



Enhancing our Talent Pipeline

Career and Technical Education Pathways Overview

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Pima Association of Governments

Cover images courtesy of: Pima Community College

Introduction

In recent decades, careers in the United States have experienced a major shift. While a traditional, four-year post-secondary education has historically offered higher paying career pathway options, many high-wage, high-skilled positions increasingly do not require four-year degrees (Georgetown University Center on Education and the Workforce, 2017). Depending on the industries and employers within a region, jobs requiring technical and skills training, better known as Career and Technical Education (CTE), can yield above-average wages and increased employment opportunity for workers. Graduates from CTE programs can gain employment with earnings greater than or equal to those of individuals who have traditional four-year degrees. For today's career-seeking individuals, these trends are making CTE programs an increasingly desirable career pathway option.



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By 2020, nearly two out of every three U.S. jobs will require some post-secondary education and training.

(Georgetown University Center on Education and the Workforce, 2012)

Parallel to the shifting career landscape, regions such as Tucson are experiencing a growing “talent gap” as worker education and training fail to keep pace with increasing demand for highly skilled, technical labor by employers (National Governors Association, 2017). As noted in economic and workforce development reports across numerous regional agencies,¹ bridging this gap requires the strategic alignment of workforce training and industry needs. In our region, workforce, education and economic development partners have already begun collaborating to support and strengthen this alignment through targeted training and career pathways programs in vital industry sectors. Through this targeted approach, industry and workforce collaborators are teaming up to create and attract talent to fill existing or new high-wage, high-skilled positions that will support the region’s workforce, industries and overall economic growth.

As many of these sector-based initiatives acknowledge, the need for high-skilled labor has increased the relevance and value of CTE programs, which lead to increased wages and employment opportunities for regional workers. These training programs also bolster economic growth by providing talent pipelines

¹ Referenced reports include the Arizona Commerce Authority’s Business Plan, Sun Corridor Inc.’s (formerly TREO) Economic Blueprint, Pima County’s Strategic Economic Development Plan, and the City of Tucson’s Comprehensive Economic Development Report.

for key industry sectors. In strengthening the alignment of workforce development and economic development goals, CTE programs help support vibrant regional economies where businesses thrive and people want to live and work.

Background

Career and Technical Education

Vocational training, now referred to as CTE, has historically provided training programs that respond to the needs of regional and national economies by preparing individuals to enter in-demand occupations. Building on the original Smith-Hughes Vocational Education Act of 1917 and subsequent legislation, the most recent framework for CTE is known as the Carl D. Perkins Career and Technical Education Act of 2006 (Perkins VI). Perkins VI continues to support the development of CTE programs, which will assist secondary and post-secondary students to more fully develop academic, career and technical skills to succeed in high-skill, high-wage or high-demand careers. For the full definition of CTE according to Perkins VI, please see Appendix A.



Image Source: Shutterstock

Career Pathways

In more recent years, CTE has been increasingly incorporated into workforce development as part of the U.S. “Career Pathways” initiative: a workforce strategy “toolkit” conceived by the U.S. Department of Labor in partnership with the U.S. Department of Education and the U.S. Department of Health and Human Services. Introduced in 2011, the initiative focuses on improving the skills, knowledge and credential attainment of American workers in light of significant skills shortages in the workforce (U.S. Department of Labor, 2015). Career Pathways has since been codified as part of U.S. workforce legislation through the Workforce Innovation and Opportunity Act of 2014 (WIOA), and the initiative has been officially adopted as part of workforce strategies at the federal, state and local levels (U.S.

Department of Labor, 2014). For the full definition of Career Pathways according to the WIOA, please see Appendix A.

Alternatives for Career Seeking Individuals

CTE programs help students of all ages acquire advanced academic, technical and employability skills to succeed in various types of in-demand careers and are increasingly being pursued instead of, or in addition to, traditional four-year degree programs (Georgetown University Center on Education and the Workforce, 2012). Such programs provide more options for pursuing post-secondary credentials to the current and emerging workforce and help make opportunities in high-wage, high-skill career pathways available to more individuals in our region.

While most jobs now require some post-secondary education, many don't require a bachelor's degree. Of the 55 million job openings between 2010 and 2020,

- 35 percent of job openings will require at least a bachelor's degree;
- 30 percent of the job openings will require some college or an associate's degree; and
- 36 percent of the job openings will not require education beyond high school.

[Note: the percentages do not equal 100 due to rounding.]

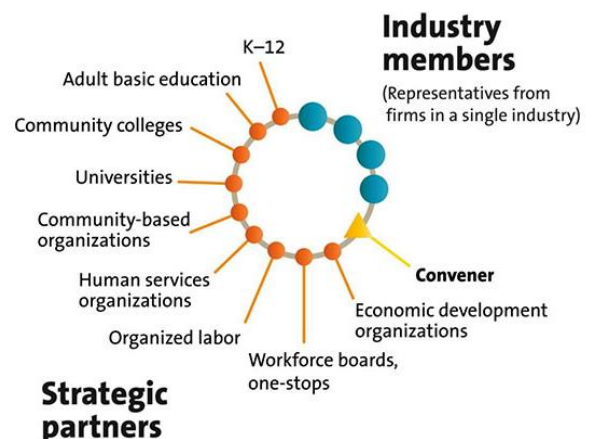
(Georgetown University Center on Education and the Workforce, 2013).

Sector Partnerships

Growing evidence has shown that across the country worker education and training is failing to keep pace with increasing employer demand for higher-skilled workers. To meet this demand and fill this skills gap, many industries have developed regional training programs that collaborate with workforce, education and economic development partners to address workforce needs. These partnerships may also include representatives from organized labor groups, trade associations, workforce investment boards and other community-based organizations. This approach, known as sector strategy partnership, has become a powerful aid to connect disadvantaged job seekers and low-skilled workers to employment opportunities while bolstering regional economic competitiveness.

To address the needs of the region's employers and workers, multiple sector partnerships have been formed. These include the associations listed below. Sector partnerships' typical structure also can be seen at right:

- Arizona Sun Corridor Get Into Energy Consortium (ASC-GIEC)
- Innovation Frontier Southwest (IFS)
- Southern Arizona Logistics Education Organization (SALEO)
- Southern Arizona Manufacturing Partners (SAMP)
- Tucson Healthcare Industry Sector Partnership



Aligning Workforce and Economic Development

Supporting Regional Industry

Given shifts in traditional education-career pathways and growing talent gaps, there is increased need and opportunity for CTE and career pathways programs to support growth and employment in vital regional industries. Strategic alignment of CTE and career pathways programs with in-demand sectors through a sector partnership strategy can leverage talent resources to reinforce regional economic strengths and increase global competitiveness.

Of all the factors that motivate industry growth, none is more universally important than human resources (National Governors Association, 2017). For that reason, many states are increasingly working with local industries to better align talent with workforce demands. Through a “grow your own” strategy, CTE programs partner with local industries to support training programs that build a talent base in direct response to industry needs. Within this partnership framework, targeted CTE programs help fill growing labor-market gaps in technical fields, in turn enhancing and supporting the talent base crucial for industry success on regional and global markets.

As noted in the Tucson Regional Economic Opportunities’ *2014 Economic Blueprint Update* and in other regional economic development reports, talent availability is one of the key factors of business site-selection and relocation. Creating a talent base not only strengthens regional industry, but also creates opportunity for business expansion and attraction, in turn supporting increased regional economic vitality. Through these mechanisms, CTE programs in target industries can strengthen and support regional workforce and economic development goals to generate more high-wage, high-skilled jobs and prosperity in our region (Tucson Regional Economic Opportunities, 2014).

Key Industries: Aerospace and Defense

The regional Aerospace and Defense (A&D) industry is a key economic driver which helps support a number of in-demand sectors in the area. CTE programs, such as Pima Community College’s Aviation Technology Program (PCCATP), have been vital in providing training to meet the growing workforce demands of A&D-related industries and supporting the growth of in-demand sectors in our region.

The PCCATP program has successfully partnered with regional A&D organizations to provide students with industry-relevant, real-world experience while placing more than 90 percent of its graduates into in-demand positions soon after graduation. Given the rapid expansion of the region’s A&D sector, the PCCATP program has expressed the need for equal expansion of CTE programs in aviation to meet growing workforce demands. More information on the regional opportunities and impacts of CTE programs in aviation will be discussed in a future white paper.



Image Source: Pima Community College, 2013

Programs and Initiatives Overview

Arizona and Pima County support a number of career and technical training programs and initiatives. The following list provides an overview of current programs and initiatives in the region. Considering the extensive number of supporting organizations involved in these initiatives, this list is intended to touch on primary programs, and may not be exhaustive.



Achieve 60 AZ

- *Description:*
 - Achieve 60 AZ is a community-based alliance building support to help Arizona reach a goal of 60 percent of adults with a professional certificate by 2030.
- *Current initiatives are centered around:*
 - Improving the K-12 pipeline
 - Completing credentials
 - Increasing access to education
 - Aligning workforce needs
- www.achieve60az.com/

Arizona@Work – Pima County One-Stop

- *Description:*
 - The Pima County One-Stop System connects job seekers – youth, adults, veterans and dislocated workers – to a network of employment, training and educational programs in Pima County. By offering high-quality services, referrals and training, One-Stop bridges

the gap between employer and job seeker by connecting qualified applicants with job openings.

- *Services Offered:*
 - Employment Resources
 - Intensive Career Services
 - Training
- webcms.pima.gov/community/help_now/job_assistance

Center for the Future of Arizona (CFA)

- *Description:*
 - Established in 2002, CFA is a Phoenix-based 501(c)(3) nonprofit organization that seeks to incubate innovative education solutions, empower student success through personalized college and career pathways, and equip school leaders to help all students succeed. It is privately funded through individual, foundation, corporate and community contributions. According to its website, CFA is a nonpartisan, nonprofit “do tank” that combines research with collaborative partnerships and initiatives that drive the state's economic prosperity, quality of life and civic health, and create a better future for all Arizonans.
- *Goals of CFA:*
 - Increase responsiveness of government and other leaders to citizen goals
 - Develop community-based exchanges that empower individual efforts and create a collective voice in Arizona for all citizen goals
 - Develop, engage and encourage young talent to stay and be participants in Arizona
- www.arizonafuture.org

College & Career Academies – Sunnyside Unified School District

- *Description:*
 - There are two high schools with academies: Desert View High School and Sunnyside High School. Each academy focuses on a career pathway where students can earn college credit, industry certifications, and take part in work experiences and internships. This provides students meaningful electives with relevant learning opportunities. This combination of core and elective classes has helped cultivate a rich culture of college and career readiness.
- *Desert View High School programs include:*
 - Aerospace iSTEM and Digital Technology
 - Visual and Performing Arts (VPA)
 - CASH Academy (Culinary Arts, Agricultural Science, Hospitality/Business)
- *Sunnyside High School programs include:*
 - Business, Entrepreneurship, Software, Technology and Transportation (Best²)
 - Law, Public Safety and Security
 - Medical and Allied Health Careers
- www.susd12.org/college-career-academies

Cradle to Career (C2C)

- *Description:*
 - C2C is part of StriveTogether’s national Cradle to Career Network, which Pima County joined in 2016. C2C is a Pima County program focused on improving student education and career success in the greater Tucson area. The program has developed best practices in education for schools throughout the community to help students improve in key benchmarks along their pathway to adulthood.
- www.c2cpima.org

Intern to Career (I2C) Program– Tucson Metro Chamber

- *Description:*
 - In 2015, the Tucson Metro Chamber assembled a large group of local business leaders to listen to their challenges and identify ways the Chamber could address them. Out of these discussions was born the Chamber’s Intern-to-Career (I2C) program. I2C is a one-of-a-kind collaboration between the Tucson Metro Chamber and Tucson Unified School District (TUSD) to connect outstanding, goal-oriented students with career and technical education aspirations with on-the-job training at local businesses. The pilot project in the summer of 2016 placed five automotive technologies students in paid summer internships with local auto repair businesses with three resulting in direct hires.
- *Outreach Sectors:*
 - Automotive technologies
 - Construction
 - Engineering sciences
 - Healthcare
 - Hospitality
- www.tucsonchamber.org/intern-to-career/

Pathways to Prosperity

- *Description:*
 - Arizona joined the Pathways to Prosperity Network in June 2014. The Center for the Future of Arizona is leading the Pathways to Prosperity effort in Arizona, working with local educators and employers to build a system of grades 9-14 pathways that combine high school and community college. The goal of Pathways to Prosperity is to ensure that many more young people complete high school and earn a post-secondary credential with labor market value in their community.
- www.arizonafuture.org/education-we-need/pathways-to-prosperity

Pima Community College (PCC)

Integrated Basic Education Skills Training (IBEST)

- *Program Description:*
 - The IBEST program is aimed at boosting students' basic skills in reading, writing and math while they pursue a certificate in a career/technical program, allowing students to achieve educational and employment goals faster.
- www.pima.edu/programs-courses/adult-education/ibest-programs.html

Career Training Programs

- *Program Description:*
 - The PCC Center for Training and Development (CTD) provides high quality training leading to immediate jobs or to job advancement in many in-demand fields.
- *Sample Programs:*
 - Business Technology
 - Culinary and Food Industry
 - Medical Office
 - Nursing
 - Surgical Technology
- www.pima.edu/programs-courses/career-training-programs/index.html

Workforce and Trade Professions Programs

- *Sample Programs:*
 - Aviation Technology
 - Building Construction Technology
 - Truck Driving
 - Electrical Utility Technology
- www.pima.edu/programs-courses/workforce/index.html

Pima County Joint Technical Education District (JTED)

- *Description:*
 - Established in 2006, the Pima County JTED is a public high school district that offers premier, tuition-free CTE programs to sophomores, juniors and seniors.
- *Sample programs include but are not limited to:*
 - Student Programs
 - Aviation Technology
 - Automotive Technology
 - Culinary Arts
 - Veterinary Services
 - Healthcare Information Technology
 - Professional Development
 - Standard CTE Certification
- www.pimajted.org

Pima County Workforce Investment Board (WIB)

- *Description:*
 - The 45 members of the WIB are appointed by the Pima County Board of Supervisors. The WIB provides recommendations on local workforce policy and oversight of the ARIZONA@WORK Local Workforce Development System also known as the Pima County One-Stop System.
- *Goals of WIB:*
 - Assisting people to obtain jobs in strategic industry sectors
 - Supporting employers in finding and hiring qualified employees
 - Engaging underrepresented labor pools by removing barriers to employment
- webcms.pima.gov/cms/One.aspx?pageId=22593

Tucson Unified School District Career and Technical Education Internship Program (TUSD – CTE)

- *Description:*
 - TUSD - CTE offers a number of career training programs and internships to prepare Arizona students for workforce success and continuous learning.
- *Sample programs include but are not limited to:*
 - Business Management
 - Health and Bioscience
 - Education and Public Service
 - Engineering and Design
- www.tusd1.org/contents/depart/career/index.asp

Appendix A

Carl D. Perkins Career and Technical Education Act of 2006

The Carl D. Perkins Career and Technical Education Act of 2006 (Perkins IV) Perkins IV provides the following definition of career and technical education:

The term “career and technical education” means organized educational activities that—

- 1) offer a sequence of courses that:
 - a) provide individuals with coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in current or emerging professions;
 - b) provide technical skill proficiency, an industry-recognized credential, a certificate, or an associate degree; and
 - c) may include prerequisite courses (other than a remedial course) that meet the requirements of this subparagraph; and
- 2) include competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of an industry, including entrepreneurship, of an individual.

Workforce Innovation and Opportunity Act of 2014

The Workforce Innovation and Opportunity Act of 2014 (WIOA) laid the framework for improved job and career options for regional workers and jobseekers through an integrated, job-driven workforce system that directly aligns and links talent with industry. Within this framework, the WIOA provides the following definition of career pathways:

The term “career pathway” means a combination of rigorous and high-quality education, training and other services that:

1. align with the skill needs of industries in the economy of the state or regional economy involved;
2. prepare an individual to be successful in any of a full range of secondary or post-secondary education options, including apprenticeships registered under the Act of August 16, 1937;
3. includes counseling to support an individual in achieving the individual’s education and career goals;
4. include, as appropriate, education offered concurrently with and in the same context as workforce preparation activities and training for a specific occupation or occupational cluster;
5. organize education, training and other services to meet the particular needs of an individual in a manner that accelerates the educational and career advancement of the individual to the extent practicable;
6. enable an individual to attain a secondary school diploma or its recognized equivalent, and at least one recognized post-secondary credential; and
7. helps an individual enter or advance within a specific occupation or occupational cluster.

Bibliography

- Georgetown University Center on Education and the Workforce. (2012). *Career & Technical Education: Five Ways that Pay Along the Way to a B.A.* Washington D.C.: Georgetown University.
- Georgetown University Center on Education and the Workforce. (2013). *Recovery: Job Growth and Education Requirements Through 2020.* Washington, D.C.: Georgetown University.
- Georgetown University Center on Education and the Workforce. (2017). *Good Jobs that Pay without a BA.* Washington D.C.: Georgetown University.
- Harvard Graduate School of Education. (2011). *Pathways to Prosperity: Meeting the Challenge of Preparing Young Americans for the 21st Century.* Cambridge: Harvard University Press.
- National Governors Association. (2013). *State Sector Strategies Coming of Age: Implications for State Workforce Policymakers.* Washington, D.C.: National Governors Association.
- National Governors Association. (2017). *The Promise of the State-Federal Partnership on Workforce Development & Training.* Washington D.C.: National Governors Association.
- Pima Community College. (2013). *PCC Aviation Technology Program & Aviation Technology Center Student Handbook.* Tucson.
- Tucson Regional Economic Opportunities. (2014). *2014 Economic Blueprint Update.* Tucson: Tucson Regional Economic Opportunities.
- U.S. Department of Labor. (2011). *Career Pathways Toolkit: Six Key Elements for Success.* U.S. Department of Labor.
- U.S. Department of Labor. (2014). *WIOA Overview.* Washington, D.C.: U.S. Department of Labor. Retrieved March 30, 2017, from United States Department of Labor Site: www.doleta.gov/WIOA/Overview
- U.S. Department of Labor. (2015). *Career Pathways Toolkit: A Guide for System Development.* Washington, D.C.: U.S. Department of Labor.