career outcomes (Mroz and Savage 2006).

The transitions of American youth from school to career have proved problematic for decades, especially for young men of color. In 1979, the National Commission for Employment Policy viewed the weak employment outcomes of disadvantaged youth as resulting from the economy's limited ability to generate jobs, educational handicaps, and discrimination, leading to declining interest in schooling. It called for targeted jobs programs and renewed efforts to remedy educational deficiencies. By 1990, two reports (William T. Grant Foundation 1988

and Commission on the Skills of the American Workforce 1990) moved the conversation toward systemic weaknesses that limit the career opportunities for at least half of all American youth. These and other reports called for improving the nation's approach to the transition from school to career. Despite federal legislation and some state initiatives, the weaknesses of the transition process have remained and youth joblessness has worsened. As Andrew Sum and colleagues (2014) recently argued, "Employment prospects for teens and young adults in the nation's 100 largest metropolitan areas plummeted between 2000 and 2011. On a number of measures—employment, labor force underutilization, unemployment, and year-round joblessness—teens and young adults fared poorly, and sometimes disastrously."

Baltimore's youth have experienced chronic problems in graduating from high school and finding employment. According to Baltimore City Schools, one in four students fails to graduate high school within five years. Of those who graduate, one in three completes the easier Bridge Plan to earn a high school diploma in lieu of the more difficult challenge of passing Maryland's High School Assessment (HSA) exams.¹ Indeed, less than half of seniors in Baltimore City Schools pass the HSA.² The unemployment rate for 16 to 19 year-olds in

Baltimore City is over 40 percent, which means that youth—both in school and out—struggle mightily to find employment; indeed, only about 20 percent of 16 to 19 year-olds hold a job. Nearly one in four of Baltimore's 20 to 24 year-olds is unemployed and only one in two is in the labor force.³

For years, the federal government has funded an array of programs to improve career outcomes for disadvantaged youth, but most have achieved limited success. A study of Job Training Partnership Act youth programs found that the programs yielded no real gains (Orr et al. 1996). An evaluation of Job Corps, a residential education and vocational training program for youth ages 16 to 24, found that the program raised earnings of older youth, but the gains dissipated for most youth over time (Schochet, Burghardt, and McConnell 2007). Summer youth employment programs, funded at varying scales in cities across the country, offer only temporary assistance with limited long-term benefits.

These career training programs represent a fraction of state and federal government efforts, as the government's largest investment in youth occurs through the traditional public educational system. The results of that system are uneven at best. As vocational training has been deemphasized nationwide, schools focus on preparing students for college. And although the majority of high school graduates attend college, only about 45 percent of American workers ages 25 to 34 earn an Associate of Arts (AA) or Bachelor of Arts (BA) degree (U.S. Census Bureau 2014). Recently, President Obama and others have called for expanding community colleges beyond the nearly 7 million students they already serve. However, such an approach is unlikely to succeed for young people of color, especially those that currently lack a high school diploma or GED, lack access to funds to pay for college living expenses, or lack the academic skills required

for college success. Only about 20 percent of all 2-year college students graduate within one-and-a-half times the normal period; over a longer period, about 25 percent attain an AA or BA degree, but for African-American students, the graduation rate for either degree is only about 15 percent.⁴ Moreover, although tuition is low at community college, federal, state, and local governments spend about \$11,400 per year per student at public 2-year colleges (Cellini 2012).

How can public policy initiatives for youth do better? What does the experience from other countries and selected programs in the U.S. suggest about preparing youth for rewarding careers?

These questions are particularly timely as youth apprenticeship is being mentioned both nationally and in Maryland as a promising strategy to better prepare youth for employment. In early 2014, the Maryland Task Force to Study Economic Development and Apprenticeship embraced the development of youth apprenticeship pilots in Maryland.⁵ The task force report noted that youth apprenticeships are not available in most Maryland schools and called for the State to "expand and further develop youth apprenticeship programs." Specifically, the Task Force recommended establishing "defined pilot youth apprenticeship preparation programs in Baltimore City and Prince George's County." It called for modifying community college and Maryland State Department of Education curricula to fit the needs of the pilot programs, to identify skill standards in the industries selected for the pilots, and to promote the pilots using a concentrated marketing effort to attract employers to participate. In addition, the Task Force proposed establishing a Youth Apprenticeship Advisory Committee. The committee would evaluate existing high school apprenticeship programs, identify ways to implement high school youth apprenticeship

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programs in Maryland, review possible grants, tax credits, and other subsidies to employers, and report to the General Assembly on how to promote high school apprenticeship programs.

The Maryland Economic Development and Business Climate Commission, convened in March 2014, also recommended that Maryland pilot an apprenticeship preparation program in interested jurisdictions, especially to support apprenticeships in the manufacturing industry and in the science, technology, engineering, and math industries. It called on state agencies, including the Department of Labor, Licensing and Regulation, the Department of Education, and the Department of Business and Economic Development, to identify employers and skill standards for the pilot program and promote the program using concentrated marketing to connect employers with the pilot program. Together, the Task Force and the Commission offer strong evidence of interest in constructing youth apprenticeship pilot programs among legislators and members of other constituencies.

This paper supports the argument that youth apprenticeship offers a sound and well-documented strategy for improving school and career outcomes for Baltimore's youth. It begins by describing how apprenticeship has proved effective in a range of contexts. Next, it reviews examples of youth apprenticeship in other places, specifically current state programs in Georgia and Wisconsin and comparable European programs. Then, it considers the ongoing Career and Technology Education (CTE) programs

in Baltimore and how they might form the foundation of an apprenticeship pilot program. Finally, it provides recommendations on how to develop a youth apprenticeship initiative in Baltimore.

Why Apprenticeship?

One critical determinant of success in school and work is student engagement, or the degree to which students show interest in what they are learning. As youth development scholar Karen Pittman (2014) recently pointed out, citing a report on Washington, D.C. students, "...engagement was an ingredient that helped the academically weaker 8th graders in strong high schools graduate on time; the absence of engagement allowed the stronger students to fall behind." Yet, Gallup poll national data indicate that by 10th grade, only one-third of students are engaged in learning (Pittman 2014).

What can stimulate increased student engagement, learning, and the development and retention of skills valued in the job market? One approach that works in other countries and in some U.S. states is apprenticeship. Apprenticeship combines classroom-based vocational education, structured work-based learning, and paid work and production to help youth master an occupation. Apprenticeships are subject to government- or industry-recognized training standards, particularly for their workplace component. They usually last between 2 and 4 years and

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lead to a recognized credential certifying the apprentice's capabilities to perform the required tasks of a fully qualified worker in the occupation. In the United States and many other countries, apprenticeship takes place after high school when the participant is twenty years old (or older). Unlike internships, apprenticeships require far more in-depth training, involve paid work, and lead to a recognized occupational credential. Unlike paid work experience, apprentices learn skills in formal classes and absorb their learning at the workplace in a highly structured setting.

Apprenticeships beginning during the high school years can play a positive role in reengaging American youth. As researcher Robert Halpern (2009) discovered, "Apprenticeship provides experience that young people can acquire in no other way," as they work in disciplines that are interesting and new. Youth apprenticeship helps young people develop independence and self-confidence through their ability to perform difficult tasks. Youth try out new identities in an occupational arena and experience learning in a context of making actual things and providing services. And unlike typical part-time jobs, high school and college students in apprenticeships can directly see the connection between what they learn on the job with what they learn in the classroom.

Apprenticeships offer a way of involving constructive adults that makes sense to young people; more than simply classroom teachers, the adults who lead apprenticeship programs

serve as mentors, on-the-job supervisors, and teachers. Apprentices work with experienced adult mentors who offer guidance but allow youth to make their own mistakes. Apprenticeships also introduce youth to supervisors who help the apprentices perform well at work and in the classroom. This classroom support is particularly important because apprentices who do not perform well in their courses often lose their jobs as apprentices.

Finally, apprenticeships allow youth to develop real-life work experiences. Youth see themselves judged by the established standards of the occupation in actual working environments, facing the deadlines, constraints, and unexpected difficulties that arise in a profession. While apprentices are expected to demonstrate professionalism and care, they are not expected to be perfect.

One important advantage of apprenticeships is their low cost. Employers pay wages for the work of apprentices as well as the costs of work-based training. But, they often recoup the costs during the apprenticeship itself through the productivity of the apprentices. The government costs are modest in comparison to full-time schooling. Even if the government shouldered the full costs of formal, classroom instruction linked to the apprenticeship, the time and costs are far less than the costs involved in supporting a student through a traditional community college program.

A robust apprenticeship system can narrow

the gender gap in postsecondary credentials. Young men, especially young men of color, are far behind young women in graduating college. Among 25 to 34 year-olds, only 24 percent of African-American and 17 percent of Hispanic men had attained an AA or BA degree as of March 2013. In contrast, AA or BA completion rates were 37 percent for African-American women and 27 percent for Hispanic women.⁷ In Canada, young women (of all races) also outpace young men in college completion. However, if one counts apprenticeship credentials as comparable a post-secondary degree, the gender gap in post-secondary attainment narrows sharply (Gunderson and Krashinsky 2012).

Apprenticeships can accommodate differences in learning styles that some believe may be relevant to gender gaps. Although learning-by-doing is appealing to most students, the difference between a model based solely on classroom learning and one taking place mostly on the job may be of special importance to men. Apprenticeships give students who are bored in school or who doubt the value of education increased confidence that their efforts and investment in skill development will pay off.

The Organisation for Economic Cooperation and Development (OECD 2010) and other international organizations (European Commission 2013) have documented the role of apprenticeships in smoothing the transition from school to work and in maintaining low youth unemployment. Austria, Germany, and Switzerland all engage a large share of youth in late high school in a dual (work-based and school-based) program leading to an occupational credential. The apprentices work in paid employment, learning at work and at school and contributing to production.⁸ Unemployment rates of 15-24 year-olds in these three countries are under 9 percent, compared to over 16 percent in the U.S. and in the OECD as a whole.⁹ Moreover, the transitions from school to career are far smoother for youth in apprenticeship schemes (European Commission 2013).

In the U.S., programs that combine work-based learning with an occupation/industry focus produce promising results. For example, there are over 2,500 Career Academies in high schools across the country. These academies operate as “a school within a school,” with clusters of students who typically stay with the same group of teachers for 2 to 4 years, forming a close-knit learning community that gives students needed support. The Career Academies form partnerships with employers who sponsor career awareness and work-based learning opportunities and provide resources and financial support. The Academies also integrate academic and occupational curricula and instruction centered on a career theme, occupation, or industry.¹⁰

The Manpower Demonstration Research Corporation’s evaluation of the Career Academy model shows that this approach, when implemented effectively, can improve outcomes for high school students, especially for young men. In the period 4 to 8 years after expected graduation, entering a Career Academy led to earnings gains for young men of about \$360 per month (Kemple and Milner 2008). According to the federal contract officer overseeing the project, the work-based learning component was critical to this success. However, perhaps due to uneven implementation, only 35 percent of Career Academy youth had jobs connected with school and only 22 percent engaged in high quality work-based learning (Kemple, Pogliano, and Snipes 1999). In well-structured Academies, about 40 percent of Career Academy participants engaged in at least some work-based learning. Thus, Career Academies achieved success and could expand dramatically the role of quality work-based learning.

California’s Linked Learning is another effort to merge academic and workplace learning. Now operating in 63 school districts, Linked Learning pathways offer high school students

a rigorous academic curriculum integrated with career-based classroom learning and real-world work experiences. The industry-themed pathways offered to students include arts and entertainment, health, law and justice, engineering, construction, and digital communication and design. Although the program emphasizes building employability skills and project-based learning even within the classroom, the goal of serious work-based learning has been only partly met, with about one-third of participants engaging in internships. Still, a recent study by SRI indicates that Linked Learning showed gains in schooling and in college awareness and readiness (SRI 2014). If Linked Learning and Career Academies—which do not include extensive work-based learning—can and do work in part because of the work-based learning component, apprenticeship programs, with their more extensive work experience and well-defined skill pathways, can presumably do better.

Given the potential benefits of robust youth apprenticeship programming, the question remains as to what such a program could look like. Are youth apprenticeships able to translate into valuable adult qualifications? What are the costs of apprenticeship and who bears them? For information relevant to answering these questions, we turn to other places with experience operating youth apprenticeship programs and more general apprenticeship programs for youth and adults.

Youth Apprenticeships Elsewhere

Georgia and Wisconsin now operate youth apprenticeship programs that provide opportunities to 16 to 19 year-olds.¹¹ Both programs have been operating since the mid-1990s. In Georgia, 143 out of 195 school systems currently participate in the apprenticeship program serving 6,776 students. State funding pays for coordinators in local school systems and sometimes for

required courses not offered in high schools. During their freshman and sophomore years, 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. The fields vary widely from energy to information technology, manufacturing, and transportation and logistics. Apprentices not only receive 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.

Educators, employers, parents and students play key roles in these youth apprenticeship programs. High schools are responsible for recruiting and counseling students, supporting career-focused learning, and assisting in identifying industry partners. Postsecondary schools participate in developing curricula 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 skills. The worksite supervisors must participate in mentor orientation and training so that they can serve as coaches and role models. Parents must sign an educational training agreement and provide transportation for 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.

Youth apprentices in Georgia have higher rates of graduation from high school than comparable youth. Although there has been no rigorous evaluation of the Georgia program, participation has been growing among both companies and students. 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 report good quality student performance in problem-solving and communication skills. While there has yet to be a long-term follow-up to determine impacts on employment, earnings, and post-secondary education, these positive outcomes are highly promising.¹²

The Wisconsin program offers 1 to 2 year apprenticeship options to 2,500 high school juniors or seniors, requiring from 450 to 900 hours in work-based learning and 2 to 4 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 credits. Recently, Wisconsin's Bureau of Apprenticeship Standards has been tasked with integrating youth apprenticeship into the state's adult registered apprenticeship program.

Wisconsin youth apprenticeships are in food and natural resources, architecture and construction, finance, health sciences, tourism, information technology, distribution and logistics, and manufacturing. Each broad field includes subfields specified with detailed skill standards. In health, for example, the broad pathways are therapeutic services, health informatics, and ambulatory support services. All pathways require core employability skills and knowledge of the health industry and safety in the job. Skill standards for therapeutic services pathway include dental assistant, medical assistant, nursing assistant, and pharmacy assistant. Health informatics involves operating all the software and managing the records for a medical office. Ambulatory support service modules cover imaging, other laboratory work, client services, dietary assistance, optometry, and physical therapy.

Students in Wisconsin's Transportation,

Distribution, and Logistics pathway acquire an extensive array of skills for supply chain management and mobile equipment maintenance. The equipment maintenance areas include collision repair, auto and light truck systems, and diesel technician. Within each of these areas, there are several units, covering topics from engine repair to electronic systems.

Other youth apprenticeship programs operate extensively in Canada. The Manitoba High School Apprenticeship Program (HSAP) operates under the umbrella of Apprenticeship Manitoba. Apprentices must complete four levels to become eligible to take the journeyman certification test. HSAP begins the apprenticeship process (level 1 and level 2) while students are in high school, home school, or completing high school education at an adult learning center. HSAP apprentices attend high school full-time and participate in on-the-job training part-time; they receive certification in their field of study after they graduate from high school. There are over 40 qualifying occupations under HSAP, including manufacturing (machinist, electrician, tool and die maker, water and wastewater technician, and welder), transportation (automotive and truck mechanic, gas turbine repair), construction (carpenter, construction electrician, steam-fitter and pipe-fitter), and services (cook and hair stylist).

To participate in HSAP, students must be enrolled in an approved Manitoba grade 10, 11, or 12 program, and be at least 16 years of age. HSAP apprentices receive a wage of at least 10 percent more than the Manitoba minimum wage rate of \$10.45. Employers who participate in HSAP and who are not eligible for the Canadian apprenticeship tax credits can claim a 10 percent tax credit for wages paid to HSAP apprentices in levels 1 and 2, up to a maximum of \$2,000 per year for each apprentice. If an HSAP apprentice transitions into full-time, post-secondary apprenticeship training after

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graduating high school, the apprentice is eligible for assistance to offset tuition costs for further education. HSAP has 1,142 apprentices.

Apprenticeship in Europe

Consideration of apprenticeship programs more broadly, and not just those programs focused on youth, reveals an even more robust movement in Europe, especially in Austria and Denmark but also in Germany, Australia, and England.¹³ Generally, apprenticeships in these countries begin in late high school and continue for about three years, with students combining work-based learning with classroom study provided by publicly-funded career schools. Apprenticeships' share of the total labor force is about 3.7 to 3.9 percent in Germany, 2.3 to 2.5 percent in England, and 1.7 percent in France, but only about 0.3 percent in the United States. In many countries, most young people take up available apprenticeships.

Seventy percent of Swiss youth enter apprenticeships. The extensive use of apprenticeship in one of the richest countries in the world is notable, since it demonstrates that countries can prosper without an exclusive focus on BA degrees. It is clear that apprenticeships are not dead-end positions; there is the possibility for career growth (Hoffman 2011). Top business managers often have gained valuable experience as apprentices. An attractive component of Switzerland's apprenticeship system is its offer of seamless pathways between completing an apprenticeship and entering university.

While only a modest percentage takes the government up on the offer to enter university, it is a strong indicator that applicants see apprenticeship as a pathway to higher education.

England has ramped up its apprenticeship program dramatically, from about 150,000 in 2007 to over 800,000 today. Although most of the apprenticeships in England go to workers 19 and over, young people under 19 accounted for 185,000 apprenticeships in 2013/14, or 1 in 5 members of the cohort. In the U.S. context, this ration would be equivalent to 800,000 apprenticeships. The apprentice occupations for young people range from accountancy, beauty and hairdressing, hospitality and catering to child learning and development, construction, and engineering.¹⁴

In all of these apprenticeship programs, employers pay apprentices a wage, finance the cost of a mentor, and only receive partial compensation for their investments. However, because apprentices are productive, employers are able to recoup some or all of their costs in the form of increased output. Additional savings to employers accrue when some apprentices remain with the firm, thereby lowering recruitment and training costs. The employers also know the capabilities of the apprentices who complete their program, which reduces the time necessary for further orientation and training.

Although apprenticeships cost the employer more than short-term internships, the benefits to the employer are also higher. Unlike interns,

who leave at the point at which they become highly productive, apprentices remain with the firm for at least 2 years. Typically, apprentices who see they have little aptitude or interest in a profession leave quickly, thereby limiting the employer investment. Those who stay begin to master a range of skills that allows employers to use apprentices for tasks normally assigned to higher paid, full-time workers.

Building a Youth Apprenticeship Demonstration in Baltimore

1. What It Would Take

Ideally, a multi-year youth apprenticeship program should undertake a wide range of tasks. The program should teach students about all aspects of the industry, rotate apprentices among jobs, undertake projects, develop personal and social competence, define expectations of the apprentice and the employer, assess learning to grant credentials, coordinate work-based learning with school-based instruction, coach and mentor youth on technical and personal skills, help teachers link school-based and work-based learning, promote high level academic achievement, advise youth, create career paths after high school, and form partnerships in the community (Hamilton and Hamilton 1997). This is an ambitious list, but as with any effective apprenticeship program, the most critical element is attracting employers to participate and hire youth apprentices.

Effective outreach to employers is one of the hallmarks of the apprenticeship program in South Carolina. With Apprenticeship Carolina, the State has managed to raise the number of companies sponsoring registered (mostly adult) apprenticeships from about 90 to 700 between 2007 and 2014. Apprenticeship Carolina built an effective staff housed at the State with sales and business skills to reach individual firms and help them see how apprenticeship can be of value. The staff were hired primarily for their business and sales talents and only subsequently did they

learn the details of how apprenticeships work and can be effective for firms. They branded the initiative at the state level and partnered with the technical college system. By selecting and training a skilled sales force, they managed to “sell” the apprenticeship idea to employers and increase the number of opportunities for would-be workers.

2. Existing Elements in Baltimore

High schools in Baltimore engage in a variety of career-oriented programs. In addition to a handful of formal Career Academies, Career and Technical Education (CTE) programs are available in over 41 BCPS middle and high schools. Through CTE, students take academic courses, complete course pathway requirements, and participate in work-based learning opportunities, including job shadowing, mentoring with industry professionals or internships. After successfully completing a CTE program, students can graduate from high school with an industry certification or college credit. According to a 2005 Abell Foundation report, CTE programs have higher attendance and graduation rates than other comparable programs.¹⁵ More recently, the Program Quality Index for School Year 2013 – 2014 shows that 98 percent of students who participated in CTE (or 1,705 of 1,780 students) graduated with a Maryland High School diploma or certificate. In addition, 720 CTE students from Baltimore City Schools entered post-secondary education, employment, or military services.

Nearly all CTE pathways incorporate some form of work-based learning, with many in unpaid experiences. In health care, these unpaid work-based learning experiences include internships with surgical technicians, Certified Nursing Assistants (CNAs), pharmacy and dental technicians. In the information technology area, there are partnerships with Cisco Systems and Best Buy. However, Baltimore’s CTE program has limited reach.

State data indicate that work-based learning among Baltimore City high school seniors—in both CTE and non-CTE programs—is rare, numbering only 64 students in paid and 44 in unpaid positions. These students represent less than 5 percent of high school seniors in Baltimore City Schools.

All CTE pathways require that students graduate with an industry-recognized certification, and, in that domain, Baltimore City Schools has made dramatic progress. In School Year 2008 – 2009, federal Perkins funding to public schools required districts to track the technical skills attainment of CTE students. In that year, Baltimore City Schools reported a total of 129 participants who obtained an industry credential. That number has increased dramatically: in School Year 2013 – 2014, 522 students in Baltimore City Schools obtained an industry certification. Many of the occupational certifications obtained through CTE in Baltimore high schools are the same as those earned through community college programs.

When asked about how best to expand the CTE program, Michael Thomas, Director of Learning to Work for Baltimore City Schools, cited the need for improved equipment within the schools, increased work experience for students, incentives for employers to participate, improved transportation to help students reach internships, and more work-based learning coordinators. In some schools, the CTE teachers develop relationships with employers, which provide informal networks for students. For example, nurses with existing relationships with hospitals are hired to teach in CTE programs and often ease the entry of students into work-based learning opportunities.

Career education takes place in non-CTE schools in Baltimore as well, as many schools offer job shadowing, guest lectures, job fairs, and several work-based learning options.

Some students undertake STEM projects with a national curriculum called Project Lead the Way, which offers CTE pathways for both middle and high schools. Baltimore's YouthWorks program offers five-week paid summer jobs with a variety of employers, including hospitals and government agencies. More experienced students are placed in the "Hire One" initiative in career-related positions in private companies. Additionally, the CTE division implements, in coordination with YouthWorks, two career-related summer programs: the Baltimore Alliance for Careers in Health Care (BACH) Fellows program for rising seniors in the Academy of Health Professionals pathway and a program at the BioTechnical Institute of Maryland for rising seniors in the PLTW Biomedical Science pathway. Community service programs are another route to work-based learning.

At least two high schools in Baltimore, the Academy for College and Career Exploration (ACCE) and Dunbar High School, work to integrate work-based learning opportunities by bringing in professionals to acquaint students with their fields. ACCE offers job shadowing and internships to its students. Dunbar has a number of programs in cooperation with the medical institutions at Johns Hopkins. In addition, Dunbar has a one-year course in Exploring Health Careers.

Notwithstanding the array of CTE and other work-based learning opportunities in Baltimore, Maryland's accountability system does not currently report on individual school *performance* in preparing students for career outcomes. While every school reports the percentage of entering students who graduate and the pass rates on various high school assessment tests and advanced placement exams, the school-based reports do not show how many occupational certifications were earned, how many students entered a job or apprenticeship in a field related to their high school CTE program or work experience, or

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which employers hired CTE and other students. Citing student privacy concerns, Baltimore City Schools does not conduct follow-up surveys or match earnings records of student participants to determine the program’s effectiveness. Baltimore’s schools, like all Maryland schools, are judged only on proficiency in reading/language arts and mathematics and cohort graduation rates. However, the Maryland Longitudinal Data System represents an effort by the State of Maryland to pull together K to 12 education data with postsecondary education data and earnings outcomes and could provide a vehicle for determining more work-related outcomes.

3. Developing a Youth Apprenticeship Pilot Program in Baltimore

While Baltimore already incorporates elements of Career Academies and a modest amount of work-based learning, current efforts are limited. An expansion and recasting of Baltimore’s high school curriculum—including but not limited to CTE—toward a youth apprenticeship model can substantially improve schooling and career outcomes. At the very least, this paper recommends developing and testing youth apprenticeships in selected occupational fields in two or more high schools.

Youth Apprenticeship requires engaging high-school students in industry-relevant learning activities. Wisconsin and Georgia have already developed extensive task listings for apprentices to accomplish in a number of fields. Virtually all the required skills are to be obtained at worksites. Each apprentice has a mentor that rates the students with respect to accomplishing the task. The three ratings are: 3-exceeds entry-level

criteria, requires minimal supervision and consistently displays this behavior; 2-meets entry-level criteria, requires some supervision, often displays this behavior; and 1-needs improvement, requires much assistance and supervision, rarely displays the behavior.

A Baltimore youth apprenticeship demonstration program can draw upon but needs not copy the skill requirements of programs in other states. The major employers in the city, such as Johns Hopkins, have considerable history in working with Baltimore youth and in defining the skills they seek in employees. However, the standards, along with required related courses, can enrich discussions with employers. A well-designed model should include integrated learning approaches that imbed math and literacy skills, technical occupational skills training, and essential workplace skills (teamwork, communication, responsibility, and timeliness), both in the classroom and the workplace. These skills can be integrated into well-documented experiences so that the student can show consistent performance on a range of critical tasks. If the employer’s own employees are mentoring and judging the apprentice’s capabilities, then the potential is great for finding a very close match and saving on recruitment and subsequent employer-based training costs.

Youth Apprenticeship is a proven way to improve the career prospects of all students, including young men of color. Many of the components for such an effort exist in Baltimore. The challenge is bringing them together in a coherent program and reaching scale.

4. Potential Collaborations

A youth apprenticeship program could leverage relationships with Maryland employers participating in other programs and structures. Baltimore is home to 6 industry partnerships that have received funding from the Maryland Department of Labor, Licensing and Regulation's EARN (Employment Advancement Right Now) program.¹⁶ These partnerships include employers, community colleges, and non-profit organizations that are working together to meet industry-identified workforce needs, and to train Baltimore residents in the skills employers have identified. These industry partnerships project job openings in entry-level positions that are likely to lead to career advancement and family-sustaining wages.

Recent studies by the Opportunity Collaborative and the Abell Foundation offer labor market information that could also be leveraged. The Opportunity Collaborative, a regional consortium housed at the Baltimore Metropolitan Council, is developing integrated housing, workforce and transportation plans to better connect low-income residents to opportunities across the Baltimore region. As part of that effort, the Opportunity Collaborative has funded research that has identified 36 occupations in 6 sectors that could be the focus of a youth apprenticeship program.¹⁷ Further, the Abell Foundation's report, released in February 2015, provides detailed information on 74 "best prospect" occupations in high-growth industries that require post-secondary education of an AA degree or less.¹⁸ A subset of these occupations could be the focus of a youth apprenticeship pilot program.

Recommendations

The following recommendations are intended to help move the process forward in creating a youth apprenticeship pilot program in Baltimore:

1. **Convene stakeholders.** A series of meetings should be held to explore the opportunities for youth apprenticeship in Baltimore. The meetings should bring together high school principals, CTE leadership and staff, employers, training providers, and selected state officials. The convening should draw on the expertise of individuals operating successful youth apprenticeship programs in Georgia and Wisconsin.
2. **Design a pilot program.** Much work needs to be done to identify which occupations to focus on for a pilot program, the timing of student entry and completion, the skill expectations to be met for each occupation, and the number of hours and extent of work-based learning and related classroom activity. Programs at different schools could test how well various approaches to marketing apprenticeship to employers actually work.
3. **Research how child labor laws could affect a pilot program.** Existing guidelines show that few occupational areas in which youth apprentices might be trained are off limits to those under age 18. Moreover, the Maryland Commissioner of Labor and Industry can grant exceptions to the occupational and hours limitations placed on youth. Although child labor laws have created modest barriers to some youth apprenticeships in Wisconsin, the potential barriers look less severe in Maryland and in any event include the granting of exceptions.
4. **Work with employers to develop and adopt frameworks of occupational skills attainment.** Currently, students enrolled in career education or work-based learning programs are not always required to learn a specific set of occupational tasks on the job site. Employers are reluctant to provide learning opportunities that are disconnected from actual work, and,

therefore, they are reluctant to provide work-based learning opportunities. For employers to value and seek out youth apprentices, they need to be convinced that students will acquire skills that matter. However, this engagement will only be effective if employers and educators agree upon the occupational tasks required of each job. For a detailed example of such an occupational skills framework, please see the Appendix which is available online.

5. Determine how to finance the pilot.

Funding strategies employed in Georgia and Wisconsin should be examined to determine how best to fund staff, courses, marketing to employers, curriculum development, ongoing operations, and program evaluation. Although start-up costs may be significant, the costs per participant in other states are quite low, only about 3 to 5 percent of annual per-pupil expenditures in Baltimore City. Moreover, the costs of the youth apprenticeships can be offset by savings from reduced class time of participants.

Youth apprenticeships should be able to reach scale, given the size of the Baltimore City high school population and the local labor market. The combined 8th and 9th grade student populations are about 17,000. A reasonable goal should be to engage about 25 percent of this group in apprenticeships within 3 to 4 years. Developing 4,200 2-year apprenticeships is an ambitious but reasonable goal, given that about 35,000 jobs in the Baltimore City and County Workforce Investment Act areas are currently held by 16 to 21 year-olds. At about \$700 per student, the gross costs of the program would amount to less than \$3 million per year. As noted above, some costs can be recouped by providing credit for structured work-based learning, thus reducing the time students spend in classes.

6. Develop a marketing plan aimed at students, parents, and employers.

The key to success of an apprenticeship initiative would be demonstrating to employers

that apprenticeships will help meet their business needs for workers with solid occupational skills, employability skills, and experience in problem-solving in their field. Doing so will require talented staff with business experience that can serve as consultants with business on talent development. Armed with quality apprenticeship opportunities, counselors can provide students and parents with a compelling case for why they will benefit from joining the youth apprenticeship program.

7. Develop a data system to accompany the pilot.

This system would link to the Maryland Longitudinal Data System and track participants' short-term and long-term outcomes. It would include information on completion, job placement, and earnings.

Concluding Comments

Too many Baltimore youth leave school without sufficient qualifications to enter rewarding careers. Although high school graduation rates are up, one in four students still does not receive a diploma within five years of entering high school. By ages 20 to 24, only about half are employed. A robust youth apprenticeship program would improve educational and occupational outcomes for Baltimore youth while upgrading the skill mix for Baltimore area employers. Providing opportunities to gain valuable work experience, to combine work-based learning with related courses, and to earn an occupational credential could reengage many Baltimore students, making them ready to enter jobs and careers. Two Maryland Commissions agree and have recommended pilot youth apprenticeship programs, including one in Baltimore.

Implementation will require collaboration among several actors. Employers, students, parents, and principals all have a role to play. Occupational requirements that include work-based and school-based learning will take time

to develop, but Baltimore can initially draw on standards used elsewhere, notably Wisconsin and Georgia. Once a few occupational programs are in place, with employers offering apprenticeships, counseling students about how to apply will be important. It is important to begin the process with a mix of occupations, including such white collar fields as health care, information technology and finance. Special care should be taken to make the first youth apprenticeships successful for youth and employers. Although the implementation process may seem daunting, the ability of other states to attract large numbers of satisfied students and employers offer hope for a successful effort in Baltimore.

About the Authors

Dr. Robert I. Lerman, an Institute Fellow at the Urban Institute and Professor of Economics at American University, has authored more than 150 articles, monographs, reports, reviews, and conference papers. He was one of the first scholars to examine the economic determinants of unwed fatherhood and to propose a youth apprenticeship strategy in the U.S. A workforce development specialist, Dr. Arnold Packer has held important policy positions as Chief Economist at the Senate Budget Committee and Assistant Secretary at the U.S. Department of Labor.

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Endnotes

1 The High School Assessments, or HSAs, cover four subject areas: algebra/data analysis, biology, government, and English. Maryland high school students can graduate by 1) passing HSA exams in all four areas, or 2) by completing a Bridge Plan for Academic Validation. By completing a Bridge Plan, students demonstrate mastery of the subjects through project-based assessments. Students can also graduate by receiving a waiver from the Maryland State Department of Education (although few students do). From <http://www.baltimorecityschools.org/cms/lib/MD01001351/Centricity/Domain/8048/DistrictDataProfile.pdf>

2 See page 5 in report on District-Wide Performance, Baltimore City Schools. <http://www.baltimorecityschools.org/cms/lib/MD01001351/Centricity/Domain/8048/DistrictDataProfile.pdf>

3 Tabulations by author from the American Community Survey.

4 See http://nces.ed.gov/programs/digest/d14/tables/dt14_326.20.asp?current=yes and http://nces.ed.gov/programs/digest/d13/tables/dt13_326.40.asp?current=yes

[grams/digest/d13/tables/dt13_326.40.asp?current=yes](#)

5 See <http://msa.maryland.gov/megafile/msa/speccol/sc5300/sc5339/000113/018000/018962/unrestrict-ed/20140038e.pdf>

6 For more information, see <http://www.ascd.org/publications/educational-leadership/sept95/vol53/num01/Strengthening-Student-Engagement@-What-Do-Students-Want.aspx>.

7 These figures come from the author's tabulations of data from the March 2013 Current Population Survey.

8 For a detailed look at these systems, see Hoffman (2011).

9 See http://www.oecd-ilibrary.org/employment/youth-unemployment-rate_20752342-table2

10 See http://www.cord.org/uploadedfiles/NCCTE_In-brief01-careeracademies.pdf.

11 Further detail on these programs are in Ault, et al. 2014, <http://innovativeapprenticeship.org/wp-content/uploads/2013/02/AIIA-Final-Report1.pdf>

12 For more information about Georgia's youth apprenticeship program, see <https://www.gadoe.org/Curriculum-Instruction-and-Assessment/CTAE/Pages/Youth-Apprenticeship-Program.aspx>.

13 For an extensive list of the occupations and tasks apprentices must complete in Germany, see the occupational standards section of the American Institute for Innovative Apprenticeship (German flag at <http://innovativeapprenticeship.org/occupational-standards/>).

14 A listing of apprenticeship occupations in England and the tasks required appears under the British flag at <http://innovativeapprenticeship.org/occupational-standards/>.

15 See http://www.abell.org/sites/default/files/publications/ed_tech_4-05.pdf

16 See <http://www.dllr.state.md.us/earn/earnggrantinfo.shtml>.

17 See <http://www.opportunitycollaborative.org/assets/BaltimoreRegionalTalentDevtPipelineStudy.pdf?74a21f&74a21f>.

18 See <http://www.abell.org/postsecondary-education-alternatives-work>.

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by Robert I. Lerman, PhD and Arnold Packer, PhD

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The Abell Foundation is dedicated to the enhancement of the quality of life in Maryland, with a particular focus on Baltimore. The Foundation places a strong emphasis on opening the doors of opportunity to the disenfranchised, believing that no community can thrive if those who live on the margins of it are not included.

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