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Intermediaries Play Key Role in Expanding Apprenticeships*

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Many government and foundation leaders believe that intermediaries are needed to expand the level of apprenticeship activity in the U.S. This article provides context for the increased attention on intermediaries and examines the model and track record of the Vermont Healthcare and Information Technology Education Center, better known as Vermont HITEC, a leading apprenticeship intermediary.

Background

The Obama administration is striving to double the number of apprentices in the U.S. from about 375,000 in 2014 to 750,000 in 2019.¹ In pursuit of this goal, the U.S. Department of Labor (DOL) has awarded \$175 million in American Apprenticeship Initiative (AAI) grants and will be awarding \$60 million to support state strategies to expand apprenticeships and \$30 million to catalyze industry partnerships in fast-growing industries. Two leading intermediaries that have significantly increased apprenticeship activity in the past decade are Vermont HITEC,² a nonprofit organization, and Apprenticeship Carolina,³ a state-initiated program embedded in the state's community colleges that provides a state tax credit to employers that hire apprentices.

John V. Ladd, administrator of the Office of Apprenticeship in the DOL, said: "We believe intermediaries are critical to both scale apprenticeship in multi-employer apprenticeship models and to assist employers in starting new programs. Intermediaries bring subject matter expertise related to their industries, reduce the burden on individual employers to start apprenticeship programs, and can spread risk and cost across a wider range of employers."

This summer, DOL will award up to eight contracts for intermediaries to expand apprenticeships, especially in health care, advanced manufacturing, energy, transportation, construction, insurance and financial services, and cybersecurity.⁴ Ladd said that the "DOL will expect that all of the intermediaries or coalition of intermediaries will have a national footprint or be able to operate at a national level."

Sarah Ayres Steinberg,⁵ vice president of global philanthropy at JPMorgan Chase & Co, said that JPMorgan Chase has made apprenticeships and apprenticeship intermediaries a funding priority in the U.S., Germany, Spain, and the United Kingdom. Chase is funding the Urban Institute to provide technical assistance to states seeking to expand and strengthen their apprenticeship systems, including by supporting intermediary organizations that facilitate engagement between employers and educators, she said. Chase is also helping fund a study⁶ that is examining the return on investment (ROI) for employers that provide apprenticeships.

Ayres Steinberg said: "The most effective intermediaries are 'bilingual,' in that they can speak the language of both employers and educators. But intermediaries aren't just translators; they are convening employers to define skills, developing national guideline standards for apprenticeships, connecting multi-region efforts and developing multi-employer models, documenting best practices, and providing the ongoing infrastructure to

support apprenticeships in an industry." She added that apprenticeship intermediaries can be local, regional, or national in scope.

In its banking operations, JPMorgan Chase & Co. is developing pre-apprenticeships and registered apprenticeships (RAs) for 43 computer and information technology (IT) students at Houston Community College, which received a \$4.2 million AAI grant last fall. The students will receive associate of applied science degrees. In the United Kingdom, Chase has trained about 100 IT apprentices, is currently developing a university-equivalent IT apprenticeship, and has started an 18-month financial services apprenticeship program.

Robert I. Lerman,⁷ professor emeritus in the department of economics at American University and institute fellow at the Urban Institute, said "Intermediaries undertake one or several functions. They include marketing the apprenticeship brand in a state or locality, persuading employers to adopt apprenticeships, helping employers through the design and administrative tasks required to establish an apprenticeship, and conducting or arranging for the off-the-job training related to the apprenticeship occupation. The process may involve assisting employers to register their programs with the state and/or federal apprenticeship offices and negotiating with a community college or other for-credit institution. The example of Vermont HITEC is especially noteworthy because of its record in performing virtually all the tasks undertaken by apprenticeship intermediaries."⁸

Vermont HITEC

Vermont HITEC has been profiled as a promising intermediary partnership in a DOL case study⁹ and is one of five apprenticeship models highlighted in a 2014 Center for American Progress report.¹⁰ Gerald Ghazi, J.D., president and board chair of Vermont HITEC, is one of the Urban Institute's technical assistance providers to states.

Ghazi, a former software engineer, cofounded Vermont HITEC as a 501(c)(3) nonprofit in 2000 to offer a rigorous educational program in which Vermonters could demonstrate to employers their ability to perform a position before being hired. Vermont HITEC provides an eight- to 10-week intensive educational program at the employer site at no cost to the participant followed by a competency-based accelerated apprenticeship lasting no more than one or two years.



An apprentice in a HITEC apprenticeship program at Vermont Precision Tools operates an electrical discharge machining (EDM) drill to create very small precision holes on the end of a long thin part. EDM is a very precise material removal process that works on the principle of using an electric arc

Before Vermont HITEC organizes an educational program, it obtains written employer(s) commitments to hire all its education program graduates as apprentices, with predefined stepped-up livable wages and full benefits.¹¹ For its part, Vermont HITEC commits to employers that graduates of Vermont HITEC's education programs will have all the necessary skills, including soft skills, to enter a competency-based accelerated apprenticeship. Vermont HITEC designs educational programs only for full-time positions with full benefits.

Ghazi explained that after employers commit to the educational program and RA, they usually go through deep organizational change involving the employers' human resources, legal, finance, and operations departments and often redefine work processes and job definitions.

to quickly heat and vaporize material.

Photo Credit: Andrew J. Lutton

"Employers and apprentices are both investing in a long-term relationship," Ghazi explained. "The employer is committing to hire them without competency and invest in their education and mentoring throughout their apprenticeship, and the apprentice is willing to earn the education and competencies commensurate with the stepped-up wages being paid. This builds long-term loyalty and retention."

Apprentices also face significant challenges. Ghazi explained: "We're creating professional and personal transformation. The challenge is getting them to believe in themselves and fight the external forces that create a mentality of failure. Once we get them to the point of believing in themselves, there's no end in sight for these individuals. Transformation at a family-unit level also occurs at home when children see their parents studying four hours a night every night to accomplish a goal."

Vermont HITEC has two unusual elements. First, it does not require participants in its programs to have prior experience or a particular educational background. Second, it follows a "reverse engineering" approach in the development of its educational curriculum for the employer's sponsored positions. In this approach, a Vermont HITEC staff member goes on site at the employer, with a company badge and access to all systems and procedures, to learn a position from scratch by performing all the essential functions of the job. Ghazi explained that in the second month, the Vermont HITEC staff member "begins to reflect backwards on the learning experience to take the job apart." Only then does the staff member produce the academic program and apprenticeship competencies needed to perform the job.

The Vermont HITEC program has three key parts:

- **Curriculum development and recruitment:** A Vermont HITEC staff member performs the work of the position for up to three months at the employer site. The employer approves the job definitions, technical and behavioral competencies of the position, and graduation requirements of the program, and Vermont HITEC designs a curriculum that blends job-specific skills and general industry skills. Simultaneously, Vermont HITEC conducts outreach and recruits candidates through the state workforce system as well as social and traditional media.¹² Vermont HITEC uses an orientation session, aptitude assessments, behavioral observations, program and employer interviews, and work simulations to evaluate candidates for attitude, enthusiasm for a new career, fit with the employer's culture, and ability to take direction and communicate effectively. Employers select, sponsor, and commit to employ graduates from a prescreened applicant pool equal to the number of jobs they are committed to providing.
- **Education:** Selected candidates participate in an intensive accelerated unpaid pre-apprenticeship educational program in which they participate in all-day classroom education and spend another three to four hours per weekday evening and weekends on course work. Students gain extensive knowledge of a field and position in a short time through course work in the evenings, classroom instruction, discussions and projects, online instruction, and laboratory or clinical work. Vermont HITEC staff, along with its state support service partners, help apprentices with support services as needed, including housing, transportation, clothing, and mentoring, and work with Burlington College and its Institute for American Apprenticeship¹³ and other community colleges so that participants receive college credits for instructional areas mastered. Upon graduation from the education program, they earn 24 to 30 credits and an academic certificate. They also earn additional college credits during their competency-based one- to two-year apprenticeships. Vermont HITEC project leaders observe and mentor students in 26 behavioral competencies, such as working in teams and following rules, and give individual feedback that becomes part of the graduation requirement for both the education and the apprenticeship.
- **Apprenticeship:** Apprentices work full time with full benefits at the employer's work site and apply the technical and behavioral competencies on a daily basis, assisted by a Vermont HITEC mentor, an

employer mentor, or both. Apprentice knowledge is evaluated monthly, and merit increases are earned for mastery of key competencies. Vermont HITEC staff and its state partners continue to provide support services as needed. Apprentices who complete the education and apprenticeship are "fully titled" employees. They are considered fully proficient to perform the job and earn an industry-recognized credential, an academic certificate and credit toward an associate's degree, national certification when available, and a certificate of completion from the U.S. DOL's Office of Apprenticeship.

Track Record

Vermont HITEC has organized more than 70 RA programs for nearly 40 employers in Vermont and New Hampshire in health care, IT, advanced manufacturing, and business services. The 70 include 10 programs for Dartmouth-Hitchcock Medical Center in New Hampshire.

Some 1,379 students enrolled in Vermont HITEC programs that were completed by May 27, 2016. Of these students, 93 percent graduated and became employed, and 93 percent of those employed completed a one-year RA. Annual wages after apprenticeships ranged from \$24,000 to \$60,000. Some employees received bonuses and commissions following apprenticeships.

Employer Perspectives

Two of the three employers interviewed for this article said that Vermont HITEC helped them train employees more quickly than the employers could have done on their own. Administrators and managers must be flexible, open to change, and willing to take time to mentor apprentices, the employers agreed.

Hypertherm, an employee-owned manufacturing and engineering company with 1,450 workers based in Hanover, NH, has trained about 550 apprentices since 2007 in computer numerical control (CNC) machining with good results. Matt Burge, leader of Hypertherm's technical training institute, said industry-related education should be paired with on-the-job training, not conducted separately, and must be delivered in an industry context. One feature of Vermont HITEC-related apprenticeships is that they can be customized for the individual employer. This customization, said Burge, is important because techniques for using new equipment can vary from one company to another. He added that it's a challenge to keep even apprenticeship-related education abreast of increasingly complex technology advances.

The employers have also found that apprenticeships provide a window to reexamine management processes and procedures and allocate resources more efficiently. For example, during the course of the apprenticeships, the Dartmouth-Hitchcock Health System changed practices and improved employee retention, said Sarah J. Currier, director of workforce development at the system. The companies include this reexamination of processes as a type of ROI, although they do not have precise measures of ROI. Hypertherm has instituted an eight-member technical training institute that performs some Vermont HITEC functions of determining promotions-based knowledge and competency standards, as well as recruiting apprentices.

Apprentices need assistance in such areas as child care and transportation, and Vermont HITEC provides a valuable "connection point," identifying social service programs and funding opportunities and facilitating relationships with program directors, observed Laurie Gunn, vice president of human resources at the University of Vermont Medical Center.

Currier commented: "Apprentices feel invested in and they want to help people behind them. They're used to being pushed and stretched and learning new things. There must be a career path for them to continue to grow." She added that apprenticeships are a good way to add diversity to the workforce.

For more information, contact Gerald Ghazi at gerry.ghazi@vthitec.org ; www.vthitec.org.

Resources

Gerald Ghazi, "Training for Real Jobs: When Motivation Means Opportunity," *Communities and Banking*, Federal Reserve Bank of Boston, 2008, available at www.bostonfed.org/commdev/c&b/2008/winter/Ghazi_Vermont_HITEC_Inc.pdf.



* The views expressed here do not necessarily represent the views of the Federal Reserve Bank of Philadelphia or the Federal Reserve System.

¹ U.S. DOL, "Labor Department Proposes Rule to Help Employers, Sponsors Grow, Diversify Their Apprenticeship Programs," November 5, 2015, available at www.dol.gov/opa/media/press/eta/ETA20152161.htm.

² See www.vthitec.org.

³ See www.apprenticeshipcarolina.com.

⁴ See the request for information (RFI) at www.fbo.gov/utills/view?id=fca63c09b6f5c76cff67203f1458a3a. An intermediary is defined in the RFI as an industry association, labor-management partnership organization, workforce intermediary, consortium of employers, statewide community college system, or consortium of community colleges.

⁵ Ayres Steinberg is a primary author of a JPMorgan Chase & Co. report, "Tech Jobs for All? Exploring the Promise & Pitfalls of Technology Training in the United States," JPMorgan Chase & Co., February 2016, available at www.jpmorganchase.com/corporate/Corporate-Responsibility/document/JPMC-tech-training-report-web.pdf.

⁶ U.S. Department of Commerce, "Joyce Foundation, JPMorgan Chase, and the Annie E. Casey Foundation Support Apprenticeship Return on Investment Study," September 18, 2015, available at www.commerce.gov/news/blog/2015/09/joyce-foundation-jpmorgan-chase-and-annie-e-casey-foundation-support.

⁷ Lerman is the founder of the American Institute for Innovative Apprenticeship. See <http://innovativeapprenticeship.org>.

⁸ Lerman noted that, in contrast, Apprenticeship Carolina undertakes some intermediary functions, such as marketing apprenticeships, helping firms register apprenticeships, and linking firms with training, but does not itself conduct training.

⁹ U.S. DOL, "Promising Partnerships: The Workforce System and Registered Apprenticeship — A Deeper Look into Models of Success," ApprenticeshipUSA Case Study, available at www.dol.gov/apprenticeship/pdf/HITEC_Case%20Study.pdf.

¹⁰ See Sarah Ayres Steinberg and Ethan Gurwitz, "Innovations in Apprenticeship: 5 Case Studies That Illustrate the Promise of Apprenticeship in the United States," Center for American Progress, September 2014, available at <https://cdn.americanprogress.org/wp-content/uploads/2014/09/ApprenticeshipInnov-report1.pdf>.

¹¹ In multi-employer educational programs, employers sign agreements not to recruit from other employees in the programs.

¹² It seeks veterans, dislocated workers, older youths, refugees, older workers, and individual with disabilities.

¹³ See <http://blog.burlington.edu/burlington360/topic/institute-for-american-apprenticeships>.