

Recasting American Apprenticeship:

A SUMMARY OF THE BARRIERS TO APPRENTICESHIP EXPANSION RESEARCH
PROJECT

John Colborn, Director
John.Colborn@aspeninstitute.org

Nneka Jenkins, Program Manager
Nneka.Jenkins@aspeninstitute.org

November 2015

This research was funded in part by the Annie E. Casey Foundation. We thank them for their support but acknowledge that the findings and conclusions presented in this report are those of the author(s) alone, and do not necessarily reflect the opinions of the Foundation.



Introduction

Apprenticeship has caught America's attention. Businesses, practitioners, policy makers, and funders are reexamining apprenticeship as a means to restoring the country's workforce. Students and workers are pausing to consider the quickest and most affordable route to well-paying jobs, weighing occupational credentials together with traditional academic degrees. Over the next five years more than 34,000 new apprentices will be trained and hired by 46 recipients of the U.S. Department of Labor's \$175 million American Apprenticeship grants. Traditionally associated with the construction trades, apprenticeships are evolving to include high-growth industries such as IT, advanced manufacturing and healthcare. And apprenticeship is increasingly viewed as part of a constellation of strategies that enables a firm's employees to learn and advance while working. Indeed, apprenticeship has reemerged as an attractive means for advancing workers from skills development into middle class jobs.

Skills for America's Future's (SAF) believes engaged employers are essential to effective apprenticeship training. Apprenticeship can't happen without the participation and support of businesses-sponsors of apprentices, who provide employment and a job, determine the learning content of the apprenticeship and provide a paycheck to apprentices during the course of their instruction. With funding from the Annie E. Casey Foundation, the *Barriers to Apprenticeship Expansion* research project is aimed at understanding the obstacles to participation for those businesses with a demand for skilled workers yet uncertain about using apprenticeships to build their workforce. SAF also sought to understand the opportunities and limitations in using apprenticeship to advance economic opportunity for disadvantaged populations. The *Recasting American Apprenticeship* report is a review of findings from our varied investigative efforts and a set of recommendations for businesses to realize apprenticeship as a workforce development strategy.

The study addresses three topics:

The Value to Employer: Successful engagement of employers in apprenticeship programs starts with an understanding of the employer's motivations. While

typically understood as return on human capital investment resulting from a firm's talent recruitment and retention and improved employee productivity, this study suggests other critical interests: access to unique and diverse labor pools; control over training program design, including proprietary skills and enculturation; and outside influences on and prior experience of management.

Overcoming the Start-up Challenge: The cost of starting new apprenticeship programs is one impediment to expanding the practice of apprenticeship. Educators and employers alike view registration and program development processes to be complex and time consuming. Findings from this study suggest that effective apprenticeship strategies with high levels of employer engagement generally leverage existing curricula, marketing materials, the experience of already established programs and partners with prior experience and background in apprenticeship. Developing new, tailored and accessible resources such as a central repository of resources to consult may be necessary to grow employer involvement. Well-respected business and community leaders dedicated to sharing their experiences and providing guidance on apprenticeship are also a critical factor to supporting development and expansion of apprenticeship efforts.

Apprenticeship and Equity: As an "earn and learn" model, apprenticeships hold the appeal and promise of improving workplace diversity and providing career pathways for low-income people. To realize this promise, however, apprenticeships need to be structured with intentionality. Program design around participant outreach, pre-apprenticeship training and preparation and accessible classroom training is key. These efforts are most impactful when they leverage existing education and workforce development systems and engage employers and supervisors around the importance of worker support.

The final section of this paper describes recommendations for exposing more businesses to the value of apprenticeship, moving stakeholders beyond the traditional barriers to apprenticeship and structuring training with intentionality to engage nontraditional populations.

Research Design

SAF began by conducting a review of current literature that yielded an Annotated Bibliography, a summary brief of apprenticeship related background information, resource sites, how-to guidance, case studies and examples. This desktop research is particularly prominent in the section of this paper that addresses access for youth and other special interest populations.

Next, SAF surveyed over 400 businesses and organizations about their experience with apprenticeships. The survey focused on registered apprenticeship programs that have completed the registration process in the last two years and that target less traditional apprenticeship occupations such as finance, information technology and healthcare. SAF also reached out to practitioners, including community colleges, which are a part of Skills for America’s Future’s network. The survey consisted of nine questions to elicit insights on the program launch process with particular focus on the progression from program concept to registration.¹

SAF also interviewed ten businesses, most of which are “Apprentice Leaders” that have committed to expanding apprenticeship opportunities. Additionally, two labor organizations were consulted. To frame these discussions, a pre-interview online survey was used to maximize the amount of available time on the call to cover the details of the apprenticeship program, accomplishments, barriers, innovations, etc. The follow-up calls with apprenticeship program leadership, such as HR staff and the CEO, lasted about one hour each.

Finally, our formal survey and interviews were supplemented by informational interviews with the Department of Labor Employment & Training Administration and select college and workforce development practitioners from New York, Chicago, Wisconsin and California.

SURVEY SUMMARY

| Occupations | |
|----------------------------------|-------|
| Manufacturing | 52.2% |
| Information Technology | 17.4% |
| Healthcare | 15.2% |
| Retail, Sales, Business Services | 6.5% |
| Construction | 6.5% |
| Other | 21.7% |
| Phase of Apprenticeship Program | |
| Planning and design | 21.7% |
| Registration pending with USDOL | 17.4% |
| First year of operation | 45.7% |
| Second year or beyond | 23.9% |
| Location of Program | |
| Northeast | 11.4% |
| South | 25.0% |
| Midwest | 40.9% |
| West | 18.2% |
| Other | 4.5% |

Part 1: Value to Employer - Drivers and motivations for engaging in apprenticeship

There was remarkable similarity among the companies surveyed regarding the purpose and accomplishments of their apprenticeship programs, although the details of the programs differed. SAF learned that the ROI business case for apprenticeship is limited and accurately represents only a part of their human capital story, if at all. Other interests were mentioned, including: 1) apprenticeship as necessary for an assured, qualified workforce; 2) access to

special interest populations; and 3) control over program design.

Apprenticeship viewed as necessary for a qualified workforce

Among the companies interviewed, the most striking observation is that a robust apprenticeship program is viewed as an essential element in the overall business plans of nine out of ten of these businesses. The only

¹ This effort yielded a 10% response rate from June 18th, 2015 to July 3rd, 2015. Please note that on the first day of posting, two questions

were incorrectly ordered which initially confused participants and provoked unclear responses.

exception was an employer where the apprenticeship is subject to a collective bargaining agreement jointly and managed together by the firm and the union. The other apprenticeship programs were initiated and are managed exclusively by the employers. These companies staked their continued success and growth on their apprenticeship programs inasmuch as these programs provided an assured, qualified workforce in critical occupations. The performance of the apprenticeship program was judged on the basis of whether the company was able to place qualified and productive workers in their businesses. Especially notable was that none found a payback calculation to be particularly relevant to their own sense of the program's value. The real "payback" was the performance of the worker who successfully completed the program and was able to contribute vital skills to the company.

Many companies reported that the apprenticeship program and the individuals who completed their training also have a constructive effect on incumbent workers. This may be the result of the apprentice entering the workplace with more up-to-date technical skills, so that the learning is two-way (e.g., the incumbent worker picks up new knowledge and skills from the apprentice). Also, the nature of structured on-the-job training in which the incumbent worker provides guidance and instruction helps to solidify a constructive, more cooperative working environment.

In the case of one company, the apprenticeship program is being used explicitly as a change agent as their business moves towards a high performance manufacturing model. Apprentices are being instructed on the "new" business model. Incumbent workers will be required to participate in a retraining program that is based on the apprenticeship program.

The employers SAF talked to were remarkably unconcerned about losing apprentices to poaching by other employers. They report that workers who participate in the apprenticeship training program are strongly invested in the employer and are reticent to go to another employer.

The views of the leadership of the two union-operated programs were consistent with those of the employers. However, in one case an extensive analysis of the return on investment was in fact conducted.

Access to special populations

Several companies reported that the overall image of apprenticeship in the United States is not one that helps them in terms of recruiting. Some manufacturing employers emphasized that the image of apprenticeship as less desirable than college – along with perceptions of manufacturing as a dying and dirty industry -- has been problematic. For example, one employer finds that many parents regard manufacturing work as dangerous and dirty and so they begin their program outreach at 9th grade so that parents and students become more familiar with the opportunities. Instead of undertaking an apprenticeship program involving adult workers, the company feels that it is essential to educate and train workers the right way and do so early.

Other companies target youth and other underrepresented populations for their apprenticeships. One manufacturer, whose efforts to recruit college graduates proved to be fruitless, believes now that their program must begin with high school graduates. Another manufacturer begins their apprenticeship efforts in the 12th grade, although recruitment and outreach begins in 11th grade. Still another firm targets both veterans and youth. Finally, several firms recruit unemployed or underemployed individuals, with one firm going as far as assisting participants in accessing a range of public and private supports to enable those facing multiple barriers to entry to participate in its training program.

Control over program design

All of the employers reported starting their programs with very modest expectations. Several graduate only a handful of apprentices in each new class. The aim of the employers is to maintain high quality and tight control and keep future expansion to something that is manageable while still addressing the long term needs of the business. One apprenticeship program interviewed illustrates the rigor of this approach to the design and implementation. In designing a training program, staff reported working the job and then reverse engineering it so that it may be taught effectively, also identifying the pre-requisite skills and competencies that are required before someone can actually learn to master the specific skills of the occupation. Staff report however that this highly stylized model is nevertheless very adaptable to the specific needs of each occupation in the apprenticeship program.

Part 2: The Start-Up Challenge

The business leaders that were interviewed routinely drew on their personal experiences when designing the apprenticeship programs at their companies. However, issues of: 1) insufficient funding; 2) misperception and image; 3) lack of infrastructure; and 4) differing systems and varied registration processes continue to limit apprenticeship's reach. Findings from this study suggest that effective apprenticeship strategies with high levels of employer engagement generally leverage existing curricula, marketing materials, the experience of already established programs and partners with prior experience and background in apprenticeship. Developing new, tailored and accessible resources such as a central repository of resources to consult may be necessary to grow employer involvement.

Prior experience and outside influences

The leadership at several employers have European roots and were either apprentices or worked at European operations that were part of an apprenticeship system. Consequently, they all noted that they were predisposed to the apprenticeship model as a means of bringing in new workers into the company. Company leaders were:

Influenced by their experience with a European post-secondary educational system: A major difference between the apprenticeship systems in the U.S. and those in Germany, Austria and Switzerland is that the U.S. is a post-secondary system – it begins after an individual has completed high school. (Although, one company is attempting to extend its apprenticeship program to area high schools.) The European systems begin in secondary school, usually around grade 11. Given the uneven educational and skills mix in the post-secondary labor pool, these businesses, as well as Dartmouth and Hypertherm either required prospective workers to participate in an extensive pre-apprenticeship training program or incorporated pre-apprenticeship-level training in the apprenticeship program. In either case, they all adhered to a strong competency-based or competency-hybrid model wherein the apprentice had to demonstrate their knowledge and skills.

Influenced by intermediaries: Intermediary organizations or other third-parties can also play a role in the creation and expansion of apprenticeship programs. Two companies adopted streamlined apprenticeship programs after an intermediary organization exposed to them the value that such programs can give to their company and workforce. Another company interviewed first began

exploring apprenticeship because the technical school they worked closely with suggested they use an apprenticeship model for their training needs. In each of these cases, the drive towards apprenticeship occurred because of internal or external exposure to apprenticeship's value (companies either knew the value of apprenticeship from experiences overseas or external organizations helped to show companies this value).

Resources that enable employers and practitioners to realize an apprenticeship objective

The practice of apprenticeship in the United States remains confined to particular occupational niches and has not readily scaled. It lacks the institutions, acceptance and policy structures that have spurred its adoption in other countries. While organized labor has served an intermediary role for the construction trades – leading to established and emerging best practices in these occupations -- the absence of an infrastructure in other industries and among non-union enterprises limits possibilities for growth. This section explores some of these limiting factors.

Insufficient funding: 62% of the survey respondents named a lack of funding strategies as a primary challenge in establishing an apprenticeship program. Employers consider apprenticeship programs to be too expensive, especially for small businesses where elements such as instruction are costly.

Misperception and image: Even more prevalent are those challenges associated with the narrow image of apprenticeships. 28% of those surveyed share the view that apprenticeships are seen primarily as a training option for the construction trades and unions. Apprenticeship is not comprehended as a form of postsecondary education, work-based learning, or career advancement – and is instead widely understood as a “second chance” or “second best” option for those not able to obtain a Bachelor's degree. It's common for employers to believe that apprenticeship requires union participation.

Negative image and misunderstanding also exists among prospective participants. For example, “many youth assume that the only path to a good job is a four-year university education, while many jobs require a different form of post-secondary education” (Randolph 39). (In contrast, Secretary of Labor Perez characterizes apprenticeship as “the other college, only without the

debt.”) Apprenticeship can be overlooked as a career pathway given this misunderstanding of labor market needs and credentials.

Finally, there is a long-held belief that companies fear losing their investment in apprentices if they go to work elsewhere. In fact, worker retention was found to be an impediment to investing in registered apprenticeship, according to a series of industry roundtables conducted by The Office of Apprenticeship in June 2014. These roundtables represented over 250 employers, intermediaries and workforce professionals in a range of industries and geographies. However, SAF’s interviews show that companies engaged in apprenticeship activity do not share this view and often see that the apprentice is more engaged and likely to stay.

Lack of infrastructure: A lack of knowledge of what apprenticeship is and a vision for what it could be prevents apprenticeship from developing into a full-fledged field of practice. Survey respondents (21%) reported a dearth of viable career pathways connecting pre-apprenticeship and/or higher education. 21% of SAF’s survey respondents reported that they struggled with the lack clear roles for meaningful partnership development. While apprenticeship is desired in new and emerging occupations such as IT and advanced manufacturing, 15% of those surveyed note that there is generally insufficient industry-specific guidance, particularly regarding incipient careers. Despite some available resources including a recently published DOL employer toolkit, employers generally do not know how to go about setting up a registered apprenticeship program. The lack of clarity around requirements for credential attainment and hiring apprentices was cited as a barrier by 31% of those surveyed.

Differing systems and varied registration processes: 42% of those surveyed were challenged by the process of registering an apprenticeship program and navigating differing state and/or federal processes. The complexity is due in part to the range of apprenticeship systems and the way they vary from state to state. The registered apprenticeship system has authorities at either the federal or state level, depending on the state. Additionally, there are unregistered apprenticeship programs that operate outside of the federal or state system entirely. Unionized industries often have their own regulations. Finally, businesses face their own industry regulations as well and, at times, they simply may not want to work with government agencies to establish a registered apprenticeship program. Coupled with these challenges is the poor articulation between apprenticeship and higher education and secondary systems. The benefits of taking

the extra steps to comply with paperwork and regulations are not well articulated, and often these steps seem more daunting than they might need to be.

Moving from challenges to opportunity

To get a sense of how challenges have been overcome by existing programs, and the prevailing resource gap, SAF asked survey participants what resources *were helpful* and what resources *would have been helpful* in their apprenticeship experience.

Leveraging what’s in existence: Employers and practitioners attribute their ability to move beyond barriers to 1) their ability to tap resources already in existence such as curriculum, templates for administrative agreements, marketing materials and student forms; 2) their capacity to tap more experienced programs through information sharing and site visits; and 3) adding partners to the immediate team who have experience and background in apprenticeship. When it comes to partnerships, generally, cross sector relationships between industry/government/academic collaborations, support from local universities and colleges and strong bonds with employers are credited as most valuable. Survey respondent names specific organizations such as the AHIMA Foundation, labor organizations, the US DOL Office of Apprenticeship and state offices of apprenticeship as helpful resources in their start-up process. Some survey participants did not view these resources as widely available.

In with the new: Existing resources and other apprenticeship programs were cited as the most desirable tools for moving a program from concept to registration. Yet, there is a demand for new, tailored and accessible resources. For example, 36% of those surveyed desire a central point of contact to consult for technical inquiries; 33% would like a repository of reports, best practices, playbooks and other written materials to consult; consultations and facilitated work sessions with subject matter experts were welcomed by 31%; and 28% seek a larger movement or community of practice. Only 15% of respondents view adding partners to the immediate implementation team as a helpful change, although in practice 36% attribute their success to new relationships.

Respondents also mentioned their need for more flexibility within federal guidelines, a web site devoted towards the implementation process from start to finish and access to useful data. Although some of these materials may exist, survey responses suggest there needs to be more help and direction to locate and navigate the information.

A leader for the field: Respondents identified that they want more dedicated support from entities such as the Department of Commerce, a national resource organization and employers. However, this leadership must come from an organization that is well-respected. Survey respondents reported that business leadership

organizations (31%) and state apprenticeship offices (28%) were viewed as the most influential entities to provide this support. Community colleges or other educational institutions along with the public workforce development system were also seen as authoritative.

| ANSWER OPTIONS | WAS HELPFUL | WOULD HAVE BEEN HELPFUL |
|---|-------------|-------------------------|
| Already existing curriculum and templates for administrative agreements, marketing materials, student forms, etc. | 45.2% | 43.6% |
| Other apprenticeship programs and site visits | 35.7% | 38.5% |
| Adding partners to your immediate team | 35.7% | 15.4% |
| A central point of contact to consult for technical inquiries | 33.3% | 35.9% |
| A repository of reports, best practices, playbooks and other written materials to consult | 26.2% | 33.3% |
| Consultations and facilitated work sessions with subject matter experts | 26.2% | 30.8% |
| A larger movement or community of practice | 9.5% | 28.2% |

Part 3: Structuring apprenticeships for greater equity and inclusion

Employers and colleges surveyed want to support non-traditional populations yet 17% struggle to recruit, select and support participants. Women, racial minorities, youth and other underrepresented populations participate in apprenticeships at far lower rates than white men. For example, “in 2012, only 6% of active apprentices in the United States were women, up slightly from 5 % in 2008” (Ayres and Olinsky 24). This is particularly true of the traditional skilled trades where, “no more than 6 % of any one of the top 10 apprenticed occupations in 2012 were female” (Ayres and Olinsky 24). A 2012 study by the Mathematica Policy investigating the barriers that women face in registered apprenticeships and best practices for getting more women involved and successful in apprenticeship notes that in comparison to men, women are vastly underrepresented in the registered apprenticeships program.

Why aren’t there more women and people of color engaged in apprenticeship? David Aldstadt of The Working Poor Families Project attributes the low enrollment of minorities and women in apprenticeship programs to, “several reasons including personal preferences for work and exclusionary practices of unions, contractors and governments” (Aldstadt 14). However, it’s important to note that female apprentices hold favorable reviews of

their program experience valuing their participation in apprenticeship as a means to career advancement and higher wages.

Research has shown that, “joint programs with union participation have higher enrollments of women and people of color and significantly better performance as measured by attrition and completion rates” (Ayres and Olinsky 33). These examples are indicators that more successes can be realized with mindfulness towards the present challenges and equally effective strategies.

Structuring apprenticeships for greater equity and inclusion will require a range of actions including: 1) participant outreach; 2) meaningful pre-apprenticeship efforts; 3) affordable classroom training; 4) engaging more businesses; and 5) programs that address supervision and the workplace environment.

Participant outreach: Despite the existence of federal mandates (Equal Employment Opportunity (EEO) in Apprenticeship and Training, 29 CFR-30), “Women and minorities have historically encountered discrimination when applying and interviewing for apprenticeships” (Aldstadt 4). The federal EEO mandate has both recruitment and admittance goals for women and minority

participants, particularly in instances where enrollment does not meet local employment trends. “Good-faith efforts” to meet EEO criteria are regulated by state and federal offices whereby compliance reviews and follow up actions are administered by either federal field staff or state apprenticeship offices, depending on the state. The Mathematica report notes an instance where state targets for women in construction trades were unmet for 20 years, treated more like suggestions and less like quotas (Mathematica 47). Uneven monitoring standards and practices are watering down the impact of EEO 29 CFR-30 whereby, “minorities and women initially made inroads in apprenticeships and the skilled trades, but gains have leveled off in recent years as enforcement of affirmative action has waned. (Bilginsoy 2005) (Berik and Bilginsoy 2005) (GAO 2005)” (Aldstadt 14-15).

The advancement of minority and women apprentices can be reclaimed with adjustments to enrollment efforts and consistent EEO oversight standards. “Targeted outreach and recruitment campaigns that emphasize apprenticeship opportunities as a form of postsecondary education” (Mauldin 19) can help to diversify and enhance the attractiveness of apprenticeship.

Increased outreach alone is likely to be insufficient. One researcher (Aldstadt) offers six actions for federal and state agencies to consider in helping promote greater diversity and inclusion in apprenticeship programs:

- 1) Increasing the number of state staff hours spent reviewing programs for compliance with affirmative action requirements;
- 2) Taking a tougher stance in determining whether sponsors have made “good-faith efforts” to comply with affirmative action requirements;
- 3) Establishing incentives, in the form of increased state support, for programs that adhere to female and minority enrollment goals based on DOL’s four point analysis of labor availability, instead of the apprenticeship participation rate from the preceding year;
- 4) Providing technical assistance to program sponsors on effective outreach and recruitment strategies;
- 5) Facilitating partnerships between program sponsors and women/minority groups and employment service providers seeking to refer individuals to programs; and
- 6) Reporting apprenticeship enrollment and demographic figures accurately and fully on an annual basis. (Aldstadt 40)

Pre-Apprenticeship: Low-income, low-skilled adults, women and youth often face academic deficiencies that make it difficult to pass entrance exams and meet other

program requirements. Pre-apprenticeship training can help prepare lesser skilled individuals for apprenticeship. Pre-apprenticeship training is typically provided by community and faith-based organizations, community colleges, workforce investment boards, or labor-affiliated sponsors of apprenticeship. A Workforce Strategies Initiative study found that about half of the pre-apprenticeship programs surveyed were driven by a mission to explicitly help underrepresented or disadvantaged job seekers (Conway and Gerber 38). Funding support largely comes from federal, state and local governments. And, completion rates in high quality pre-apprenticeships are generally high. For young people, a successful pre-apprenticeship experience often includes goals such as GED attainment and career exposure (Conway and Gerber 38). It would thus seem the establishment of more pre-training programs there would be an increase in the number of apprenticeship-ready individuals from under-represented communities.

However, when training-ready candidates look to transition to an apprenticeship there is a breakdown. Despite high pre-apprenticeship completion rates individuals face low job and apprenticeship placements. Aldstadt attributes this phenomenon to, “weak or nonexistent partnerships with registered apprenticeship programs and construction employers” (17). Conway and Gerber attribute this disjointed progression to the difficulty of predicting the availability of apprenticeship slots.

Employer interventions such as, “Registered apprenticeship programs (need to) establish formal partnerships with apprenticeship prep programs” (Aldstadt 18) and “project labor agreements and apprenticeship utilization” (Conway and Gerber 38). Participants seeking registered and non-registered apprenticeships in any industry can benefit from secured relationships between prep and occupational training providers.

Affordable and paid classroom training: When unreliable child care and lack of transportation to work pose challenges for women, youth and low-income, low-skilled adults, unpaid classroom training can further complicate and even deter program enrollment. Classroom and paid work experience typically occur in tandem in many apprenticeship programs, especially in the skills trades. Pre-requisites such as occupational credentials licenses (and for pre-apprenticeship, basic skills preparation), often require upfront classroom instruction without pay. Mathematica notes that social services and corrections officer apprenticeships, for example, necessitate having a set of skills prior to paid work experience components of

apprenticeship. In these instances, a program’s succession may preclude participants from being paid for the entire duration of training.

Aldstadt proposes two promising strategies for ensuring apprentices receive wages for learning time spent in the classroom: 1) require program sponsors pay for the hours spent in class and 2) ensure apprentices can be eligible for state-funded financial aid (22). Florida and Washington state provide tuition subsidies to community colleges for students in apprenticeship training and Wisconsin’s policies requires sponsors to pay participants hourly wages for classroom instruction (Aldstadt 16).

Engage a broader range of businesses: In its research about women’s participation in apprenticeships, Mathematica discusses the opportunity of expanding apprenticeships’ reach by including non-traditional industries. The high incidence of women in social services occupations such as child care (34 % of women) and nursing aides (6 % of women) is of interest because, “apprenticeships in these occupations have begun only fairly recently” (Mathematica 47). Relatedly, the Center for American Progress proposed that the Department of Labor identify new, “apprenticeable” occupations in which women comprise a disproportionate share of workers; emphasize high-growth occupations for which apprenticeships could significantly boost wages; and State apprenticeship agencies be required to research labor markets in which women comprise a disproportionate share of workers. (50) A similar course of action is already underway with the recent Department of Labor American Apprenticeships grant that targets high-growth industries such as Information Technology, Advanced Manufacturing, Business Services and Healthcare. The diversity of industries across the 46 federal grants awarded is as follows:

| INDUSTRY | # OF PROGRAMS IN SECTOR | % OF PROGRAMS IN SECTOR |
|------------------------|-------------------------|-------------------------|
| Advanced Manufacturing | 28 | 60.9% |
| IT | 24 | 52.2% |
| Healthcare | 13 | 28.3% |
| Other | 5 | 10.9% |
| Transportation | 6 | 13.0% |
| Construction | 5 | 10.9% |

Eliminate worksite harassment: Finally, Mathematica notes that the comparatively low completion rate of women apprentices in male-dominated fields likely reflects their challenges as a minority group at the worksite (47). People of color, young people and others in minority/majority work arrangements are susceptible to intentional and unintentional prejudicial behavior. Employers need support and assistance in training supervisory staff, creating and enforcing policies to combat harassment at minority/majority worksites and connecting apprentices with their peers for support and encouragement. The following suggestions from Mathematica’s survey can be broadened beyond male-dominated workplaces to include other underrepresented groups:

- ◆ Provision of technical assistance to employers to develop methods to recruit and to develop and implement effective policies. Include increasing majority workers comfort with and ability to work with underrepresented populations, which could contribute to decreasing overt and subtle discrimination at worksites.
- ◆ Increase monitoring of sponsors and employers could improve working conditions without the impacted individual having to directly file a complaint.
- ◆ Connect participants with effective mentors and peer support. Teach effective mentorship techniques to all workers. For example, Wisconsin’s Transition to Trainer, as a successful approach to developing strong mentorship programs at construction worksites. This eight-hour course “teaches soon-to-be journey workers how to serve as a mentor and job coach, how to provide hands-on skill training and how to give positive and effective performance feedback.
- ◆ Peer sharing even across job sites. Consider peer-to-peer support group meetings when an on-the-job mentor cannot be provided (for example, due to lack of experienced peer on the job site); monthly social hours; giving advice on how to stand up for themselves; and discussing techniques for effectively communicating with supervisors. (Mathematica 54-55)

Recommendations

Growing apprenticeship and ensuring that it expands economic opportunity will require concerted action from a range of stakeholders. This section of the report seeks to identify actions that will re-shape the architecture of knowledge, practice, supports and policy.

Calculating the Value of Apprenticeship

To successfully engage in apprenticeship, stakeholders should have a comprehensive view of their business needs and apprenticeship's value on both the demand and supply sides of the marketplace.

- ◆ Businesses need to be exposed to the value of apprenticeship as evidenced by other companies: Testimonials and case studies about apprenticeship investments and results and site visits to apprenticeship programs help expose business leaders and those considering apprenticeship to the possibilities and benefits. Interviews with employers showed a strong interest in better leveraging the knowledge and experiences of other companies, but the mechanisms for facilitating this information sharing are nascent or nonexistent.
- ◆ In addition to recruiting and onboarding new workers, businesses should utilize apprenticeship as an opportunity to re-train and upskill incumbent workers. Apprenticeship training can keep current employees in-touch with industry changes and advancements and can prepare incumbent workers for positions with greater responsibility and wages. Further, incumbents can be positioned to mentor and encourage new apprentices as part of an ongoing pipeline.
- ◆ Businesses should use pre-apprenticeship and apprenticeship to enlarge their pool of worker talent by targeting youth and other underrepresented populations. High school students, veterans, women, unemployed and underemployed, people of color, re-entry, immigrants and others can provide new sources of skills and capabilities, greater workplace diversity and more access to middle class economic opportunities for special populations. Apprenticeships can be a pathway to guide and integrate these populations into the organization.
- ◆ Businesses should work directly with education and training partners to design programs that align with the skills they need and the company culture. Sponsoring in-house apprentices is a means to address current workplace necessities while anticipating future business needs because of the direct involvement of the company or industry in the design. Companies can effectively utilize education, training and workforce systems to develop customized programs. A company can design a customized apprenticeship focused on proprietary skills and preservation of company culture, to produce high quality training.
- ◆ Businesses should use pre-apprenticeship and apprenticeship to enlarge their pool of worker talent

Overcoming the Start-up Challenge

To move beyond the traditional barriers to apprenticeship, including unclear guidelines, apprenticeship stigma and an insufficient support infrastructure, resources should be centralized and communicated in a more transparent, effective and engaging way.

- ◆ Policy makers can designate lead organizations, individual(s) and intermediaries to offer dedicated support and help the development of a field of practice – as, for example, policy makers in South Carolina have done with the community and technical college system of the state. Leaders in a particular industry should be encouraged to help motivate the industry sector to expand its efforts for both traditional apprenticeships.
- ◆ Leader organizations should be supported in developing and disseminating new, tailored and accessible resources such as a central repository of resources to consult. Of course, the process would start with organizing and collating existing resources and vetting them with the stakeholder groups to identify what works and what is needed.
- ◆ In the meantime, businesses, schools, intermediaries and others can leverage existing resources. Curricula,

marketing materials, the experience of already-established programs and partners with prior experience and background in apprenticeship should be amplified and promoted as part of a strategic campaign. Registered Apprenticeship-College Consortium (RACC) members should be mobilized to share information and resources that have successfully helped integrate apprenticeship programs on their campuses.

- ◆ Policymakers, businesses, schools and other stakeholders should present apprenticeship as a premier education and training option. Apprenticeship has status in other countries where it is viewed as a respected and successful part of the education system. The U.S. needs to look at elevating the status of these programs by incentivizing business and highlighting opportunities and results.
- ◆ Businesses, organizations, schools and colleges should enlist as support organizations and intermediaries.

Interviews with businesses in this study suggest that the availability of support from these organizations help employers that understand apprenticeship as it relates to upskilling, career pathways and work-based learning. These partners can fortify the knowledge base, bring in outside expertise and fill-in learning gaps

- ◆ Businesses should consider unregistered apprenticeship as an on-ramp to sponsoring a registered apprenticeship. To start, businesses should focus on getting other program elements in place. Pilot the program to test its effectiveness and work out issues. They can then register the apprenticeship once there is evidence that the program is successful to ensure sustainability and standards. Public policy and apprenticeship-enabling workforce development and education organizations should foster on-ramps to apprenticeship that allow employers to pilot and test the apprenticeship approach.

Apprenticeship for Improved Workplace Diversity

When engaging nontraditional populations in apprenticeship, educators and employers should structure the training with intentionality to reach and provide opportunities to specific populations and in occupations where they can build careers.

- ◆ Businesses, schools and colleges should recognize the opportunity to attract a diverse group of workers through apprenticeship as part of targeted outreach and recruitment campaigns. These campaigns should be designed to elevate the perception of apprenticeship and the opportunity apprenticeships provide to earn and learn and advance to known job opportunities. Greater opportunities and access for a more diverse group of apprentices can be achieved by developing programs in new industries in partnership with organizations that represent and serve these groups.
- ◆ Community colleges, non-profits and industry efforts to serve underrepresented populations should help establish training models that effectively advance participants into apprenticeship programs. As innovators of remediation courses and other preparatory programming, community colleges and non-profits are positioned to advance this agenda, which aligns well with current efforts to support opportunity youth by providing a set of clear, skills-focused career pathways and hiring opportunities. This work should start by examining existing pre-apprenticeship models for elements that are deemed

“best practices” for raising skill levels, linking women and other non-traditional populations to jobs, connecting participants to high quality jobs or to apprenticeships, serving participants in a cost-effective manner, successful partnerships and key roles for partners and responding to employer needs (Conway and Gerber 38-39).

- ◆ States should consider ways to support apprentices with stipends or paid wages for classroom instruction. Where they do not do so already, state funded financial aid policies should be amended to include apprenticeship classroom instruction. WIOA opportunities for supporting apprenticeship education and training activities need to be understood and communicated.
- ◆ To eliminate worksite harassment and avoid discrimination, intermediaries should connect businesses with community-based non-profits and other organizations with expertise in serving underrepresent populations. These partners can serve as technical assistance providers for designing and implementing effective workplace policies, increasing majority workers comfort with and ability to work

with underrepresented populations and teaching best practices for leading workplace mentorship and peer support program.

References

- Altstadt, David. "Building Opportunity: How States can leverage Capital and Infrastructure Investments to Put Working Families on a Path to Good Jobs." The Working Poor Families Project. http://www.workingpoorfamilies.org/pdfs/Building_Opportunity.pdf
- Aring, Monika. "Innovations in Quality Apprenticeships for high-skilled manufacturing jobs in the United States: At BMW, Siemens, Volkswagen." ILO 2014. http://www.ilo.org/wcmsp5/groups/public/---ed_emp/---ifp_skills/documents/publication/wcms_244374.pdf
- Ayres, Sarah and Olinsky, Ben. "Training for Success: A Policy to Expand Apprenticeships in the United States." American Progress. November 2013. https://cdn.americanprogress.org/wp-content/uploads/2013/11/apprenticeship_report.pdf
- Conway, Maureen and Gerber, Allison. Construction Pre-Apprenticeship Programs: Results from a National Survey. Workforce Strategies Initiative. July 1, 2009. <http://www.aspeninstitute.org/sites/default/files/content/docs/pubs/09-007.pdf>
- Randolph, Gregory (editor). 2014. "Overcoming the Youth Employment Crisis: Strategies from Around the Globe." Just Jobs Network. October 2014. <http://justjobsnetwork.org/wp-content/pubs/reports/Overcoming%20the%20Youth%20Employment%20Crisis.pdf>
- Reed, Debbie, Albert Yung-Hsu Liu, Rebecca Kleinman, Annalisa Mastri, Davin Reed, Samina Sattar, Jessica Ziegler. "An Effectiveness Assessment and Cost-Benefit Analysis of Registered Apprenticeship in 10 states." Mathematica Policy Research. Final Report, July 25, 2012. http://wdr.doleta.gov/research/FullText_Documents/ETAOP_2012_10.pdf
- The Federal Resources Playbook for Registered Apprenticeship, <http://www.doleta.gov/oa/federalresources/playbook.pdf>
- Maher and Maher. U.S. Department of Labor Office of Apprenticeship Report on Industry Roundtable Discussions. June 2014. http://www.doleta.gov/OA/pdf/OA-Industry-Roundtable-Summary_20140728r1.pdf
- Mauldin, Bronwyn. Exploring how Career Technical Education, Work-Based Learning and Apprenticeship Can Address Youth Unemployment and Meet Employer Needs for Skilled Workers. May 14, 2014. http://www.workforce-matters.org/uploads/4/0/3/1/40318717/youthappren_aecf_final_05142014.pdf

