



Post-secondary Higher Education Pathways to Workforce Credential Attainment in the United States of America

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INTRODUCTION

The evolution of the postsecondary education landscape in the United States of America is fuelled by workforce development and training through career and technical education (vocational), the lynchpin to filling middle-wage and high-skill, high-wage jobs. Community colleges, in particular, have served as open-access institutions, as the people's colleges of America's higher education system. These colleges have a rich history

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of providing access to relevant job training and educational opportunities which lead to higher wages and a better quality of life (Floyd 2005; Floyd et al. 2005; Gleazer 1998; Roueche et al. 1987). As a whole, the American postsecondary system of education (technical colleges, community and state colleges, private colleges, and public universities) works to identify national skills gaps and address the nation's workforce needs (D'Amico et al. 2019, National Governor's Association 2017).

This chapter describes the structure of workforce education in the USA within postsecondary education, with an emphasis on community colleges. The terms vocational education and career and technical education will be defined to shed light on the variety of workforce programmes. Examples of community college workforce programmes will be described to illustrate some of the types of training delivered. Selected state and federal policies, programmes, and initiatives aimed at workforce development are discussed in context, as a historical framework for postsecondary programming in the USA. The chapter concludes by offering summary thoughts and questions about our ever-changing and unpredictable future, which afford us opportunities to realign our workforce programmes in effective and relevant ways.

US POSTSECONDARY HIGHER EDUCATION WORKFORCE AND CAREER AND TECHNICAL EDUCATION DEFINED

Education in the USA is facilitated through a 'large, diverse, and decentralized' system (US Department of Education 2008). Americans who are interested in pursuing high-skilled technical occupations, whether they require a bachelor or sub-bachelor qualification, have a wide range of training and education options (National Academies of Sciences, Engineering, and Medicine [NASEM] 2017). As such, workforce development in the USA is broadly defined as a system of 'multiple programs designed to meet the employment and skill needs of American jobseekers and employers' (Clagett 2006: 2). This system of programmes can be found at both the secondary and postsecondary (vocational/tertiary) levels (US Department of Education 2008). While decentralized, and

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governed at the state level, federal support for workforce education is recognized within the US Department of Education's *Workforce Innovation and Opportunity Act* (Department of Labor n.d.). This legislation was created to improve the country's public workforce system, eliminating barriers to high-quality employment by assisting employers with hiring and retaining skilled employees (US Department of Education 2020b). Outlines the different workforce educational pathways provided by various postsecondary institutions. These pathway options include both vocational and higher education certifications, diplomas, and degrees.

In general, all postsecondary education in the USA is considered workforce education (Carnevale et al. 2017). However, many American postsecondary institutions do not offer high-skilled technical labour market readiness based in vocational/career and technical training. The US Department of Education (2020a) definition of vocational education is based on that written in the *Perkins Act*, as follows:

organized educational programs offering sequences of courses directly related to preparing individuals for paid or unpaid employment in current or emerging occupations requiring other than a baccalaureate or advanced degrees.

Federal funding for vocational education in the USA was first authorized as a part of the *Smith-Hughes Act of 1917* (Perkins Collaborative Resource Center [PCRC], n.d.). Continued support for vocational education would be included in the *Vocational Act of 1973*, the *Elementary and Secondary Career Education Act of 1976*, and the *Carl D. Perkins Act of 1984* (Perkins). Legislation for Perkins has been reauthorized several times. Originally situated as vocational education, America's workforce education 'morphed into career education under the leadership of Sidney P. Marland Jr., U.S. Commissioner of Education' (O'Banion 2019: 2). Responsible for the *Elementary and Secondary Career Education Act of 1976*, which would eventually support the creation of the *Perkins Act*, Commissioner Marland and his colleagues positioned workforce education as a continuum, beginning with secondary education and extending to senior citizens interested in new and/or continuing postsecondary workforce training (vocational/tertiary) (O'Banion 2019).

Overseen by the Office of Career, Technical, and Adult Education (OCTAE), career and technical education (CTE) seeks to provide students with challenging academic, technical, and employability skills that will allow for success in postsecondary education and in-demand careers.

OCTAE focuses on the academic and technical skills needed for students to be prepared for a high-skill, high-wage, or high-demand occupation in the twenty-first-century economy. OCTAE administers the state formula and grant programmes of the *Perkins Act*; assists states with programme quality, implementation, and accountability improvement; and establishes national initiatives for states to implement rigorous CTE programmes. In addition, OCTAE supports community colleges in the advancement of CTE programmes through supporting centres of innovation and training and promotes strategies for the completion of postsecondary certification and degree programmes (US Department of Education 2020a). Today, CTE is the most common term for workforce education in America (O'Banion 2019).

Determining how education in the USA responds to workforce needs can be understood through examples of demand during major events, such as the Coronavirus or COVID-19 pandemic. Such events may lead to increases in the popularity of one programme of study or a group of programmes of study that reflect the need for workforce education providers to make a shift (D'Amico et al. 2019). Lists health-related workforce programmes that have been in high demand during the COVID-19 pandemic and the options for workforce education and training progression that are currently available at one community college.

THE CRITICAL ROLE OF WORKFORCE AND CAREER EDUCATION IN THE USA

For the past 100 years, the critical role of workforce and career education has evolved through various movements. This includes training programmes such as 'apprenticeship training, manual training, trade schools ... industrial education, agricultural education, vocational education, and career and technical education' (O'Banion 2019: 218). No doubt, workforce and career education programmes are most effective when they afford citizens an equitable opportunity for higher wages and a better quality of life (D'Amico et al. 2019; Organisation for Economic Cooperation and Development [OECD] 2012). While universities, trade schools, and technical colleges have made valuable contributions to workforce and career programmes, 'postsecondary workforce development is one of the major innovations of the community college' (Jacobs and Worth 2019: 167).

Jacobs and Worth (2019) noted that the evolution and growth of US community colleges parallels the historical evolution of workforce education. As the needs for accessible and diverse workforce education programmes grew, so did the availability of junior and community colleges to meet these needs. Junior colleges in the early 1990s focused on two years of education and training for transfer to universities and, for those who wanted to enter the workforce without a baccalaureate degree, valuable terminal associate degrees. In response to employers' needs for skilled workers and students' desires for training to meet these needs, community colleges' 'explicit goal is to provide open-door, relevant occupational education and training to a diversified workforce' (Jacobs and Worth 2019: 167).

The US government has an evidenced record of targeting and instituting major legislation and funding initiatives to address workforce, vocational, and job training needs for the whole nation and to contribute to a stronger economy. The USA's establishment of the *Servicemen's Readjustment Act of 1944* (commonly known as the GI Bill) following World War II has been regarded as the first historical intervention by the federal government to provide financial aid directly to veterans. The benefits provided by the GI Bill assisted 7.8 million veterans by 1956, of which 2.2 million attended colleges or universities and an additional 5.6 million completed vocational and workforce training programmes. This federal aid provided support for USA higher education and vocational jobs training programmes that grew the nation's human capital and led to a resurgence of economic growth (Bennett 1996; Gilbert and Heller 2013; Roach 2009).

In 1946, during this same post-World War II era, President Harry Truman appointed the first official national body to address federal higher education policy, The President's Commission on Higher Education, also known as the Truman Commission. This commission's work provided policy guidance for the federal government to assume a more prominent role in higher education, including providing financial assistance directly to students in both workforce and vocational fields. The work of the commission led to developments such as the *Higher Education Act of 1965*, federal financial aid, and the USA's community colleges (Gilbert and Heller 2013; Roach 2009).

It is widely believed that the Soviet Union's 1957 launch of Sputnik was a watershed moment for USA policymakers who began to recognize that a well-educated workforce must be competitive globally, especially in skilled

workforce and vocational fields. The Soviet's launch spawned fears that the USA did not have adequately trained scientists, engineers, and foreign language experts to guide programmes that were believed to be vital to our nation's safety and defence. In direct response to the need for more training in these fields, the USA Congress passed the 1958 *National Defense Education Act* (NDEA). The NDEA provided federal funds for curricular reform, expansion of libraries, and student loans targeted in these critical workforce fields. Twenty years later, in the early 1980s, more concerns over the lack of the USA's global competitiveness led to national quality reforms and outcomes assessments. This was aimed primarily at high schools and resulted in a report from the National Commission on Excellence in Education (1983) called *A Nation at Risk*. Then, in the 1990s, *An American Imperative: Higher Expectations for Higher Education* (Brock 1993) called for similar reforms in the postsecondary education system. Many other large-scale initiatives have followed, as O'Banion (2019: 220) states:

There have been a number of innovative reforms in vocational education in the last several decades. A 'New Vocationalism' emerged as an expansion from the emphasis on vocational education to an emphasis on career and technical education.

The American recession of 1982 accelerated the linkage of the private sector and community colleges in partnership to offer relevant workforce training which would aid in a much needed economic recovery. This private sector and community college partnership proved equally important for recovery during the American recession of 2008–2010, when the stock market fell and unemployment rose to record levels. During both these recession periods, student enrolment in workforce training programmes increased, especially in community colleges, as unemployed and underemployed adults sought skills training to enhance their employability (Jacobs and Worth 2019). Many community colleges created programmes to support entrepreneurs; to provide technical assistance for start-up businesses; and to advance new start-up companies through business incubators and accelerators. In addition to the increased offerings of short-term skill training, some colleges expanded apprentice and job shadowing initiatives (Grove and Montgomery 2003; Haveman and Smeeding 2006; Jacobs and Worth 2019).

As the world now faces responding to the Coronavirus, or COVID-19 pandemic, the US federal government has stepped in to provide financial

assistance to each state and the nation's higher education institutions for the purpose of economic recovery. Through the *Coronavirus Aid, Relief, and Economic Security (CARES) Act*, approximately \$14 billion was distributed to institutions of higher education (US Department of Education 2020c). In a letter from the US Department of Education dated 2 April 2020, the Secretary of Education, Betsy DeVos, explained that \$12.56 billion would be distributed to institutions using a formula based on student enrolment. At least 50 percent would be dedicated to assisting students with expenses related to the disruption of campus operations due to COVID-19 in the form of emergency financial aid grants. The additional 50 percent was allocated for assisting institutions with recovery efforts, specifically to support instruction (US Department of Education 2020c). We predict that, once again, community colleges and other postsecondary providers will assume partnership roles in workforce and career training and education, as the nation lives through this COVID-19 pandemic and realigns training in response to this new normal.

EXAMPLES OF WORKFORCE DEVELOPMENT AND EDUCATION SUPPORT POLICY AND INITIATIVES IN THE USA

During the past decade, at both the state and federal level, a number of new initiatives have been launched which are aimed at workforce development. Some of these initiatives, such as the College Promise programme, focus on new approaches to financing postsecondary education at the individual state level. Policy proposals for free community college tuition have been debated at the national level and implemented by a handful of states as a way to ensure that the cost of an education is not a barrier to access. Recently, other initiatives, such as apprenticeship training, have received national attention as models for relevant job training in partnership with employers.

College Promise Programmes

College Promise programmes represent a form of direct student aid that is distinct from existing state financial aid. They provide free tuition to a significant subset of students. The college promise is to 'remove financial barriers by making the first two years of community college—at a minimum—as universal, free, and accessible as public high school has been in

the twentieth century' (College Promise Campaign 2016). The central goals of these programmes are to increase the rate of higher education attainment, prepare students for the workforce, and minimize the burden of college debt (College Promise Campaign 2016; Mishory 2018; Perna and Leigh 2018). The first College Promise programme was the Kalamazoo Promise, which was started in 2005. Based on a pledge by anonymous donors, this location-based programme was created to support graduates of the public high schools of Kalamazoo, Michigan (Kalamazoo Promise n.d.).

Over the last 15 years, a steady rise in College Promise programmes has been fuelled by successful early initiatives in Tennessee, Oregon, New York, and Rhode Island (College Promise Campaign 2016; The Regional Educational Laboratory West 2016). Although the Kalamazoo project was the first of its kind, Tennessee was the first state to establish a state-wide, non-location-based programme. Funded through a \$300 million endowment from surplus lottery money, the programme began providing support starting with the high school class of 2015.

A total of 16 states have at least one state-wide promise programme (Mishory, 2018). Of those 16 states, 10 have enacted and funded a Promise programme since 2014, with eight states enacting a Promise programme in 2017 alone. With the exception of the Excelsior programme, in New York State, almost all Promise programmes work in state partnerships that create pathways to postsecondary higher education credentials through community colleges (Mishory 2018). Other forms of support for workforce development programmes have come in the form initiatives driven by the White House.

Obama Initiative—Free Community College

Driven by an agenda to increase postsecondary education completion, in 2009 President Barack Obama launched the American Graduation Initiative (AGI). This initiative was conceptualized as a \$12 billion pledge towards creating 'an additional 5 million community college graduates by 2020' (Brandon 2009). President Obama continued to support the importance of workforce development and the completion agenda. In his 2015 State of the Union address, he discussed an initiative to make community college free through a federal-state partnership (White House 2015). A nationwide model for free community college has not been realized to date, but some progress has been made. While the AGI fell short

of its \$12 billion funding goal, the programme was successful in addressing student success and employment measures by contributing \$2 billion to the support of the Trade Adjustment Assistance Community College and Career Training (TAACCCT) Grant Program (D’Amico 2016).

Trump Initiative—Apprenticeship Programmes

As a part of the drive to expand and support workforce development, [Apprenticeship.gov](https://www.apprenticeship.gov) was launched in 2018. This is a centralized website that compiles apprenticeship information (US Department of Labor 2018). Established as part of President Donald Trump’s 2017 Executive Order (White House 2017), the Task Force on Apprenticeship Expansion recommended expanding access to apprenticeship opportunities. Through this expanded access, individuals in the USA can take advantage of a ‘learn-while-you-earn’ pathway towards becoming a high-skilled worker (US Department of Labor 2018). Designed as a one-stop platform, the [Apprenticeship.gov](https://www.apprenticeship.gov) website provides information related to workforce pathways for job seekers and serves as a repository of state and federal resources and information, accessible to job creators and training providers.

COMMUNITY COLLEGES: UNIQUE ROLES IN WORKFORCE AND CAREER EDUCATION

Community colleges are unique in many ways. They provide local access to various types of credentials, including certificates, diplomas, and degrees. Workforce education and training is offered through short-term programmes for continuing education credit and more traditional formats for college-level credit. Often, workforce and career programmes are designed, so training may be combined and ‘stacked’ or ‘laddered’, affording the student opportunities to obtain additional credentialing in a coordinated manner.

Community colleges offer various associate degrees such as an Associate of Arts, Associate of Science, and Associate of Applied Sciences. Increasingly, efforts are made to articulate these associate degrees with baccalaureate degree programmes at universities and, most recently, community colleges. Over the past few decades, community colleges in almost half of America’s states have been approved to expand their offerings to baccalaureate degrees, especially in workforce and applied fields such as business, teaching, allied health, and technology (Floyd et al. 2012).

Community colleges are also unique in that they are accessible local institutions, within driving distance for most citizens. They have an evidenced history of providing relevant workforce education programmes that are responsive to local community and employer needs and wants. They also offer robust programmes in a wide variety of curricular areas and diverse formats such as online, short-term non-credit training, credit certificate and degree training, and more (D’Amico et al. 2019). Some community colleges receive local fiscal support while others do not, but all pride themselves on being community-based people’s colleges regardless of their sources of funding (Floyd 2005; Floyd et al. 2005; Gleazer 1998; Roueche et al. 1987).

CHANGING LANDSCAPE: COMMUNITY COLLEGE BACCALAUREATE DEGREES IN APPLIED AND WORKFORCE FIELDS

A major landscape change in American postsecondary higher education is the addition of baccalaureate degrees among community college offerings. Historically, community colleges offered workforce credentials such as certificates, diplomas, and applied associate degrees (vocational postsecondary) that prepared students for entry into the world of work. For others, first- and second-year courses leading to general associate degrees (tertiary, but sub-baccalaureate) provided students a foundation for transferring to universities to pursue baccalaureate degree studies. And, for community college graduates to successfully navigate baccalaureate degree studies, the community colleges and universities needed strong articulation agreements and creative partner delivery models such as university centres, online programmes, and extension offerings.

However, despite many strong partnerships and articulation agreements with universities and community colleges, not all who desired baccalaureate degrees have been ensured access to these degrees, for reasons of cost, geography, and the availability of relevant programmes. Stimulated by workforce needs, a movement for community college applied and workforce baccalaureates has emerged over the last 20 years, representing evolutionary change in the landscape of American higher education (Floyd et al. 2012; Floyd and Skolnik 2019).

Mark D’Amico (2016: 245) noted that ‘In nearly every study that explored the purpose of community college baccalaureates, meeting local

workforce needs emerged as the primary driver'. This evolutionary change in community college missions and programmes was a direct response to employers' expectations for a higher trained and skilled workforce, especially in areas of teacher education, allied health, and business. In many states and communities, there was a mismatch between available jobs, postsecondary providers of baccalaureate programmes to fill the jobs, and students desiring access to baccalaureate degrees. For these reasons and more, the community college baccalaureate degree movement has grown, with almost half of America's states authorizing one or more of their community colleges to confer their own baccalaureate degrees (Floyd et al. 2012; Floyd and Skolnik 2019).

According to Floyd and Skolnik (2019), who reported on actual degree conferrals using 2014 National Center for Education Statistics (NCES) data, 136 host institutions in over 20 states have conferred a total of 957 baccalaureate degree programmes. The actual number of states and colleges is higher, since many who have received approval have not yet conferred degrees that are recorded by NCES. Prior to 2000, only a handful of community colleges offered select baccalaureate degrees in specialized areas and most of those eventually became four-year colleges or universities (Floyd et al. 2005). Then, about 20 years ago, Florida began a major landscape shift with a movement among community colleges to offer applied and workforce baccalaureate degrees in response to unmet local workforce needs. As the eighth state to offer a community college bachelor's degree, Florida was an early adopter of the model (Fulton 2015, 2020).

St. Petersburg Junior College (now St. Petersburg College) was the first Florida community college receiving authorization to offer baccalaureate degrees in specific areas of high workforce demand (Floyd and Falconetti 2013). In the following years, legislation was enacted that authorized other community colleges to offer Bachelor of Applied Science degrees in technology-related fields and Bachelor of Science degrees in nursing and education (Bilsky et al. 2012).

Today, 27 of Florida's 28 community colleges offer a total of 188 baccalaureate degree programmes and confer two degrees: Bachelor of Science and Bachelor of Applied Science (Floyd and Skolnik 2019). Florida's Bachelor of Science degrees may be classified into one of four degree structures: (1) inverted baccalaureates—lower division discipline courses and upper division general education and electives; (2) general management—upper division emphasis on management and business courses; (3) advanced discipline and management—upper division focus on advanced courses in

management; and (4) discipline saturation—upper division focus on advanced content in the Associate of Science degree (Bilsky et al. 2012).

Many of Florida's community colleges renamed themselves state colleges, as they symbolically transitioned to offering baccalaureate degrees. Only one of the 28 colleges in the Florida college system (formerly the Florida community college system) has retained the word community in its name—Hillsborough Community College (HCC). However, most of the 28 colleges in the system still consider themselves to be community colleges by mission (Florida Department of Education 2020). Baccalaureate degrees are offered in these colleges in addition to CTE programmes, not as a replacement of these programmes (Floyd and Skolnik 2019).

Ironically, Florida has long been known for serving as a state model for articulation and partnerships among universities and community colleges. However, those articulation arrangements did not fully meet the demands for specialized workforce baccalaureates in applied fields such as allied health, nursing, business, technology, and teaching. Co-location university centre partnerships, such as the one with Florida Atlantic University and Broward College in Davie, Florida, worked well for some. Yet they did not produce relevant baccalaureate degree programmes to meet local needs in high-demand areas such as teaching, nursing, and business. Thus, these new community college baccalaureates have not replaced partnership degree programmes but may be new degree programmes designed to serve unmet workforce needs (Floyd and Skolnik 2019).

In addition to being an early adopter of the community college baccalaureate (Fulton 2015, 2020), Florida is considered a national leader in employing effective articulation agreements between postsecondary institutions, providing students with a seamless pathway to degree completion. Florida's 2+2 articulation policy mandates the acceptance of all state college and community college Associate in Arts degrees, and some Associate in Science degrees, by four-year state universities (Florida Executive Order 19–31 2019).

The articulation agreement illustrates the commitment that has been placed on long-term workforce development opportunities in the USA, at all levels. The 2+2 articulation model demonstrates transfer partnerships that would allow students to consider pursuing workforce education at the bachelor's level, in programmes not offered in a community college setting. For example, the University of South Florida's (USF) FUSE programme is designed to guide the transition of students from eight partnering community colleges towards limited access programmes upon

the attainment of requirements at the sub-baccalaureate (tertiary) level (FUSE 2020). Another example of partnerships, centred in workforce education beyond the sub-baccalaureate (tertiary) level, can be found in the relationship between Valencia College and the University of Central Florida (UCF). The university sponsors the Direct Connect programme, which ensures Valencia College students admission to the UCF once they have met the requirements of the Associate of Arts degree (tertiary sub-baccalaureate) (University of Central Florida, 2020). Both programmes, FUSE and Direct Connect, demonstrate a commitment to success by utilizing benefits such as joint academic advising from both the community college and university institutions, as well as the opportunity to complete university courses via a partner campus or through transient enrolment (FUSE 2020; University of Central Florida 2020).

EXAMPLES OF COMMUNITY COLLEGE WORKFORCE DEVELOPMENT PROGRAMMES

Adequately describing the numerous examples of current effective programmes and initiatives that support workforce and job training in the USA could be the focus of an entire book, not just a chapter. However, in this section, we describe three workforce development and education initiatives at community colleges as examples of postsecondary and industry workforce partnerships in Florida, Ohio, and Texas. The colleges selected won Bellwether Awards from the Bellwether College Consortium, which is an organization that honours outstanding workforce development programmes and initiatives.

Cuyahoga Community College—Ohio

Cuyahoga Community College (Tri-C), opened in 1963 as Ohio's first and largest community college, serves more than 50,000 credit and non-credit students annually (Cuyahoga Community College 2014). In 2017, the institution was named the Bellwether College Consortium Workforce Development programme winner for its programme titled 'Integrated Pathways: From Pathways to Pipelines to Student Success'. This programme highlighted the work of the school's Manufacturing Center of Excellence (MCE), which provides students with 'an integrated and accelerated pathway to completion and a pipeline to industry through

training in high demand areas’ (Bellwether College Consortium 2017). The programme’s goal is to serve as a bridge between the college, the community, and the industry by helping students attain postsecondary credentials (vocational) and credits (tertiary sub-baccalaureate) (Cuyahoga Community College 2014).

Alamo Colleges District—Texas

Serving more than 90,000 students, the Alamo Colleges District is the largest provider of higher education in south Texas (Alamo Colleges District 2020). Established in 1945, the district is composed of five institutions: North East Lakeview College, North West Vista College, Palo Alto College, St. Philip’s College, and San Antonio College. The district offers a variety of two-year associate degrees (sub-baccalaureate). In 2015 and 2016, the district was named the Bellwether College Consortium Workforce Development programme winner for its programmes titled ‘Alamo Colleges I-BEST’ and ‘The Student’s Unique Journey and Alamo Academies—An Industry-Driven, Higher Education Program of Studies, Workforce and Economic Development Partnership: Boosting the School-to-Careers Pipeline’ (Bellwether College Consortium 2017).

The Alamo I-BEST initiative uses accelerated contextualized skills-based instruction to help low-skilled adults earn high-demand occupational certificates. This is intended to meet the workforce demands in the San Antonio area through industry partnerships. It provides at-risk youth with tuition-free career pathways into critical demand technical STEM (science, technology, engineering, and mathematics) occupations (Bellwether College Consortium 2017). The programme’s curriculum awards postsecondary vocational certificates and limited Associate of Science (tertiary sub-baccalaureate) credits (Alamo Academies 2019).

Polk State College—Florida

Established in 1964, Polk State College, located in Polk County, Florida, serves more than 20,000 students. The multi-campus institution offers a wide range of postsecondary workforce education options, including certificates, Associate in Arts and Associate in Science degrees, Bachelor of Applied Science, and Bachelor of Science (Polk State College 2020). In 2019, the institution was named the Bellwether College Consortium Instructional Programs and Services category winner for its programme

titled ‘Transforming Advanced Technical Education Through Innovative New Models’ (Bellwether College Consortium 2017).

Polk State College’s Advanced Manufacturing Institute (AMI), award-winning Mosaic EIA (Electrical, Instrumentation, and Automation), and Mechanic/Millwright Apprenticeship programmes serve as successful examples of workforce development and education programming. Since 2007, approximately 150 students have successfully graduated from these hands-on and apprenticeship programmes, entering the local workforce in high-wage jobs (Polk State College 2020). The instructional methods used are varied and include industrial instrumentation courses; process control and automation; electrical and mechanical courses; and industry certification programmes (vocational), such as the Manufacturing Skills Standards Council (MSSC) Certified Production Technician (Polk State College 2020).

Each of these programmes highlights the diversity of workforce development education in the USA. As mentioned earlier in the chapter, at both the state and federal level, America has been purposeful in creating initiatives (e.g. Promise programmes, Obama’s free education initiative, and Trumps’ apprenticeship initiatives) to support a variety of high-skill occupation and training pathways (NASEM 2017). These examples provide opportunities for education partners, both domestic and international, to consider and share best practices.

CONCLUDING THOUGHTS

In 2019, when we began writing this chapter, the world was in a far different space than it is now in 2020. No doubt, change is a constant and the world will continue to challenge us to adapt and lead. We can no longer rely on old paradigms to define what the world will be like a year or five years from now. Nonetheless, we can borrow from the past to help design a future that is better and more responsive. The challenge for higher post-secondary education institutions is to model the way by designing and delivering programmes and connected pathways that lead to graduates who are educated, adaptable, competent, and with the relevant skills required of the future world of work.

For those committed to workforce training and education, we know there are numerous models and processes that can provide strategies and programmes to benefit both individuals and society. We have shared some of these models, exemplary programmes, and policy initiatives in this

chapter, discussing both their current status and their historical roots. We know there are many effective international models and programmes that would be beneficial to American leaders as we continuously look for ways to strategically implement change and create impactful and effective programming. Our challenge is to learn and be open to change.

Looking to the future, we should intentionally embrace change, asking new questions rather than turning to outdated solutions. Which workforce programmes and models are tried and true? Which programmes should continue, perhaps with changes to fine tune their effectiveness? What lessons did we learn from the COVID-19 pandemic that are beneficial to our planning and programming in the future? What are the skills employers need their workers to have now and in the future? What can we learn from past national and state policy initiatives that would be useful in framing support for workforce programmes today and in our future? What new professions are needed in this new world and how can postsecondary higher education institutions (and partners) work to fill these needs? How do we prepare students to succeed in this new world and be adaptable to change that we know is never ending? What can we learn from international colleagues about effective workforce policies, programmes, and systems? Is this the time to focus on pathways and partnerships across nations, not just within our own country? If so, how do we begin? The list goes on. If we start with questions, together we may find the solutions.

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