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Iowa High School Apprenticeships: Creating Pathways to Promising Careers

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Iowa has begun expanding youth apprenticeships across the state to ensure high school students have opportunities to earn income while they learn the skills for a rewarding career. Although many high schools across the US have work-based learning programs, Iowa's initiative is notable for its quality and focus through Registered Apprenticeships, engagement of high schools as apprenticeship program sponsors, and potential for growing youth apprenticeships based on employer and student interest. Partnerships between high schools and private sector businesses drive the youth apprenticeship initiative's success, as both schools and companies deliver high-quality technical education to help student apprentices become qualified and perform well in various occupational areas.

Background

Iowa's statewide initiative to expand youth Registered Apprenticeships is led by various organizations, including the Governor's Office, US Department of Labor's (DOL) Office of Apprenticeship (OA), Iowa Workforce and Economic Development, companies, high schools, and community colleges. These groups collaborate to regularly develop, fund, and support the youth apprenticeship model through local high schools (and school districts) that are hubs for the apprenticeship activities.

BOX 1

Youth Apprenticeship Intermediary Project: Case Studies

The Urban Institute's Youth Apprenticeship Intermediary project is funded by the US Department of Labor to expand youth apprenticeships, raise awareness of their potential to connect young people to promising career paths, and help employers meet their talent needs. The Urban Institute team will capture promising practices in yearly case studies that highlight prominent youth apprenticeship models, programs, or initiatives. This brief is part of this larger series and illustrates how high schools can provide administrative infrastructure to help young people, employers, and colleges create a successful youth apprenticeship ecosystem.

The Iowa High School Registered Apprenticeship Model

In Iowa's youth apprenticeship model, high schools provide critical services to support Registered Apprenticeship programs, acting as apprenticeship sponsors. With schools as Registered Apprenticeship sponsors recognized by the DOL's OA, students know they are entering high-quality programs.

The apprenticeship program sponsor is a formal designation determined when registering an apprenticeship program. The sponsor has specific duties and responsibilities, including ensuring all apprentices are under written apprenticeship agreements; establishing standards of education and experience required of apprentices; hearing and resolving complaints for apprenticeship agreement violations; arranging evaluations of apprentices' progress; maintaining records of all apprentices; and communicating with the registration agency about apprenticeship enrollment, reinstatement, extension, cancellation, and completion (Career Academy and Vermeer 2018).

Specifically, the high school sponsor develops the plan (also known as standards) for the apprenticeship program with the local employer's guidance and input. The standards for delivering the apprenticeship in a particular occupation provide the basis for agreements between the employer and sponsor (the high school), and require several components:

- **On-the-job training**—the practical and "hands-on" experience apprentices learn on the job in collaboration with a mentor. On-the-job training in this model must last at least 12 months and is further defined by OA in collaboration with business and industry. The high school apprenticeships in Iowa we reviewed generally last more than one year but do not exceed two and a half years.
- **Job-related instruction** (related technical instruction)—the classroom instruction provided by the high school and frequently also through a local community college or online learning platform.
- **Progressive wages**—how much the employer pays the apprentices based on entry and advancing skills. Apprentices must earn at least minimum wage but usually earn more.

- **Supervision and mentoring**—apprentices are provided guidance and advice on the job by an experienced professional to learn the occupation, the company's business practices, company culture, employability skills, and other knowledge required to become proficient in the occupation.

Recent Efforts to Build a System

Before 2018, only one high school—Central Campus in Des Moines—had made the effort to start and register a youth apprenticeship program with the DOL OA. Previously, Iowa's apprenticeship efforts were largely focused on expanding adult apprenticeship through Registered Apprenticeships.

Linda Fandel, Governor Kim Reynolds' education advisor, explained that youth apprenticeships continue to be a priority for Governor Reynolds (sworn into governorship in 2017), which has been helpful in initiating partnerships and gathering momentum around the effort. Fandel indicated that youth apprenticeship is a cross-agency, cross-industry, union, and non-union conversation, whereby many stakeholders have a role in the initiative's success. The Governor's support and other critical actions have bolstered the public-private partnership approach to the high school youth apprenticeship initiative.

Iowa has been driving youth apprenticeship by convening stakeholders and investors in local institutions:

- Iowa received a State Apprenticeship Expansion Grant[1] of $1 million in funding for Registered Apprenticeships, including new high school apprenticeship programs.
- The Governor's Future Ready Iowa initiative includes high school apprenticeships as a major component of the effort. This initiative aims to have 70 percent of Iowans in the workforce with education and training beyond high school by 2025. (In 2019, 60.2 percent of Iowans had a credential or degree beyond high school,[2] a figure that has remained relatively flat since 2014.)[3]
- The Iowa Economic Development Authority provides grant funding (via the Iowa Apprenticeship Act or 15B) of $3 million annually to eligible existing Registered Apprenticeship programs to encourage and increase use of their apprenticeship programs.
- The state's Apprenticeship Development Fund (also known as 15C) offers grants totaling $1 million to program sponsors or employers to offset the costs of a Registered Apprenticeship.
- The Governor's STEM Advisory Council developed a High School Playbook for Registered Apprenticeship, which provides a guide for high schools and companies to start and administer new programs.
- Routinely, Iowa stakeholders collaborate through webinars, discussions at the Capitol building, Iowa Business Council meetings, and other engagements to encourage use of registered youth apprenticeships.

Partners in High School Apprenticeships

Twenty-six secondary schools are operating youth registered apprenticeships in Iowa, with 19 distinct high schools, career academies, or school districts serving as program sponsors. (Additionally, two high schools—Rock Island and Moline—in Illinois (both bordering Iowa), participate in the Iowa youth apprenticeship initiative that includes Iowa businesses.) These partners communicate regularly about financial or technical developments and supports to build the programs. Partners in the model include the following:

- Iowa Workforce Development (IWD), Iowa's state employment service agency, provides funding to support (youth) apprenticeships. IWD administers the State Apprenticeship Expansion funding and provides Registered Apprenticeship assistance to businesses and high schools.
- The DOL OA gives technical assistance to employers and schools. Led by State Director Greer Sisson and two apprenticeship and training representatives (Richard Madden and James Wightman), the OA provides businesses with registration services on behalf of DOL.
- Iowa community colleges, such as Eastern Iowa Community College, offer dual enrollment and college credit for high school apprentices.
- The Iowa Business Council (IBC) brings together Iowa's largest companies and leaders to discuss issues regarding the vitality of Iowa businesses.[4] Among its 22 members are Ruan and John Deere (Urban interviewed both establishments), which benefited from the Council's focus on youth apprenticeship as a workforce strategy.
- Employers deliver on-the-job training and test apprentices' competence in various occupations, including 67 employers in the state. Employers also provide wages and mentorship to young apprentices as they learn their occupations.

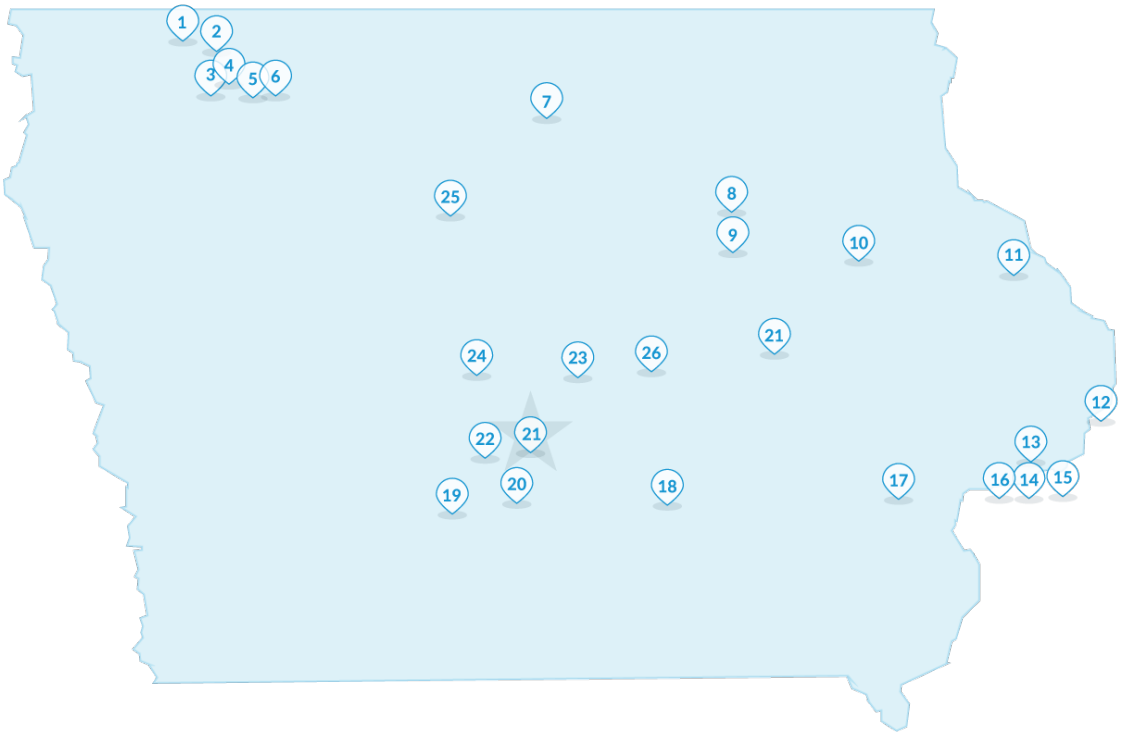
This case study describes how these partners come together to support youth apprenticeships. For example, let's consider how the Pella Career Academy formed its Registered Apprenticeship program. Pella Career Academy is a career and technical education institution in the Pella Community School District. The Academy takes a workforce and economic development–driven approach to educating its students and connecting them to local business and industry talent needs. The school started as a sponsor for Registered Apprenticeships in 2018, training young people to become welders, certified nursing assistants, and chefs.[5] The school was supported by the DOL OA with registration services and technical assistance in developing quality apprenticeships. Vermeer, a global manufacturer of industrial and agricultural machines, hired students from Pella Career Academy and provided mentorship in welding with professionals in the field. The governor visited the youth apprenticeship program as it launched in summer 2018.[6] A few months later, Iowa Workforce Development supported the academy with $15,000 for its newly formed high school apprenticeship program.[7] Partnerships are critical to Iowa's future success in attracting talented young people and growing opportunities for young people to obtain training and credentials for in-demand occupations.

Iowa Youth Apprenticeships by the Numbers

Iowa's overall efforts to raise awareness of Registered Apprenticeships in the state are beginning to show promising results. Iowa's expanded Registered Apprenticeships for 16- to 24-year-olds led to 4,500 new apprentices over the 2016–19 fiscal years, or about 1,100 a year. For 16- to 24-year-olds who completed apprenticeships in Iowa, annual earnings averaged $42,000,[8] much higher than average annual earnings for all 22- to 26-year-olds in the US in 2019 ($33,600) and 1.5 times the average earnings ($27,900) of 22- to 26-year-olds with a high school diploma but no bachelor's degree. Among youth apprentices in the state, the high school model includes 111 youth apprentices from 26 schools that participate in 12 different Registered Apprenticeships as early as age 16 (see figure 1 and table 1).[9]

FIGURE 1

Map of Iowa High Schools Participating in Youth Registered Apprenticeship



1. Harris-Lake Park Jr-Sr. High School
2. Spirit Lake High School
3. Okoboji High School
4. Estherville High School
5. Graettinger-Terril High School
6. Ruthven-Ayrshire School
7. Clear Lake High School
8. Waverly-Shell Rock High School
9. Waterloo Career Connection
10. West Delaware High School
11. Dubuque Senior High School
12. Clinton High School
13. North Scott Senior High School
14. North High School (Davenport)
15. Central High School (Davenport)
16. West High School (Davenport)
17. Muscatine High School
18. Career Academy of Pella
19. Winterset High School
20. Norwalk High School
21. Central Campus Des Moines
22. Valley High School
23. Nevada High School
24. Boone High School
25. North Central Career Academy
26. Marshalltown High School

TABLE 1

Sample of High School Apprenticeships in Iowa

	Occupations registered	Total number of apprentices	Total number of businesses participating
Central Campus	Building Maintenance, Child Care Development, Computer Support, Welder	40	23
Davenport	Electronic Systems Technician	15	5
West Delaware	Welder, Certified Nurse Assistant (CNA), Automotive Technician	10	7
Muscatine HS	Machinist	3	1
Pella Career Academy	Chef de Partie, Engineering Assistant, CNA, Welder	17	7
Total	**12**	**111**	**67**

Source: DOL OA data provided to Urban Institute on June 10, 2020.

Comparison with Wisconsin Youth Apprenticeships

Iowa's high school model has similarities to Wisconsin's Youth Apprenticeship program, which began in 1991. In Wisconsin, high school apprentices participate in work-based learning at local employers while high schools provide technical instruction related to the occupations. Wisconsin's program served 2,500 employers and 3,500 students from 342 high schools in the 2016–17 school year. The industry areas with well-defined standards range from agriculture and finance to IT and logistics. Although Iowa has only 81 apprentices so far, the states is building a system of Registered Apprenticeships.

Iowa's youth apprenticeships are longer duration than Wisconsin's programs. Wisconsin's youth apprenticeship system requires 450 hours of on-the-job learning in the one-year program and 900 hours in the two-year program. In contrast, Iowa's apprenticeship programs last between one and two and a half years and require a minimum of 2,000 hours of on-the-job learning. Iowa's use of the DOL's Registered Apprenticeship program also differs from Wisconsin, where youth apprentices are not formally placed in a Registered Apprenticeship but receive separate occupational competency credentials.[10]

Structure of Iowa Youth Apprenticeships

As part of Iowa's statewide expansion of Registered Apprenticeships, a striking 26 secondary schools in Iowa have contributed to the success of registered youth apprenticeship programs since 2016. Urban staff interviewed two of these schools: Central Campus in Des Moines and West Delaware High School in Manchester. These sponsors provide the job-related instruction, and program administration, required by the DOL OA. OA approved these educational institutions as Registered Apprenticeship sponsors. In the US, a model that leverages high schools as apprenticeship sponsors is atypical, as sponsors have

historically been businesses, industry associations, community colleges, or labor unions-employer joint programs.[11]

In Iowa's high schools, apprenticeships typically begin with an intensive on-the-job learning experience, generally right after students' junior year, during the summer. This program design allows youth apprentices to complete all classroom courses provided by the high school and/or community college before high school graduation. Currently, high school sponsors across the state provide apprenticeships for 12 occupations, including advanced manufacturing, information technology, child care, health care, and culinary arts, in partnership with surrounding employers.

Engaged employers support these programs by providing on-the-job learning for students, paying apprentice wages, and connecting apprentices with mentors who provide structured learning or professional advising in the apprenticeship program. Participating employers range from medium-size firms like Weiler in Knoxville, Iowa, with 315 employees[12] to large corporations like John Deere with over 74,000 employees[13] worldwide.

Urban staff recently conducted a series of interviews with eight individuals, including two companies offering youth apprenticeships, two high schools sponsoring Registered Apprenticeships, two apprentices, the DOL OA, and the governor's office, which plays a critical role in encouraging businesses to adopt youth apprenticeship strategies and promoting partnerships between schools and employers.

How Can Employers Contribute to and Benefit from Youth Apprenticeship?

In Iowa's high school apprenticeship program, employers provide a job, pay apprentices' wages, oversee apprentices' mentorship, and provide the context in which the apprentice learns their occupation. Employers are the linchpin to high school apprenticeships in the model—without them there is no apprenticeship program. But it can be difficult to entice employers to adopt this model for meeting their hiring and training needs because of misconceptions about the model and allowable activities. A high school-sponsored apprenticeship model is different in its substantial degree of collaboration between employers and high schools. By partnering, each entity helps craft flexible programs accommodating students' schedules, supporting the apprentices' career readiness, and delivering training and mentorship to students, while high schools typically administer the program with DOL.

For businesses facing significant challenges finding and retaining a reliable workforce, registered youth apprenticeship presents an attractive solution. Before the COVID-19 economic disruptions, Iowa enjoyed a low unemployment rate, at 2.8 percent in February 2020.[14] Further, millions of skilled workers will be needed to replace retiring workers; in Iowa manufacturing, one in four workers is age 55 or older, with only 9 percent under age 25. Over one-quarter of new hires in Iowa manufacturing are ages 16 to 24.[15]

Because of these trends, we anticipate that youth apprenticeships will continue to be an attractive model for companies. Employers can tailor classroom training to industry needs and further advance students' skills and experience within a defined career path. Students are eager to learn and contribute, and they bring fresh energy to the company's workforce. Participating in high school apprenticeships allows businesses to be more proactive in shaping the talent pipeline, not only for their firm but also for their entire local labor market.

Spotlight on John Deere Apprenticeships

John Deere is a US corporation that manufactures agricultural, construction, and forestry machinery; diesel engines; drivetrains; and lawn care equipment.[16] John Deere, a major Iowa employer with five facilities across the state (including in Moline, Illinois, bordering Iowa), has participated in youth apprenticeship programs in coordination with Iowa high schools, including Davenport Community Schools and North Scott High School. Additionally, John Deere, and in particular David Ottavianelli, their director of strategic projects, is a leading Iowa employer voice for training young people through the high school Registered Apprenticeship model.

Starting in 2018, company officials began a market analysis to determine their skill shortfalls and a strategy to fill critical positions. This study found several critical positions in John Deere's manufacturing and retail settings were not being filled, which would prevent further company growth. The company's analysis discovered a short supply of skilled assemblers, forklift drivers, welders, technicians, and machinists. Many of these positions required more than a high school diploma but less than a four-year university degree. Moreover, the study found one way the company could fulfill its need for skilled workers would be to increase the student talent pipeline. Mr. Ottavianelli told the American Rental Association in January that the company "realized that we needed to influence the students, parents, and teachers by showing them that these manufacturing opportunities exist in our factories and dealerships today."[17]

Before Deere could begin implementing the apprenticeship program, it had to clear a few hurdles. First, it had to change human resource guidelines to allow workers younger than 18 to be employed. Second, Deere contacted its insurance company to ensure youth apprentices could work in its facilities. After further discussions, with many insurance professionals including their internal insurance provider, the company learned its insurance coverage would not change. Third, additional partnerships with high schools, community colleges, chambers of commerce, and others would need to be further developed to support its efforts. Lastly, Deere had to ensure the safety of young apprentices in a manufacturing setting. The company reviewed the Child Provisions of the Fair Labor Standards Act that prohibit some activities of youth apprentices, including driving a forklift and using hoists.[18] Aside from those finite restrictions, all other activities could be completed by student welders (see figure 2 for example). Mentors and other professionals ages 18 and older could be responsible for forklifts and hoists until the apprentices were of age.

FIGURE 2

Weld Apprentice Jordan Holmes Practices His Air Carbon Arc Cutting Technique During His Work-Based Learning Experience with John Deere

Source: Photo provided by John Deere.

John Deere initiated its first youth apprenticeship class in summer 2019—recruiting students from North Scott and Davenport High Schools—and collaborating with their CTE and work-based learning coordinators. During the 2019 pilot year, nine apprentices earned income while they learned in a competency-based[19] welding Registered Apprenticeship either at John Deere's manufacturing facilities or its three suppliers, including Eckhart, Uniparts Olsen, and ALM.

Deere apprenticeship program goals are clear: to create a sustainable long-term talent pipeline that includes students from local high schools and is driven by business demand. The company's end goal is to create entry-level skilled workers and allow the employees to decide their long-term career aspirations by choosing from many multiple career pathways—all while taking on little or no debt for schooling. Ottavianelli explained that at this point the high school apprenticeship program cannot alone fulfill all of the company's skills gaps in critical positions, and other strategies will need to be undertaken. But the youth program is having positive impacts beyond filling job openings throughout the community. These programs will help fill open needs throughout the entire industry supply chain.

What surprised John Deere was the unintended result of bringing students into their factories. As Ottavianelli describes, many John Deere skilled trades workers were "very welcoming" to opportunities for mentoring high school apprentices. He said the pilot program in 2019–20 has gone very well: "The businesses are delighted to be working with the students, and we are continuing to learn and make improvements. Our factory employees have done a wonderful job and have been extremely engaged in

the entire process. You can tell the students want to learn. They are learning a lot about the business to include the technical skills of welding plus the soft skills of a professional work environment."[20]

John Deere's actions are a broader call to Iowa firms to develop homegrown strategies to prepare young people for meaningful careers. Participating as a business partner in high school student Registered Apprenticeship programs, the company has become a champion for the state's high school apprenticeship efforts. Deere has toured the state with other Iowa partners to meet with interested high schools and companies. Deere, along with other local participating businesses, created "mythbusting" materials to ensure companies and educators understood how youth apprenticeship could be implemented despite some perceived roadblocks. John Deere also participates in the Iowa Business Council led by Governor Reynolds, where they present to other companies about how the youth apprenticeship model has benefited them.

In 2020, John Deere has committed to employing 19 registered youth apprentices, tripling its apprentice hires at multiple facilities in Iowa. However, the COVID-19 pandemic has limited the number of apprentices originally anticipated to begin in 2020. The company sees the opportunity to grow the program in a few ways, and one it has undertaken is to expand the number of occupational tracks available to students, including Computer Numeric Control (CNC) Operator. CNC Operators use computer-controlled machines or robots to perform several machine functions on metal or plastic work pieces.[21] At John Deere the CNC operators will have a critical function to ensure the smooth operation of the CNC controlled manufacturing equipment. Ottavianelli also sees opportunities to attract more diverse students and plans to emphasize diversity as an aspect of the company's apprentice recruiting efforts moving forward.

This high school student apprenticeship effort has been one of the biggest employee engagement projects we've instituted in years.
—David Ottavianelli, director of strategic investments at John Deere

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Spotlight on Ruan Transportation Management Systems

As Iowa's first registered youth apprenticeship IT program, Ruan Transportation Management Systems is leading efforts to innovate technology training and hiring in Iowa. Ruan's Dan Greteman, chief information officer and director of all technical areas of Ruan, is also the executive sponsor of the firm's IT apprenticeship program. Greteman served as an early proponent of the high school apprenticeship model and raised the opportunity to company leadership. With executive support, and a desire to test a new way of hiring young talent, Greteman worked with local partners to develop a program to seamlessly meet the company's needs. Three years after its launch in 2017, the program's success has him, and Ruan, eager to continue offering the program for years to come.

Along with John Deere, Ruan is part of the Iowa Business Council, which includes other business leaders, higher education representatives, and state and local officials to convene stakeholders and facilitate discussions. Members come together to discuss curricula alignment and training priorities based on business and industry insight. Given that encouraging work-based learning is a priority for the group, it was natural that ideas around youth apprenticeship programs began to take shape.

Greteman explains the firm's motivation for launching their efforts as an investment in the community. Ruan recognizes that technology is ever changing and there are too few skilled workers to fill the positions needed to function at capacity. Greteman knew that engaging partners early to garner interest and offer exposure could be a way to address that labor supply shortage. Another stated motivation is the program's ability to provide students with opportunities to sustainable career paths in technology, especially for those who may not have had such an opportunity without the program.

Once Greteman was ready to move forward with the program, he needed partners to make it work. He contacted Central Campus in Des Moines, an institution also represented in the Iowa Business Council that had presented their progress on apprenticeship program development. Ruan and its partners developed a competency-based Computer Support Specialist apprenticeship program that would be up and running within only a few months. Central Campus not only worked with Ruan to design the program, but they also delivered classroom instruction and helped recruit promising candidates. Additionally, Ruan and Central Campus are in close proximity, which makes coordinating transportation and other logistics easier. While Ruan is actively working to involve students from additional schools, their first priority is to ensure the current program is stable and successful.

The program has a base requirement of 500 hours to secure introductory generalist training for working in IT positions at Ruan, followed by about 1,500 hours in more specialized areas of focus during the Registered Apprenticeship program. Subsequently, the apprentices may gain further certifications and additional training beyond the apprenticeship, which are sometimes paid for by the company. Students commit to about 10 hours of work per week, while attending high school and taking dual-credit courses aligned with the program's on-the-job training. The program started as a way for apprentices to gain experience providing support on the firm's service desk team, and then students began pursuing specialized tracks with more defined training across three broad IT pathways: operations, service, and support. Although apprentices gain basic skills for computer support and then choose their desired pathway to advance, they also have the opportunity to gain experience in other areas of Ruan operations. Some expanded roles are to support teams working with hardware, mobility platforms, business analysis, and robotic process automation programming and development.

Greteman recognizes the priorities students juggle today and works to provide flexibility in their work schedules to not detract from their academic commitments. To address scheduling conflicts, Ruan team leads or dedicated trainers, who are full-time employees, have offered time on weekends for apprentices to come into the office and work on tasks together. The culture of learning and teaching is strong at Ruan and has been reinforced through this program and partner efforts.

Vital to the program's success is the process for recruitment and hiring, which follows standard business hiring practices. Students enter the candidate pool by submitting an application and résumé, which school advisors can help with as needed. Once materials are submitted, hiring begins with a collaborative review of application packages and discussions between company hiring managers and student advisors that allow hiring managers to evaluate applicants. Ruan's leadership team established 8 to 10 factors spanning technical and behavioral competencies on which they measure student candidates, where school instructors and advisors weigh in on performance and other data such as class attendance. Once the pool is narrowed to about four to six applicants, candidates are invited to mock interviews with the company. Ruan's hiring and interview team consists of relevant managers from the select functional areas as well as one to three operational directors. This interview process yields two to four apprentice hires per cohort. Ruan typically hires students in their junior year but has hired apprentices as early as sophomore year. In his hiring efforts, Greteman highlighted the importance of getting parents on board. As their children will be dedicating at least ten hours a week to on-the-job learning, Greteman ensures that parents (and students) understand that Ruan can be flexible and school comes first. For example, Ruan makes program adjustments to meet student needs, like offering a temporary change to weekly hours around semester finals to give students more time to study. This, along with ongoing open dialogue with school advisors on student performance, exemplifies Ruan's understanding of and commitment to prioritizing school for the apprentices.

Greteman says the program's biggest advantage is the loyalty (and retention) apprentices have for the company and the pride they take in their work. After apprentices master basic tasks, which takes about three to four months, they enhance capacity for Ruan across multiple business areas. Greteman described an example when one apprentice stepped in to support their mobile platform team in an effort to replace 5,000 tablets for the company's service staff in the field. This initiative the apprentice contributed to drastically improved drivers' ease of using the mobile platform, driver appreciation, and driver capabilities. Apprentices have provided support and offered input on such strategic initiatives, among other process-enhancement efforts in the company. Given younger generations' pervasive exposure to new technologies and innovation at an early age, Ruan can more directly tap into fresh and modern perspectives.

Lastly, strengthening talent pipelines is another especially important strategy in technology firms, which is enhanced through youth apprenticeship. Hiring and training young people allows companies to foster apprentices' growth and development in the organization, while also building expertise in company systems. This can help address occasional issues companies face when hiring more senior roles. Given preexisting cultural and behavioral norms more experienced workers can bring into a new job, more efforts are often needed to sync these employees with a company's culture. When a business promotes from within, that can minimize mismatch between individual workers and strengthen the organization's culture.

From my perspective, I don't know why every organization isn't doing this. It's easy—I love to see young people learning new things, especially in technology.
—Dan Greteman, chief information officer at Ruan Transportation Management Systems

How Can Students Grow through Youth Apprenticeship?

High school apprenticeships offer students the opportunity to pair paid on-the-job learning with technical education delivered in the classroom.[22] Student apprentices can gain valuable, substantive work experience that many of their peers cannot. They are poised to launch rewarding careers upon completion of high school and their apprenticeship programs.

The Urban team spoke with several high school apprentices in Iowa to better understand how they landed their apprenticeships, what competencies and knowledge they have attained, and where they expect to continue growing after completing their apprenticeships.

Spotlight On Myah H.

When Myah H. arrived at Eckhart, Inc., for the first day of her apprenticeship, she was nervous but excited. One other woman was employed at Eckhart, but when Myah began her welding apprenticeship, she was the only woman working on the shop floor. She was also the only high school student employed at the facility.

Myah graduated from North Scott High School in May 2020. She began her welding apprenticeship with Eckhart in March 2019, although through classes and family members she learned the fundamentals of welding several years prior. For two months, Myah engaged in job shadowing at the shop to better understand how the facility operates and what is expected of the welders. Eckhart, Inc., is a Michigan-based company that designs and produces manufacturing equipment. Their Davenport operations fabrication facility is located in Eldridge, Iowa.[23]

Myah was not at all familiar with the concept or structure of an apprenticeship when she first learned about the apprenticeship opportunity at Eckhart. A representative from the local manufacturing community contacted Myah's welding instructor, David Linnenbrink, to identify students prepared to start an apprenticeship program in the industry. Myah was initially surprised to learn that manufacturing firms would be willing to hire high school students.[24] She leapt at the opportunity to extend her learning from the classroom to the job site. At that point, Myah had already earned some postsecondary welding credits through Eastern Iowa Community College. In the apprenticeship application process, Myah's welding instructor helped arrange an interview for her with staff from Eckhart's Davenport plant, and shortly thereafter she was extended an offer.

As she began the apprenticeship, Myah remained unsure of the career path she wanted to pursue after high school. She had taken welding courses at school and worked on welding projects with her grandfather, enjoying the hands-on activity. She also loved working with people and spent some time assisting elderly residents at a nursing home. She was torn between seeking a certified nursing assistant (CNA) credential or continuing to gain skills and experience in welding. Participating in the apprenticeship program helped her to clarify her long-term plans and convinced her to build a career in welding. It took Myah several months on the job to feel competent and confident in carrying out work-related tasks. After the job-shadowing period and time spent observing experienced welders and retrieving parts and tools, she slowly took on more responsibility and independence. Within several months, she started receiving more frequent compliments on her efficiency and product quality. This encouragement from her coworkers helped her build confidence and feel more comfortable at the workplace.

When Myah began her apprenticeship, the classroom portion of the program was delivered at the high school. She would start school at 7:30 a.m. and finish at 11:45 a.m. and then travel to Eckhart and work until roughly 3:30 p.m. As she took more advanced courses at the community college, she would attend classes there from 7:30 to 8:30 a.m., travel to the high school for additional classes until 11:20 a.m., and then finally to Eckhart for work-based learning until roughly 4:00 p.m. With social-distancing restrictions in place because of COVID-19, Myah has balanced on-site, on-the-job learning with virtual coursework from home.

Myah's initial mentor and supervisor was a human resources professional and the only other woman employed at the Davenport plant. She helped Myah grow accustomed to the new work environment until she was promoted to a different Eckhart facility. Myah's current mentor and supervisor is closer in age and a welder by trade. She works directly with her mentor for roughly half of her working time, which amounts to several hours a shift. At first, Myah's questions were focused on more fundamental topics, such as a machine not operating as expected. She has continually felt empowered to approach her mentor whenever she needs guidance. The mentorship she receives is hands-on, with her mentor often demonstrating a specific technique or solution rather than only explaining it to her. Myah expressed gratitude for her mentor's high expectations of her, as she feels he is invested in her long-term career success.

A critical way in which youth apprenticeship is mutually beneficial to apprentices and employers is that apprentices typically complete the same activities that fully trained, permanent workers do. Through her apprenticeship, Myah built and fabricated products for major manufacturers, including John Deere, as well as small to mid-size firms throughout the country. Myah has worked on complex assignments, collaborating with coworkers and assembling their weldments like a puzzle. The only constructive feedback Myah gave about the apprenticeship is that more proactive communication about programming would have made the experience run more smoothly, and it would have been helpful to receive more introductory knowledge before beginning certain courses.

Notably, Myah effectively managed the requirements of the apprenticeship and high school while balancing several other responsibilities and interests, including participating in Future Farmers of

America, raising heifers, and playing on the varsity bowling team. She additionally finds time to work at a local greenhouse, watering plants in the morning. Moreover, while managing her schedule, Myah gained 54 credits toward her college degree, paid for by the high school.

Approaching the end of her apprenticeship, Myah has been considering next steps. She plans to complete her associate's degree at Eastern Iowa Community College and is well on her way thanks to her dual-credit courses at North Scott High School and the academic apprenticeship requirements. Myah has been such an exceptional student that she has been offered a part-time position to teach welding at the community college. She would be glad to transition to full-time employment with Eckhart, and she has a long-term dream of working at the Rock Island Arsenal. Myah is already influencing younger students, including young women interested in welding. She enthusiastically encourages more high school students to pursue an apprenticeship with Eckhart and believes that working hard and being outgoing are key to success while learning on the job.

Spotlight on Theo

As a sophomore at Roosevelt High School, Theo enrolled in a cyber security and IT fundamentals course at Central Campus to gain dual credit. In this course, students not only learned basics of computer and network functions, but also received coaching for how to be a quality employee. The course afforded students the opportunity to craft résumés (with staff support), submit them to businesses, and eventually participate in mock interviews with company hiring managers and directors from business in the Des Moines area. At the time, Theo could not have predicted that his mock interview with Ruan would become an entry point to a lifelong career in technology.

Now a senior and nearly finished with the computer-support specialist apprenticeship program, Theo is planning to continue his education at the same college where he started studying technology systems to advance his computer programming knowledge and skills. Adding to his progress, he is also entering into his third year of employment at Ruan, earning nearly 30 college credit hours that will count toward his degree.

Theo wasn't familiar with apprenticeship before enrolling in the program, but when he heard about it, he liked the idea of receiving hands-on training and compensation for time spent working, all while in high school. Ruan offered a program that would employ him at the company over a defined, multiyear period involving about 10 hours a week to learn the skills needed to become a computer support specialist for the IT transportation company. Although Theo admits he was intimidated to work with so many adults when starting his apprenticeship, he now looks forward to the challenges he faces on the job. Theo has broadened his skill set by supporting efforts across many teams at the company such as customer support needs, small development projects, shipping assistance, and automation processes.

At Ruan, Theo starts the day by checking on existing projects to troubleshoot or flag potential issues. He also executes assigned daily maintenance tasks like cleaning caches or providing customer support. Occasionally, Theo also attends team meetings with full-time teams like the core Mobility team, the Service Desk specialists, End-user group, or Network teams to discuss updates or help plan. In addition,

Theo is supporting research on developing automation systems for the company that would increase efficiency, like formulating scripts to trigger informational or action-oriented emails automatically.

FIGURE 3

Theo, IT Apprentice at Ruan Transportation Management Systems

Source: Photo provided by Theo.

While contributing to Ruan's production efforts, Theo is also exposed to a growing array of learning opportunities, both technical and behavioral. Ruan's program includes mentorships organized by program managers. Through daily check-ins with their mentors, apprentices discuss workload, upcoming tasks, ways to improve, workplace norms, areas of interest to explore, and any work-related challenges. Mentors support and advise apprentices because the majority of students are working in an office for the first time. In any workplace, coaching staff is vital to their ability to become skilled workers and grow within the company. In addition to mentors, apprentices meet with a dedicated contact in human resources to check in on personal and professional improvement, which includes reviewing program track status and stress levels. Theo indicated that his mentor, Josh, has helped support his personal and professional development. Josh has helped coach Theo on improving his soft skills—how to present himself, set priorities, and be timely in completing tasks. Theo plans to continue his IT studies in college, focused on computer information systems and computer programming. Having already secured basic computer and IT credentials through dual-credit courses in high school, Theo feels well positioned for more advanced classes he's looking forward to taking—and then applying them to his role at Ruan. Theo plans to continue working at Ruan while earning his associate's degree. After he graduates, Theo plans to continue working at Ruan full time to keep building on all he has learned and because he's had such a positive experience throughout the program.

Apprenticeship has allowed me to stay close to home, get my education, and come out of high school with 4 to 6 years of job experience [coming out of college] that I wouldn't have had an opportunity to without this program.
—Theo, IT apprentice at Ruan Transportation Management Systems

How Can Schools Enhance Work-Based Learning Opportunities for Students?

High Schools are invested in their students' postsecondary success, whether that entails further academic study, full-time employment, or a combination of learning and earning income. Registered youth apprenticeship enables school districts to prepare students with the education and skills they need to thrive in the modern workforce and achieve a smooth school-to-career transition (Career Academy and Vermeer 2018).

Before 2018, only one high school in Iowa engaged in youth Registered Apprenticeships. As a result of Governor Reynolds' commitment and her office's extensive capacity building and outreach, IWD, Iowa Economic Development Authority, and OA, 26 secondary schools are currently engaged in implementing youth Registered Apprenticeships in the state. The Urban Institute team spoke with a high school administrator and technical education instructor from two school districts to unpack their perspectives on how high schools can collaborate with local businesses to meet their talent needs while equipping students with the knowledge, skills, and experience to launch promising careers.

Spotlight On Central Campus

Central Campus is a regional academy serving students throughout Central Iowa.[25] Central Campus offers Des Moines Public Schools (DMPS) students and students from neighboring districts access to nine career academies with three dozen specialized programs that include numerous pathways to college and career readiness. The core of Central Campus's curriculum is to provide their diverse student population with hands on, work-based learning opportunities.

Tascha Brown is the director of Central Campus, providing leadership for all career and technology education programs offered by the school. Director Brown is in her second year as principal of Central Campus. Previously, she was assistant principal for four years at a different school in the district. Central Campus has agreements with other school districts in Central Iowa, which allows students outside of DMPS to enroll. Central Campus currently serves roughly 2,000 students, with about 150 traveling in from outside the district. To prioritize career readiness and work-based learning opportunities, the majority of Central Campus classes partner with community colleges to offer concurrent enrollment options.

Central Campus is the pioneer of Iowa's registered youth apprenticeship ecosystem as the first high school in the state to provide this pathway to students. Central Campus currently offers students three apprenticeship programs: Building Maintenance Repairer; Child Care Development Specialist (figure 4); and Computer Support Specialist.[26] Forty apprentices are enrolled in their apprenticeship programs, including in Child Care Development and Information Technology. The school is actively working to recruit students for the Building Maintenance Repairer program. In addition, Central Campus delivers quality preapprenticeship programming, primarily through their Skilled Trades Academy, for specialties such as carpentry and electrical work.[27] Preapprenticeships prepare students with the basic skills needed to enter a skilled trade apprenticeship program and include links to union apprenticeship programs, dual credits at community colleges, and industry-recognized credentials.

FIGURE 4

Child Care Development Specialist Apprentice Captivates Her Students

Source: Photo provided by apprenticeship program leaders at Central Campus.

Perhaps the most unique aspect of Central Campus' involvement in registered youth apprenticeship is their role as sponsor for the three of the above mentioned programs. Director Brown spends about one-fifth of her time administering Registered Apprenticeship and other work-based learning programs for Central Campus. During this time, the bulk of her efforts is focused on cultivating relationships with employers to identify needed competencies. Much of the program sponsorship duties are carried out by teachers in the respective programs. For instance, the school's cyber security

instructor leads curriculum development for the Computer Support Specialist program, and the school's counselor speaks with students about the apprenticeship programs, maintains program data, and submits reports to the registration agency. Further, instructors decide whether time-based, competency-based, or hybrid program designs are most appropriate for the occupations and participating employers. In a time-based apprenticeship, program standards stipulate how many hours an apprentice will spend on the job and in the classroom. A competency-based program prioritizes how well an apprentice can demonstrate the ability to fulfill his or her main job functions in the workplace, regardless of the time to proficiency. In a hybrid program, the employer may require both the demonstration of competencies to complete some program elements and the completion of a certain number of on-the-job and classroom hours (Lerman et al. 2019). The Computer Support Specialist and Child Care Development Specialist programs follow a hybrid program design, while the Building Maintenance Repairer program is time based.

Youth apprenticeship is a way to leverage educational institutions to support students in being lifted from poverty.
—Tascha Brown, director of Central Campus

Director Brown articulated two overarching goals for the high school apprenticeship program. One is about making all students career ready. High school apprenticeships provide tangible paths for students to transition to postsecondary employment and/or further education. They also provide achievable avenues for students living in families grappling with generational poverty to end the cycle of poverty. Widening the perspective beyond the school and student apprentices, youth apprenticeship generates positive economic impacts for communities by building their own talent pipeline. The "college for all" approach to education and career readiness has resulted in acute skilled labor shortages, pushing employers in rural states like Iowa to outsource skilled labor needs to other regions.

To achieve these overarching goals, Central Campus teachers, administrators, and staff work diligently to recruit and enroll student apprentices. Teachers highlight work-based learning opportunities to students. Because Central Campus enrolls students from many different high schools, the career counselor regularly works with peer counselors at other high schools to make sure they are publicizing opportunities offered through Central Campus. Director Brown and her colleagues have also been deliberate about how and where they communicate, to ensure a diverse array of students can take advantage of the apprenticeship model. For example, the school works with a bilingual liaison to speak with immigrant families and has discussed creating Spanish-language billboards in Des Moines.

The successful launch and growth of high school apprenticeships at Central Campus is also contingent on the campus leaders' relationships with employers, who deliver on-the-job learning. In

large part, teachers are charged with fostering relationships with businesses. The employer partner for the Computer Support Specialist program is Ruan Transportation Management Systems. Students in the Child Care Development Specialist apprenticeship program work in child development centers and preschools. Although no apprentices are yet enrolled in the Building Maintenance Repairer program, Central Campus has a formal relationship with Hubbell Homes.

To support the activities required for a high school to design, launch, and grow robust apprenticeship programs, they need an appropriate levels of funding. The Iowa Economic Development Authority (IEDA) distributes training grants to eligible entities through the Iowa Apprenticeship Act, also referred to as 15B. Awards under 15B must be used to conduct and maintain an apprenticeship training program, and grant recipients can be reimbursed for allowable expenses related to the apprenticeship program.[28] Central Campus has obtained and drawn down state 15B funding to support the Computer Support Specialist and Child Care Development Specialist apprenticeship programs, though Director Brown acknowledges the school continues to learn which specific activities and expenses are allowable. Similarly, Central Campus has accessed 15C funding through IEDA, known as the Iowa Registered Apprenticeship Development Fund. This funding has allowed the school to employ substitute teachers so permanent teachers can meet with employers during regular business hours.

Measuring success is key to the design of any initiative. Director Brown reports that to determine whether the high school apprenticeship programs are effective, she is observing the completion rate of enrolled apprentices; attainment of industry-recognized credentials beyond what students would earn in standard coursework; high school graduation rates; and retained employment in the apprentice's industry. In seeking these positive outcomes, Central Campus has encountered multiple challenges during their first several years administering registered youth apprenticeship programs. One notable challenge has been the coordination, management, and time needed for program administration. With limited staff and financial resources, this is a significant barrier to continued growth. Second, despite extensive efforts, the school continues to struggle with marketing to and recruiting students of color. The school is searching for innovative ways to engage different communities around the awareness of youth apprenticeship opportunities. The third major challenge has been attracting student interest in apprenticeship and in some occupations. Many students continue to hold a "college for all" mentality, and many, if not most, are unaccustomed to working during the school year. These factors make it more difficult to draw students to apprenticeship.

At its core, Registered Apprenticeship involves a formal relationship between an apprentice, employer, and instructional provider. Given that Central Campus is the instructional provider for the programs they sponsor, the growth of their high school apprenticeship initiative is dependent on recruiting additional employers and students. To that end, the school has had productive discussions with small, medium, and large companies about taking on student apprentices in the Computer Support Specialist occupation, based on the success Ruan has experienced. In recent months, Director Brown and her team have also engaged local employers representing the manufacturing, health care, and hospitality industries to generate plans and agreements for expanding the school's apprenticeship offerings. For student outreach, Central Campus intends to increase its presence at community events,

such as the Latino Heritage Festival and the Juneteenth celebration. With sustained support from state and federal governments, Des Moines Public Schools, and institutional leadership, as well as growing interest among local employers and students, Central Campus is positioned to advance their pioneering role in youth apprenticeship.

Spotlight on West Delaware High School

Rounding out our interviews in Iowa, the Urban team spoke with Seth Harms at West Delaware High School in the town of Manchester. West Delaware offers a welding apprenticeship program where students can apply for an opportunity to receive on-the-job training and employment at one of three local companies: Henderson Products, Paladin Attachments, and XL Specialized Trailers. Seth is in his 18th year as West Delaware's lead welding instructor, but he provides much more than quality training. As a known voice in the community and active supporter of work-based learning, he leveraged his role as leader within the community, the school, and with businesses to strongly position West Delaware to launch its first youth apprenticeship program in fall 2018—only a few months after initial conversations began.

Seth became involved in community-building efforts as early as his first year at West Delaware. His efforts would strengthen training programs for adults while building a quality training pipeline. Seth began working with companies to develop specialized training programs relevant to their specific needs, where he continued refining and updating that curriculum over the past 15 years, as technological advancements and workplace changes evolved. With this solid framework for collaboration in place, it was a natural fit for Seth to lead development of related technical instruction for the program with those companies. Because each of the three companies has a large manufacturing footprint in Iowa, the ability to be more strategic about building and training the pipeline for those companies has been an advantage of the program. Manchester has a larger business community than other towns in the area. Utilizing proximity to businesses, Seth has continued to strengthen partnerships needed to drive success with apprenticeships in the area. With years of building strong relationships, Seth ensured elements were in place for fruitful apprenticeship programs, benefiting both businesses and students.

Since its 2018 launch, West Delaware has celebrated four graduates of the youth apprenticeship program, with three more set to graduate in summer 2020. With excitement from the community, local and state representatives, and businesses, Seth and partners look forward to launching another cohort of apprentices from the 12 eligible students currently enrolled in program prerequisite courses. Seth remains eager to facilitate more connections for students to relevant work experience to supplement their education, and students are excited too. As mentioned, multi-stakeholder partner relationships are core to a successful program. Through this program, Seth's existing partnerships—including funding support—have been fortified as the benefits of the program and its efforts have become clearer each program year. The Foundation for the Future of Delaware County is one community organization supporting funding endowments to aid people working to boost opportunity in the community. Each year, Seth has proposed and successfully secured funds for program support. Other similar support has come from companies like the Delaware County Community Chest and Manchester Enterprise.

Additionally, given program success, the school has now been setting aside larger amounts of funding to purchase more advanced machines, updated equipment, and relevant supplies. Seth works each year to provide apprentices with the boots required on the job as a "welcome gift" and to ensure obtaining appropriate attire is not a challenge for students. Seth recommends that others interested in developing programs build strong relationships with employers because, as he clearly states, "everyone needs workers."

Like the recruitment and hiring processes of other interviewees in this case study, West Delaware's program offers class time for students to gain exposure to business hiring practices including building and submitting résumés and participating in mock interviews. These activities are another training component embedded in Seth's course and also provide the basis for companies hiring apprentices. For many high school students, this is their first chance to undergo a true application and interview process for a job in a field that could lead to a lifelong career. This educational component helps prepare students for rewarding careers.

Seth leads program outreach, recruitment, and hiring. His outreach strategy includes hosting and speaking at events such as West Delaware's annual assembly for all incoming freshman. The assembly raises awareness about the program's benefits to earn a wage in a specialized field and its other advantages like earning college credit without incurring debt. Given the program's ongoing positive outcomes, student word of mouth has been helped raise interest as well. Students created a short informational video and shared it among the community to helped raise awareness about the program. Because Seth's goals include promoting diversity in the program, he has developed ways to engage students in other schools to apply for the program as well. Most neighboring schools already include welding or manufacturing training in their curricula, but if not then Seth works to align his classroom instruction with that school's criteria.

The program includes 450 hours of classroom instruction with Seth and 15 to 20 hours a week committed to gaining work experience at the company. In the summer between their junior and senior years, students can work up to 40 hours a week to gain increased exposure to the job. Although the program is structured to take up to two years, students who demonstrate competence in the role can finish sooner.

Seth's regular, direct communication with local companies gives him insight into issues happening in the workplace, which affords many advantages. For example, Seth knows that one company in particular is currently looking to hire 20 welders. Given Seth's unique industry insight, recognition of apprenticeship's advantage, and direct access to students, Seth works hard in his classes to keep students excited about welding and the opportunity apprenticeship provides to learn and earn money, without incurring college debt. This also allows him to address employer concerns about program functionality or apprentice performance. Seth keeps students focused on strengthening their employability skills, which helps ensure they understand how they are presenting themselves in the workplace. Seth's positive relationships with groups and diligence to build success is also demonstrated in his flexible method for developing quality mentorship pairs. Some students have responded well to younger mentors, while others have responded better to more senior mentorship, and Seth works to

make sure individual apprentices get the mentorship support they need. Seth is also excited about matching students with mentors who successfully graduated from the program and are now full-time employees, as this has yielded even more advantages and motivation to students in the program. Another way apprentices are supported on the job is through financial education on budgeting, investments, 401(k)'s, and other lifelong skills not commonly taught in high school.

In addition to providing mentorship to students and teachers and engaging and leading outreach efforts to garner student interest, Seth is also a key liaison for students and employers. This communication channel provides space to remain updated and collaborate on techniques for solving any challenges an apprentice might face on the job. Seth is also known as a "lead learner" in the high school, where he serves as a point of contact for many teachers to gain insight on preparing students for work and how to provide training for workplace-ready behavioral skills. He also communicates with and supports parents, as before our interview he had just ended a phone call with the mom of a student who is a little behind on their online instruction during the COVID-19 pandemic. Seth assured the parent that he is working with the student and that the student understands they must keep up their part of the program's bargain.

Seth's goals for the program include continuing to strengthen skills training for students, offer quality employment opportunities, and provide local industry with qualified talent from the community. As Seth explains the nature of three big companies fighting for the same handful of skilled workers, he looks forward to deepening the local labor pool. Seth sees apprentices' personal professional success as uplifting the community and its businesses, providing greater satisfaction and job security. West Delaware has plans to expand into new domains like the automotive or masonry industries, but Seth remains focused on the current program's success and cohorts first.

How Can Iowa's High School Apprenticeship Model Be Improved and Replicated?

This pilot of high schools acting as sponsors and employers joining to support practical and technical learning is an emerging apprenticeship model for engaging young people early in their careers. Although the average age of registered apprentices hovers around 30, the Iowa model provides students with early engagement and helps fulfill the demand for middle-skill jobs that require less than a bachelor's degree but more than a high school diploma (Lerman 2012).

Challenges to Overcome

Apprenticeships beginning in high school are starting slowly, but the participating apprentices and employers report high levels of satisfaction. Through interviews, the Urban team learned that employer satisfaction seems driven by the opportunity to connect with talent early, while apprentices indicate satisfaction with the hands-on learning with professional adults in their field. To continue to offering the model to more students and employers, several challenges need to be overcome.

DIVERSITY OF APPRENTICES AND OCCUPATIONS

The first challenge relates to the number and diversity of occupations available at any particular high school. Schools' choices for occupational diversity are limited by their locations and the companies surrounding them. Students may need transportation to and from the workplace. Employers must be close enough to the school to make working several hours a day worthwhile and possible while students continue their high school studies. Today, the number of occupations are somewhat limited to a few options in manufacturing, IT, health care, child care, and a few others. In the future, many students may be drawn to apprenticeships in other occupations and careers—for instance, in public service or clean energy, which have yet to be offered in Iowa. Moving ahead, many more companies and institutions will need to engage in apprenticeship initiatives and offer diverse options, if the state wishes to bring the model to scale.

Currently, occupations for high school apprentices appear limited to those that can be completed in 2,000 hours, and generally with a competency-based approach. Because the high schools are tracking students' learning with OA, it is difficult for high schools to track students' progress in longer-term apprenticeships, such as Electricians, Operating Engineers, Diesel Mechanics, or Masonry. Similarly, some interviews revealed hesitancy to offer programs in construction trades that could potentially compete with current Registered Apprenticeship sponsors. To maintain goodwill and avoid the appearance of competition, high schools often limit their work-based building trades offerings to pre-apprenticeship programs. To expand beyond apprenticeships offered in one to two years, Iowa may need to consider other methods or organizations to assist youth apprenticeship sponsors.

Finally, some interviewees wanted to expand to recruit more students of color, young women, and/or students with disabilities. Many available apprenticeships, such as welding, are in largely male-dominated workplaces. As we learned at Eckhart, Myah was only one of two women working at the production facility. John Deere also mentioned increasing diversity as a major aspiration, as this will attract a broader scope of the student population. However, when considering racial diversity, it should be noted that Iowa may lag behind other states, as its population composition is 90 percent white.[29]

REPLICATION OF SUCCESS

Notwithstanding challenges to the replication or expansion of the high school apprenticeship model, we found high levels of cooperation between state and federal government, as well as businesses and educational institutions, to make youth apprenticeships work. These cooperative efforts do not generally occur by chance but require organizations to build them. Convening organizations—such as the Iowa Business Council, apprenticeship intermediaries, and/or the state government—are important to growth, as they bring interested parties together to review progress and persuade newcomers to join in the benefits. Moreover, Iowa has Governor Reynolds' leadership and investment of state funding to support the model's expansion. Financial investment, third-party intervention, and state leadership are some factors that should be considered by other states and municipalities when developing their own high school apprenticeship initiatives.

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