

A Brief History of Workforce Education in Community Colleges

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Abstract

Over its 100-year plus history the community college has struggled to make clear its mission. As a comprehensive community college its mission has bounced around to focus on liberal arts, developmental, workforce, community, and general education. In today's increasingly competitive society with shifting values and changes in power it is likely that workforce education/career and technical education will remain a foundational mission of the community college. Workforce education is strongly supported by state and federal legislators who demonstrate that support with billions of dollars. It is strongly supported by business and industry. And it is strongly supported by parents and students. This brief history captures many of the key issues and developments of the continuing evolution of workforce education in the community college.

Anthony Carnevale (2014) reminds us, "The inescapable reality is that ours is a society based on work. It's hard to live fully in your time if you are living under a bridge" (p. xii). Work is so basic to human survival that it is hardly necessary to make a case for workforce education as a social and economic necessity. As Melvin Barlow says, "The most respected—and respectable—word in the American language is 'work'" (1976, p. 65).

In our contemporary society, the training of workers has become codified as a part of formal schooling that has opened a Pandora's box of issues and opinions about the nature and purpose of education itself. Educators today still argue about the following statements:

- The primary purpose of a college education is to train students for a particular job.

- The primary purpose of a college education is to prepare students to live a full life.

When liberal education in its various forms reigned supreme, the purpose of education was the same as that of liberal education. The incorporation of workforce education into the structures of formal schooling raised questions about the value of liberal education and created stress points about the place of workforce education in the curriculum, in the faculty, in the facilities, and in the allocation of resources. The addition of workforce education also created questions about the quality of education most often expressed in the seemingly unsolvable division between education and training.

These issues and concerns may not be solved for many years, but in the meantime, workforce education has become deeply embedded in higher education, and especially in community colleges. Some leaders argue that workforce education has supplanted liberal education as the primary focus of a college education.

For over a generation, the primary rationale provided by all students for pursuing higher education across all sectors has been to enhance employment prospects. Yes, there are other legitimate, widely recognized reasons for pursuing a higher education degree, but contribution to employability is the single most influential driver in the higher education marketplace, and it looks like it will be so into the foreseeable future. (Hentschke

Tierney, & DeFusco, 2014, p. 4)

Others have argued that the community college has become the primary purveyor of workforce education. According to Paul Fain (2014), “Because of their geographic accessibility and affordability, community colleges have routinely—and rightly—been identified as the U.S. higher education institution most capable of and responsible for our country’s economic and

employment rebound” (para. 22). James Jacobs (2009) notes, “If there is one common mission identified with community colleges, it is work-force education” (para. 1).

From the founding of the English colonies in the early 1600s to the middle 1880s, apprenticeship training was the dominant form of organized preparation for work. A manual training movement emerged in the 1870s, influenced by experiments in Russia and later the Scandinavian countries. Advocates in America created and funded a number of manual training programs for boys, including the Massachusetts Institute of Technology and the St. Louis Manual Training School at Washington University. Manual training programs also began to appear in public schools.

From the 1880s through the end of the century, the trade school movement emerged as a more comprehensive program that expanded the idea of manual training. The New York Trade School, the Hebrew Technical Institute, and the Williamson Free School of Mechanical Trade were the best known and served as models for various approaches to formal training for work.

These institutions were the forerunners of today’s trade schools and technical institutes. Then as now, some were proprietary, and some were incorporated into public schools and colleges. The late 1800s through the early 1900s was a time of great growth for America and for its rapidly expanding educational system. The Industrial Revolution was changing the socioeconomic framework of the country, and schools and colleges were adjusting as rapidly as they could to keep up. The manual training and trade school movements expanded to address the needs of business and industry for trained workers. At the same time, developments in home economics and agricultural education—especially the role of the agricultural extension stations—broadened the impact of workforce education. The kitchen garden movement, designed to teach the young about the domestic arts, set the stage for the creation of the

Industrial Education Association (IEA) of New York in 1884. The IEA established the New York College for Training Teachers in 1888, which became Teachers College of Columbia University. Institutions and associations continued to evolve to reflect the changes and advancements in workforce education.

In the early 1900s, workforce education morphed into industrial education. The Massachusetts Committee on Industrial and Technical Education introduced the concept “industrial intelligence,” noting a lack of it in skilled workers. Barlow (1976) explained, “It was generally understood that industrial education referred to that area of education between manual training and college engineering” (p. 53). There was great interest in industrial education which led to the creation in 1906 of the National Society for the Promotion of Industrial Education. The purpose of the Society was to bring together all leading workforce training organizations in the U.S. as an advocacy group and to influence the federal government to provide funds for training workers. Branches were organized in every state, and a statement released for the first national meeting echoes the statements that have become commonplace for organizations and commissions on workforce education ever since:

The need for industrial education in the United States has become a social and individual question of the first magnitude. It is not only a question that affects our material prosperity as a nation, but one that vitally concerns the well being of society as a whole.
(Barlow, 1976, p. 52)

The Society eventually merged into the American Vocational Association, which in 2001 became the Association of Career and Technical Education, a powerful and influential organization today.

The next mutation of workforce education was dubbed the vocational education movement. This movement expanded rapidly in the early 1900s, with champions from organizations and national leaders, but mostly because of support from the federal government. Vocational education was a priority for many groups in the United States. Business and industry needed a well-prepared workforce. Labor organizations had an interest in promoting standards and in supporting their members. Schools and colleges had a major stake as the primary purveyors of training and as the primary recipients of the federal funds anticipated. For the federal government, it was a national imperative to ensure the nation's future, prompted in part by the nationwide adoption of vocational education in Germany and the beginning of World War I in 1914.

It would take the U.S. Congress a number of years to work out the compromises, but on February 23, 1917, President Woodrow Wilson signed into law the Smith-Hughes Act, the first comprehensive bill to support vocational education in the country and the beginning of federal support that continues to this day. Although a number of national experts were contacted in the preparation of this article to determine total amounts of funding of these acts, no authoritative source could be identified. Several experts have indicated that the federal government has invested trillions of dollars in workforce education, an amount that does not include matching funds from the states and the colleges. The following is a list of major federal vocational education acts and legislation since 1862 to 2014:

- The First Morrill Act, 1862
- Smith-Hughes Act, 1917
- George-Deen Act, 1937
- Employment and Training Act, 1946

- Manpower Development and Training Act, 1962
- Vocational Education Act, 1963
- Amendments to the Vocational Education Act, 1968, 1972, 1974
- Comprehensive Employment and Training Act, 1973
- Career Education Act, 1974
- Job Training Partnership Act, 1982
- The Carl D. Perkins Vocational Education Act, 1984
- Amendments to the Perkins Act, 1990, 1998
- School-to-Work Opportunities Act, 1994
- Advanced Technical Education-NSF, 1994
- School-to-Work Opportunities Act, 1998
- Workforce Investment Act, 1998
- Trade Adjustment Assistance Community College and Career Training, 2011
- Workforce Innovation and Opportunity Act, 2014

In a period of one hundred years, workforce education in the U.S. had evolved through a number of movements: apprenticeship training, manual training, trade schools, industrial education, home economics, agricultural education, vocational education, and career and technical education. Barlow (1976) notes that, “By 1926, vocational education was beginning to make its mark upon the educational purposes of the nation” (p. 58). With federal funding and the need to keep the U.S. globally competitive, vocational education became so dominant in community colleges that in 2003-2004, 46 percent of associate degrees were conferred to students in the arts and sciences or general education, and 54 percent to students in occupational

curricula (Cohen & Brawer, 2008). According to the Association for Career and Technical Education,

From 1997 to 2007, there was a 58.4 percent increase in less-than-one-year certificates awarded at two-year institutions, a 28.5 percent increase in certificates that take at least one year but less than two years and an 18.7 percent increase in associate degrees. (n.d., para. 7).

As Jamie Merisotis, President of the Lumina Foundation, said, "...to deny that job skills development is one of the key purposes of higher education is increasingly untenable" (as cited in Altschuler, 2014, para. 5).

Vocational education did more than make its mark on the educational purposes of the nation; it would soon become the dominant program in a number of educational institutions. With increasing support from the federal government, the individual states, and business and industry, vocational education was firmly embedded in the DNA of American culture. The Great Depression, World War II, and the Russian launching of Sputnik in 1957 prompted leaders to experiment with social and economic policy to ensure we would not be caught unprepared again.

The community college also had an impact on the evolving idea of vocational and occupational education. Originally designed as preparation in the "junior academy" for entrance to the "senior academy," the junior college expanded its transfer function to include "terminal education." The word, terminal, is no longer used in this context, but in the 1930s and 1940s it referred to vocational education.

In 1964, the National Advisory Committee on the Junior College, established by the American Association of Junior Colleges (1964), concluded that "the two-year college offers unparalleled promise for expanding educational opportunity through the provision of

comprehensive programs embracing job training as well as traditional liberal arts and general education” (p. 14). By 1993, public postsecondary vocational education was provided by 720 degree-granting community colleges, 162 technical institutes, 812 area vocational schools, and 70 postsecondary skills centers for disadvantaged youth (Hayward & Benson, 1993, p. 15). The community college movement paralleled the vocational education movement from the early 1900s to the present day.

Vocational education has a complex and rich history in American education and in 1971 morphed into career education under the leadership of Sidney P. Marland, Jr., U.S. Commissioner of Education. Career education was a more appealing term than vocational, occupational, and terminal, and it broadened the idea of workforce education as an educational continuum that begins early in life and extends through old age. Career education was viewed as part of life’s pattern, not as just a job. Marland’s work, and that of his colleagues, resulted in the first vocational act introduced by Carl D. Perkins—the Elementary and Secondary Career Education Act of 1976, which funded the implementation of career education throughout the nation.

Reforms in Workforce Education

Although workforce education continued to expand and to be funded with billions of dollars, the U.S. began to lose its competitive edge in the global marketplace in the late 1970s. The 1983 report, *A Nation at Risk* (National Commission on Excellence in Education), launched a major reform movement in education when it declared:

Our nation is at risk. Our once unchallenged preeminence in commerce, industry, science and technological innovation is being overtaken by competitors throughout the world....

the foundations of our society are presently being eroded by a rising tide of mediocrity that threatens our very future as a nation and as a people. (p. 5)

A Nation at Risk was aimed primarily at reform in the high school, but ten years later a similar report, *An American Imperative: Higher Expectations for Higher Education*, called for major reform in higher education and reflected many of the same warnings as the 1983 report:

A disturbing and dangerous mismatch exists between what American society needs of higher education and what it is receiving.... The American imperative for the twenty-first century is that society must hold higher education to much higher expectations or risk national decline. (Wingspread Group on Higher Education, 1993, p. 1)

As a result of these reports and others, more than 275 educational task forces went to work across the nation recommending and implementing expanded course requirements for high school graduation, stronger college admission requirements, statewide student assessment programs, and teacher competency tests. The two major reports and many task forces triggered reform efforts to improve the entire educational enterprise, but much of the reform focused on workforce education. The Carl D. Perkins Act of 1984, the Carl D. Perkins Vocational Applied Technology Education Act of 1990, the School-to-Work Opportunities Act of 1994, and the Carl D. Perkins Vocational and Technical Education Act of 1998 were all designed to implement national reforms in the realm of vocational education.

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. Community colleges became deeply involved in contract education by offering specialized training to specific industries around the world. General Motors's ASEP program is an example that began at Delta

College in Michigan and spread to many colleges across the nation. Today, contract education has morphed into the corporate college model, designed specifically to serve the interests of business and industry with little or no involvement from traditional faculty.

Community colleges also became champions of economic development for their communities and regions, creating partnerships with local business and industry, chambers of commerce, and other agencies to attract new businesses and to meet the workforce education needs of existing business and industry. North Carolina is a flagship state in the way its state leaders capitalized on its community college system to attract new industry and business. Numerous creative partnerships between community colleges and business and industry in North Carolina become national models for other community colleges.

Four Innovations that Are Transforming Workforce Development in the Community College

The Community College Baccalaureate

In the 1980s, community colleges began exploring what would become one of the most innovative advances in workforce development in the country. Visionary leaders advocated that baccalaureate programs should be added to community colleges in occupational careers not being sufficiently addressed by local four-year colleges and universities, including teacher training, information technology, engineering technology, nursing and health sciences, and others.

According to Deborah Floyd and Michael Skolnik, (2019)

The original Community College Baccalaureate (CCB) idea was to add a new function to the mission of the community college: offering four-year bachelor's degree programs in applied fields of study for which there was a demand from industry. According to its

proponents, the community college baccalaureate (CCB) was intended as an *addition* to other community college functions, not a replacement for them.

In the 1980s, the first such program was established at Parkersburg Community College in West Virginia, and in the next few decades growth has confirmed the CCB to be an idea whose time has come. Today there are 957 CCB programs offered by 136 institutions; 24 states allow community colleges to award baccalaureate degrees and several more have recently proposed legislation.

Florida was one of the first states to adopt the CCB idea as a statewide effort, and today 27 of Florida's 28 community colleges offer the applied baccalaureate. In August 2014, California passed a bill to add bachelor's degree programs to its community colleges. The Chancellor of the California Community Colleges noted, "This bill will enable California community colleges to confer bachelor's degrees...and help close the skills gap in our workforce. I applaud the Legislature for addressing California's workforce needs" (Harris, 2014, para. 2).

The CCB has been successful because it filled a gap and a need. Universities around community colleges did not offer four-year degrees in the applied sciences so students with a two-year degree in information technology or cybersecurity could not transfer to an area university to continue their education. Many students could not afford to attend universities even if they did offer such programs because of the costs and travel that may have been required. Business and industry increasingly needed workers who had earned a higher than two-year degree. Community colleges could build on existing applied programs to create four-year degrees, and they had faculty who could teach at this level. The Community College

Baccalaureate is an idea totally compatible with community college philosophy and values, and its time has come.

Apprenticeships

Apprenticeships have been around since the Middle Ages as one of the earliest job training programs in the world. Young people learned skills from a master craftsman such as a stone cutter or a maker of iron works as an apprentice, often living with the master providing the training. Learning by doing is one of the most effective educational practices of all times.

Apprenticeship training is making a comeback today, especially in community colleges. In 2016, the U.S. Department of Labor announced \$175 million in grant opportunities that would fund apprenticeship programs in high-growth industries such as health care, advanced manufacturing, and information technology. Working with area unions and other organizations community colleges are leading the way in these new programs.

Kellogg Community College in Battle Creek, Michigan has apprenticeship programs that are sponsored by local companies, at which prospective students apply for an apprenticeship position. The programs are generally four years long and consist of 8,000 hours of paid on-the-job training and a minimum of 576 hours of related classroom instruction. There are programs in machine technology, industrial technology, electricity and electronics, among others.

Tidewater Community College in Norfolk, Virginia has a unique apprentice program with the Norfolk Naval Shipyard. Apprentices are employed with a salary range of \$13.84 to \$15.26 per hour and receive promotions upon successful completion of program requirements. Students participate in a rigorous training schedule that combines academic classes at the college along with trade theory training and on-the-job experience. Honolulu Community College has a similar program with Pearl Harbor Shipyard.

In Indiana, Ivy Tech has apprenticeship programs with the Indiana Union Construction Industry, where students receive approximately 2,000 hours of on-the-job training and a minimum of 216 hours of classroom instruction every year. First-year union apprentices earn about the same amount that most college students pay for a year's tuition. Graduates can earn up to \$60,000 annually. There are programs for boilermakers, bricklayers, carpenters, and electricians. In addition, Ivy Tech works with local manufacturers such as Chrysler, ALCOA, Rolls Royce, and Cummins, among others, to educate these companies' future workforce. (Snyder, 2017, para. 14-16).

As community colleges continued to evolve in their mission and functions, so did workforce education. Occupational and vocational education began to be referred to as career and technical education (CTE) which is the most common term for workforce education today.

CTE has broadened its appeal through career academies, tech prep programs, and career pathways. CTE has made popular the instructional approaches represented in applied learning, contextual learning, collaborative learning, and work-based learning. The CTE curriculum is often organized into 16 career clusters in which students study a wider range of skills rather than focusing on the skills appropriate to only one job. As a result of these innovations, enrollment in CTE soared to more than 15 million students in 2007.

STEM

More recently, workforce education has concentrated on STEM (science, technology, engineering, and mathematics) programs as a high priority. The federal government has allocated special funds to support STEM, and some have suggested that STEM will become the next concept to replace CTE. These changes are being driven by an increasingly competitive global economy that relies on STEM education. The World Economic Forum ranks the United

States 52nd in the quality of mathematics and science education and 5th (and declining) in overall global competitiveness. A report prepared for the U. S. Department of Commerce (Langdon, McKittrick, Beede, Beethika Khan, & Doms, 2011) noted that,

Science, technology, engineering and mathematics workers play a key role in the sustained growth and stability of the U. S. economy and are a critical component to helping the U. S. win the future.... STEM occupations are projected to grow by 17 percent from 2008 to 2018, compared to 9.8 percent growth for non-STEM occupations. STEM workers command higher wages, earning 26 percent more than their non-STEM counterparts. (para 1.)

Leaders in STEM are also beginning to recognize the importance of integrating liberal arts with workforce education. There is a growing STEAM (science, technology, engineering, arts, and mathematics) movement to show that art can help bring science to life. at the League for Innovation's annual STEM conference, for instance, one conference track is designed for projects and practices that reflect the integration of STEM and the liberal arts.

Credentials

Historically, accredited institutions of higher education have controlled the credentialing process for students by limiting the options to associate and bachelor's degrees and master's and doctoral degrees. Students and employers have long wanted alternative credentials that are shorter, less expensive, and more focused on skills training for specific jobs. In recent years, alternative credentials have emerged as one of the most useful innovations in workforce development.

In a new report by Inside Higher Ed, *On-Ramps and Off-Ramps: Alternative Credentials and Emerging Pathways between Education and Work*, (2018) the authors noted the following:

The college degree remains the best ticket to a rewarding career and the middle class. But the traditional degree pathway is failing to meet the nation's postsecondary education and training needs. As a result, a growing number of colleges are partnering with employers—or brokers who make those connections—and noncollege education providers to offer alternative credentials. This broad category includes certificates and industry certifications, apprenticeships, digital badges, microcredentials, and new forms of online master's degrees. (p. 1)

The rapidly expanding and changing economy in the U. S. has created gaps between what higher education can deliver and what labor needs. Community colleges, partnering with local, regional, national, and international businesses and industries, have created a number of alternative credentials that are providing greater flexibility and opportunity for students and employers.

There has been an explosion of less than one-year certificates, two-year certificates, and longer than two-year certificates in the last decade to prepare students for careers in hospitality, health care, advanced manufacturing, energy, sales, human resources, information technology, and other high-demand career areas. Noncollege providers and for-profit technical institutes have been key players in expanding these opportunities.

Certificates are organized programs by an entity recognized to have the credentials to create the certificate. Students must successfully complete the entire package in the certificate program to be awarded the signed certificate. Micro-credentials, on the other hand, are short-term programs designed to obtain competency in a particular set of skills. A student earns a micro-credential or a badge that are collected digitally. Most important, employers can examine the badges to determine the specific skills, the specific educational experiences that provided the

training, and information on the student. It is a way of packaging essential information not available on certificates. Think of the way Boy Scouts earn badges to reach higher levels of competency.

Stacking credentials is another concept that workforce educators use to describe the flexibility students can use to illustrate their increasing competency. Certificates can be “stacked” and translated into a degree. Badges can be stacked and translated into a certificate or used to secure employment. Stacking is a means of recognizing the value of life-long learning in that one’s experience and learning do not become terminal. As this proof of skill attainment is stacked, students can see increases in salary and be motivated to continue on a pathway to increase skills and raises.

Career pathways provide the overall framework to collect the various micro-credentials, credentials, and degrees as milestones in an ever-ascending journey to higher levels of skills and employment. Such pathways are used by students and advisors to keep track of progress, to evaluate achievements, and to plan next steps. They serve a very useful purpose in helping students secure entry-level jobs; a major challenge for the future is to figure out ways to keep students on the pathway after an entry-level job to achieve their full potential.

Conclusion

One thing seems certain: Workforce education will continue to evolve to reflect the needs of the economy and the responses of educational institutions in meeting those needs. It will remain a high priority for American society, and if it is not already the dominant program in education, it is well positioned to become so.

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