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The Evolving Mission of Workforce Development in the Community College

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Abstract

Postsecondary workforce development is one of the major innovations of the modern community college. In a workforce approach, curriculum is driven by the needs of local industry, course delivery systems are sufficiently flexible to meet the diverse needs of students and industry, and students experience a mixture of work-based and classroom learning. These features combine to help students succeed at a postsecondary education and gain important training with less than a four-year degree.

This paper describes how community colleges came to be a major resource for the nation's workforce development requirements and discusses the ways this role continues to evolve to meet the needs of students, employers, and local communities. The authors conclude by identifying major trends that will inform the future of workforce development in the American community college.

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1. Introduction

Postsecondary workforce development is one of the major innovations of the modern community college. These approximately 1,000 institutions, considered as a group, are the best existing institutional candidates for a national workforce system in the United States. They provide workforce education for a diverse group of Americans—from younger students transitioning out of high school to anyone of any age who wants to acquire skills to enter the labor market, to adults already working who wish to improve their existing skills. No other nation has developed such an extensive educational network of local institutions able to respond to its talent needs.

Most significant, this unique innovation, developed over the past century, was not a conscious product of federal policy nor the simple implementation of an educational blueprint from one educational theorist or the university system. Rather, it originates from local community activists who stimulated the fundamental "DNA" of the community college to respond to students and workers in the community who had to obtain skills to meet the needs of local industry. By focusing on local needs, they built a network of institutions that can respond to a national workforce agenda.

Unlike in many other advanced nations that have established a work-based learning system to increase employment skills, here in the United States it is the community college approach that has emerged as an important source of workplace learning. Its explicit goal is to provide open-door relevant occupational education and training to a diversified workforce, thereby reflecting the combination of responsiveness to employers' skill needs and students' concern for employment.

The essential features of this workforce approach are these: (a) curriculum driven by the needs of local industry; (b) delivery systems sufficiently flexible to meet the diverse needs of students and industry; and (c) a mixture of work-based and classroom learning, often with the actual equipment used at the workplace, and significant counseling and other wraparound services. These features combine to help students succeed at a postsecondary education and gain important training with less than a four-year degree.

Many nations both in the advanced and developing world are rapidly copying this form of education for their workforce systems. Thus, the evolution of this

workforce development model is one of the major innovations that community colleges have brought to worldwide postsecondary education efforts. This paper discusses the ways this innovation continues to evolve to meet the needs of students, employers, and local communities.

2. The Early History of the Community College Concept

The workforce mission was embedded within the origins of the modern community college. The earliest "junior colleges" were established with both a traditional liberal arts curriculum modeled after four-year university systems and programs that responded to the local needs of employers. Many of these junior colleges were established to relieve the research universities of the effort to educate large numbers of freshmen and sophomores so they could instead focus on their research mission. At the same time, alongside these programs for first- and second-year students, the colleges also developed occupational courses to serve local business and industry. As William Rainey Harper noted in 1900, "many students who might not have the courage to enter upon a course of four years' study would be willing to do the two years of work before entering business or the professional school" (cited in Cohen & Brawer, 1996, p. 214).

Community college workforce programs were often deemed "terminal degrees" because, unlike the liberal arts programs that prepared students to transfer to a four-year institution, the curriculum in the occupational areas focused on skills to meet the specific needs of local employers (O'Banion, 2016, p. 21) In their early years of development many community colleges viewed preparation for new jobs that required more than a high school diploma as their major goal. The American Association of Junior Colleges took a leadership role in the movement for terminal education and created a Commission on Junior College Terminal Occupations in 1939 to advocate for the employment mission of these institutions on a national level (Cohen & Brawer, 1996, p. 215).

In the post–World War II period, the occupational mission of the community colleges was solidified on the national level through efforts such as the G.I. Bill, which funded college for veterans. Specifically, the President's Commission on Higher

Education, popularly named The Truman Commission, called for the formation of more community colleges.

> To meet the needs of the economy our schools must train many more young people for employment as medical secretaries, recreational leaders, hotel and restaurant managers, aviators, salesmen in fields like life insurance and real estate, photographers, automotive and electrical technical and . . . medical technicians, dental hygienists, nurses' aides, and laboratory technicians. (Grubb & Lazerson, 2004, p. 87)

Soon to be added to this list was nursing; indeed, within the Nursing Department at Teachers College, Columbia University, Mildred L. Montag, citing The Truman Commission, created the first associate degree nursing program in 1951. Until then most nurses were trained in "diploma programs," a quasi-apprenticeship training system managed by hospitals. Montag's program combined the technical requirements for nursing with liberal arts courses, justifying this new combination with a rationale that remains relevant today:

> Skill in the art of communication, knowledge of the economic system, understanding of people and social institutions, and an appreciation of the privileges and obligations of citizenship are all necessary if the student is to be able to function effectively as a person as well as a technician. (Quigley & Bailey, 2003, p. 22)

The rationale used to establish the associate degree of nursing program became a vital underpinning in the development of a national consensus that community colleges were the public institutions that could produce the skills needed for what were called the "semiprofessional" occupations. These occupations required more than a high school diploma but less than a four-year degree. The growth of these occupations across many sectors of the American economy aided in the incorporation of community colleges within the framework of federal policy. Federal workforce policy, originally initiated to support high school vocational education in 1917 with the Smith–Hughes Act, was updated in more recent iterations to include funding for community colleges. In addition, The Truman Commission, which promoted postsecondary education for

returning G.I.s in 1946, supported job skills programs at community colleges (Grubb & Lazerson, 2004, pp. 87–89).

Access to these funding sources, combined with a local desire for greater postsecondary education for the broad middle class, stimulated the vast and rapid expansion of community colleges in the period from 1950 to 1975. During this quarter century, the number of public community colleges grew by 150 percent (Cohen, 1998, p. 187). Most were developed through initiatives of local citizens who in part were responding to the needs of their communities for some form of postsecondary education beyond a high school diploma. They offered accessible, low-cost, relevant postsecondary education that would provide a gateway to economic opportunity for the expanding middle class. The American community college workforce programs evolved to meet the needs of their local communities.

3. The Impact of Modern Technologies and Business Organization on Workforce Development

By 1975 there were over 1,000 community colleges enrolling over five million students, equal to all postsecondary enrollment 12 years earlier (Cohen, 1998). Their credit programs were typically found in two relatively separate parts of the institution: the traditional liberal arts classes designed to enable transfer to a four-year institution, and the occupational classes created for students who wanted to enter the workforce. In addition, often separate from these programs, many of the colleges developed work-based learning programs such as apprenticeships. Some also began offering occupational "enrichment" programs in their noncredit continuing education divisions for adults who wanted to start their own business by obtaining an appropriate skill in such areas as small engine repair, interior design, or real estate.

These program distinctions were reflected in the demarcation of degrees offered by the institutions. Colleges offered transfer programs with an associate of arts or sciences degree, the associate of applied science degree was considered terminal, and a number of occupational programs awarded students a one-year short-term certificate.

Programs in continuing education offered no degrees, but sometimes the noncredit programs helped students secure a license or certificate that had value.

However, this neatly siloed organizational structure was disrupted by changes in the workplace and by public policy advocates who began to use the community colleges to support their economic development activities. New international competition encouraged companies to rapidly adopt computer-based technologies to increase their productivity. Companies' focus on technologies meant not only hiring individuals with greater skillsets but also increasing the skills of their current workforce. Thus, the implementation of these technologies altered the long-term distinctions between education and training—a far greater change than just the introduction of individual computer devices or programmable logic computers. The impact of these contemporary trends on the workforce development mission of community colleges increased the scope and value of workforce education.

The conventional wisdom among workforce educators bifurcated technical learning into two areas: (a) the teaching of generalizable skills that were found in any technology such as design, machining, or information technology, and (b) training in the mastery of specific skills associated with the specific internal processes of a company. Most vocational educators traditionally believed that workforce education should be the responsibility of the educational institutions but that training was the responsibility of the employer. The new computer-based technologies challenged this distinction because, to master them, both generalizable skills and specific training on vendor software had to be taught simultaneously (Jacobs, 1987, pp. 6–10).

Further, business practices changed as the result of both modern technologies and international competition. Not only were businesses becoming leaner, with layers of supervision eliminated and replaced by teams, but they developed a new emphasis on quality with the rediscovery of Statistical Process Control, an American-invented methodology for measuring and controlling quality in manufacturing that was used successfully by Japanese manufacturers. Thus new business practices needed to be introduced to incumbent workers, and American manufacturers turned to community colleges as training institutions (Jacobs, 1989).

Promoting an even more extensive partnership, some companies—especially those with multi-site locations dispersed throughout the United States—began to consider community colleges as a potential delivery system to meet their talent needs. In the early 1980s General Motors initiated a national training program for mechanics for its dealers, starting at Delta Community College in Michigan (Dougherty & Bakia, 1999, pp. 17–21). Following on that positive experience, General Motors then created the Automotive Service Education Program (ASEP) where students took automotive classes but focused solely on GM vehicles. When the students completed the program, they were absorbed into a GM dealership.

Ford, Toyota, and Chrysler soon followed with their own programs, thereby forcing many community colleges to create separate facilities and courses for these specific dealership programs. The design software firm, Autodesk, initiated an alliance of colleges to serve as a training platform for companies that adopted its Computer Aided Design (CAD) packages, giving colleges access to its software and training for college faculty to serve clients of Autodesk. These new industry–college partnerships created formal ties between the colleges and companies to perform company-specific training functions.

While many courses were integrated within the credit career and technical programs, others were developed outside the regular programs, resulting in the establishment of some new centers for technical training. These partnerships were noted by community college leaders and, in 1988, the American Association of Community Colleges (AACC) also acknowledged their significance in its major publication, *Building Communities:* "Partnerships with employers for training and retraining must be recognized as a vital component of the continuing education program in community colleges" (American Association of Community Colleges, 1988, p. 39).

These new company demands for training and education were also integrated into the economic development strategies of states (Rosenfeld, 1992). Until the late 1970s most successful state economic development policies consisted of a combination of investment in appropriate physical assets (railroad sidings, large parcels of land) and tax incentives to attract new investment. However, as the companies began to focus on their human capital, technology, and internal organizational needs, states initiated innovative

programs to attract firms through training grants and the development of new public organizations dedicated to their "modernization."

This new emphasis on these economic development factors led to the establishment of state units such as the Michigan Modernization Service and the Ben Franklin Centers in Pennsylvania, which provided technical assistance to aid many small and medium-sized manufacturing companies in implementing modern technologies. Community colleges played roles in these new organizations and were often called upon to train workers from the firms served. By the early 1990s these state innovations sparked the development of a program inside the U.S. Department of Commerce, the Manufacturing Extension Partnership (MEP), which was a federal/state effort to promote modernization among small and medium-sized manufacturing firms (Modernization Forum Skills Commissions, 1993).

As policymakers considered their options for designing training for these firms, the community colleges became logical implementers. They had four major characteristics that were very attractive to both the firms and policymakers concerned about economic development. The colleges were located near most major clusters of firms, were low in cost, and could provide flexible schedules for the firms. Perhaps most important, colleges employed leaders and staff committed to the success of the firms as part of their educational mission. Thus, new state training programs in community colleges blossomed in many states (Jacobs, 1992).

4. The Acceleration of Community College and Business Partnerships

The national recession of 1982 accelerated efforts to link community colleges and the private sector. It was not the first downturn in the economy in the post-war period, but it was the first major recession to occur when a substantial number of community colleges existed. As a result, for the reasons suggested above, companies and policymakers turned to community colleges to aid in economic recovery. Thus, added to the colleges' growing student market were displaced workers—individuals who needed new skills to re-enter the workforce. The AACC responded to these changes with the

creation of a new task force, Keeping America Working. For the first-time, job training initiatives such as the federal Comprehensive Employment and Training Act (CETA) program, which morphed into the Job Training Partnership Act, began to actively depend on community colleges as sources of training for dislocated workers (Day, 1985).

The growth of workforce development activities within community colleges produced new organizations to aid their new workforce development missions. One of the first was the Center for Occupational Research and Development (CORD), established in 1980 by Dan Hull in Waco, Texas. CORD assumed that one of the major needs of community colleges was the development of technical training programs more advanced than their previous vocational efforts, and it thus promoted the new institutional responses at community colleges to implement more sophisticated technical education and training (Hull & Grevelle, 1998). These stand-alone entities, which could deal with the new technical workforce needs of the local industries, were often called Advanced Technology Centers (ATCs). Most ATCs were not created within the traditional career and technical programs of the community college but were parallel to them and often administered by a new organization that emerged out of continuing education. Most of the relationships between ATCs and local companies were governed by contracts that were developed between the community college and the company and that defined customized training to be offered by the college (Grubb, Badway, Bell, Bragg, & Russman, 1997).

These new ventures served to orient community colleges around the needs of industry far more than the traditional vocational education programs did. While the mission was to develop programs that would prepare students for entry-level work, for the most part in the early 1980s traditional career and technical education was organized around the federal funding streams initiated more than half a century earlier, in 1917, by the Smith–Hughes Act. The federal initiative of the 1980s, the Perkins Act, was organized around grants to states for curriculum development, equipment purchases, and leadership development. However, large corporations—especially the manufacturing sector—had facilities all over the nation. Community colleges, originally created to serve a local geographical area, had to figure out how to deal with the needs of companies in many parts of the country.

4.1 The Development of Community College Consortia to Serve Businesses Training Needs

In 1984, therefore, a group of ten community colleges, called the Mid-American Training Group, was established across state lines. The group placed an advertisement in *The Wall Street Journal* announcing its existence and desire to serve the needs of companies with facilities near the colleges. A similar organization, the Consortium of Manufacturing Competitiveness (CMC), comprised of community colleges located in different southern states, was created through the work of Stuart Rosenfeld of Regional Technology Strategies (Rosenfeld, 1992, pp. 18–19). These early consortia reflected the initial efforts of colleges to network with each other and the dominant industries in their regions to better meet the needs of students, industries, and communities.

4.2 The Advent of the Shadow College Within the Community College

The impact of these national alliances created a new sense of awareness of the potential power of community colleges among policymakers far beyond their traditional supporters in the Department of Education and Department of Labor. The traditional sources of federal financial support through the Perkins Act or the Job Training Partnership Act did not apply to many of the company-specific training and state-sponsored economic development activities. A new group of specialists emerged in the community colleges to create new programs and expand funding sources. Most of these specialists did not have traditional vocational education backgrounds in specific technologies, nor were they part of the traditional academic structure of the institution. More likely to come from continuing education backgrounds, they used their marketing and sales skills to solicit business and industry contracts. Community college leaders saw the value of these new programs and allowed them to bypass the traditional vocational education programs.

By the late 1990s these new units within the community colleges were frequently referred to as the "shadow college." Many of these were stand-alone operations outside the traditional credit-based organizational structure of the community college that reported directly to the Office of the President. They were the college's local representatives to business and industry, as well as to state and often national economic and workforce policymakers. Their separation from the traditional college programs was

encouraged by some community college presidents who believed their shadow colleges would provide significant new revenue streams. As a result, they were given internal resources and attention not normally afforded many of the regular occupational programs (Jacobs & Teahen, 1997, p. 14).

Many shadow college units were established as auxiliary enterprises with the specific intent of becoming self-sufficient, although most of their operations were housed within the institution, meaning that expenses for buildings, utilities, and even salaries were subsidized by their institutions. However, in part because of the shadow college's emphasis on financial accountability, the individuals who were attracted to work there were the most entrepreneurial and risk taking of community college personnel. They valued their independence from the institution and often conflicted with traditional parts of the college. Many came from local industry or were involved in marketing, grant writing, or public relations work. But as they grew, many began hiring their own facility and often had their own equipment and separate advanced technology facilities. Their style of work mirrored high-performance organizations in the private sector (Jacobs & Teahen, 1997, pp. 15–16).

Often there was considerable internal conflict within community colleges between the shadow college and traditional vocational education programs. The traditional programs were concerned that the shadow college's activities competed with them. In many instances, however, faculty hired by the shadow college were paid less and were excluded from faculty bargaining units. The shadow college administrators often complained their students lacked access to counseling and other wraparound services provided to traditional students. In addition, since many of the programs operated as "noncredit," the conventional federal student aid programs such as Pell Grants were not available to the students (Grubb et al., 1997, pp. 40–42). Sometimes the conflict extended outside the institution as both the traditional vocational programs and the new contract education programs competed to market their programs to the same firms.

4.3 The Evolution of Definitions of Community College Student Success

There were also conflicts over definitions of a successful college program. Where traditional community college programs focused on student employment and earnings, many of the shadow college programs were considered successful if they contributed to

enhancing the competitive position of the firms requesting the training. Moreover, while there was an academic calendar and structure to the credit classes in the traditional programs, the customized units operated year-round without credit, delivering instruction anywhere and anytime, producing a very different operating culture that stressed agility and responsiveness more than organizational consistency. (Van Noy, Jacobs, Korey, Bailey, & Hughes, 2008, pp. 26–28).

In many instances, record keeping and discussions of how to evaluate the noncredit activities were central to issues of institutional effectiveness (Grubb et al., 1997, p. 42). During this period, many of the colleges with large noncredit organizations developed an important perspective that became fundamental to this divide: All learning is learning. This meant that regardless of whether a course was for credit or not, it was the responsibility of the institution to ensure that learning took place and that the goals of the institution were reflected. This perspective became very important for the community colleges 20 years later when states began to develop significant measures of accountability that stressed measurable outcomes regardless of credit or noncredit status.

Moreover, the growth of noncredit education allowed community colleges to respond to two major developments in private sector skill development practices. The first was that skill standards and other forms of non-degree certification were established as norms in some of the emerging information technology sectors. While some standards and certifications were maintained inside the supply chain programs of major companies, a good many emerged from the needs firms had in their hiring practices, especially in the information technology sector. They served as signals to indicate those who earned these certificates had specific knowledge of a software product or operating system. These certifications, such as the Microsoft Office Specialist and Cisco Entry Network Technician certifications, were organized around the products of the vendors, and they raised a significant pedagogical issue for educators: Was this training or education or both? (Jacobs & Grubb, 2006, pp. 134–137). In addition, if the goals were related to performance, not seat time or course completion, would education for these certifications not be best taught in the shadow college rather than in the traditional course sectors?

Even in the traditional occupational courses, new computer technologies were having an impact. It was hard to teach anything in information technology programs that

was non-vendor specific—i.e., teaching CAD required the adoption of a specific system—and whether it was in the credit or noncredit program meant a choice. So, the development of education for these new certifications posed significant issues that would reemerge in the present period of workforce development at community colleges (Carnevale & Desrochers, 2001).

4.4 The Role of New Technologies in Community College Education

Another issue within the private sector was the growing significance of continuous training and adjustment as the new technology-infused workplace required more than technical skills. As more work was performed in teams and continually assessed, with rapid adjustments through performance measurement, worker mastery of "soft skills" such as communications and project management became vital for firms (Jacobs, 2001). Demands for both soft and technical skills resulted in a significant repurposing of adult education programs in the 1990s. Whereas in the past adult education was considered primarily a public K-12 school function to ensure that all adults could obtain a high school diploma through passage of the GED, a new policy consensus emerged that called for career preparation as one of the fundamental aspects of adult education. It reflected the increasing skills needed in the workplace and the reality that a high school diploma was not sufficient for much entry-level work. Thus, states began to shift some of the responsibility for adult education to community colleges.

Research on programs in states such as Washington indicated that income and employment potential rose significantly for adults who were prepared not only for obtaining their high school diploma, but also for success in a community college technical program. The development of programs to bring adults into community colleges was often initiated on the noncredit side, but soon became part of the credit programs as well—and served to underscore an additional mission of the community college: the preparation of low-skilled adults for college success (Liebowitz & Taylor, 2004).

During this period, however, not all the changes to community college workforce programs were outside the traditional for-credit sectors of the institutions. The new computer-based technologies required substantially upskilling technical workers. To wit, one very significant new federal policy initiative in workforce education emerged with Congress's passage of the Scientific and Advanced Technology Act in 1992. The act

sought “to encourage, guide, and support our nation’s community and technical colleges in preparing science and engineer technicians to support U.S. employers in advanced and emerging technical fields” (Teles, 2012, p. 15). It established the Advanced Technological Education (ATE) program, designed to provide funding for community college faculty to develop curricula that would produce technicians in the emerging fields of telecommunications, nanotechnologies, and cybersecurity. These degree programs were in technical areas that could lead to a four-year degree.

While the initial funding of the program was only $40 million—significantly less than federal funding for community college programs from the U.S. Departments of Labor and Education—it was expanded and funded by Congress over the next 15 years. By 2010 over $720 million in accumulated funds had been invested by the National Science Foundation (NSF) in new technical programs. This NSF–ATE funding became an important source of revenue for many innovative occupational programs within the traditional credit parts of the institution. These programs also brought together technical instructors with science and mathematics instructors to form new coalitions within the community college that supported goals to increase the numbers of high school students prepared in science and technology. And as the skills required by many occupations continued to increase, the ATE was very important in orienting community colleges toward an understanding of the future trends in industry (Teles, 2012, pp. 19–21).

4.5 The Link Between High Schools and Community Colleges to Promote Early Attention to Careers

A major federal initiative in the 1990s linked community colleges and high schools to develop new alliances so that students acquired both occupational skills and knowledge of career opportunities in the areas of science and technology. This program, named Tech Prep and administered through the U.S. Department of Education, provided specific funding for collaborations among high schools, community colleges, and employers focused on preparation for work. In Tech Prep, community colleges and secondary vocational educators were working together, and these early experiments provided a significant foundation for many of the dual enrollment and early college programs that emerged after 2000. In many ways the significant roles now played by community colleges in offering postsecondary education to high school students were

based on the original efforts of Tech Prep (National Assessment of Vocational Education, 2004, pp. 171–193).

4.6 Community College Entrance into the Four-Year Degree Arena

Community colleges were also advancing their own response to workplace demands for skills beyond an associate degree. In addition to developing better ties between their programs and four-year degree programs, some community colleges believed they should advance their own four-year degree programs to accommodate the growing need to train technicians. The concept of the applied baccalaureate began to be widely discussed in community colleges in the late 1990s. Applied baccalaureates were bachelor's degrees in specific technical areas which filled the specific needs of dominant industries in the community and were not being addressed by area four-year colleges and universities. They were awarded in areas such as criminal justice, computer aided design, or a niche training area such as nuclear power technologies (Floyd, Skolnik, & Walker, 2005). In some states such as Florida, community college leaders convinced the legislature to develop four-year degree programs on their campus; other states such as Washington and California are still exploring these programs.

These attempts by community colleges to develop their own four-year programs were often met with furious political opposition from four-year institutions (Makela, Bragg, & Harwell, 2015). The battle lines were drawn especially in one very critical area, nursing, where the four-year colleges fought hard against community college development of their own Bachelor of Science in nursing (BSN) programs. Motivating this dispute were changes in the health care industry that began to value BSN degrees over nursing associate degrees (Karp, Jacobs, & Hughes, 2003). This conflict continues today and reveals an important challenge for future workforce programs at community colleges as the skills needed by employers will require more four-year degrees even for entry-level work.

5. Workforce Development as a Priority of Community Colleges

As the new millennium got under way it became increasingly clear to community college leaders, policymakers, business and industry, and federal and state legislators that workforce development was not only a central mission of the community college; some saw it as a priority of the community college. 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). When the majority of community college students are enrolled in workforce programs rather than liberal arts programs, and when workforce programs are funded extensively by state and federal agencies and by foundations over other community college programs, then it becomes even clearer where the priority is.

If workforce education is to continue to evolve and remain a priority for community colleges and for the nation, a number of key issues and developments need to be addressed. Some of the more pressing issues and developments are reviewed in the following section.

5.1 Relationship of Credit and Noncredit Education

Noncredit workforce education continues as an area of growth at most community colleges. Noncredit programs are more flexible than credit programs and are more easily tailored to the needs of business and industry. In addition, individuals, particularly adults, are attracted to noncredit programs because they offer short-term programs linked to specific jobs.

There is growing awareness, however, that credit and noncredit programs should not be separate but aligned with each other to provide students opportunities for immediate and long-range skill development. Many colleges are developing "bridges" within their institution where noncredit courses are linked to credit programs so adults who come for an immediate job training program can then more easily access credit programs if their career plans change. To better assist students in exploring such transitions, counseling and other wrap around services are now being made available to students enrolled in noncredit courses and programs.

5.2 The Role of the Philanthropic Community in Workforce Preparation

In the past decade, there has been considerable interest from philanthropic organizations in the workforce development activities of community colleges. Many foundations took note of community colleges as potential vehicles to promote their goal of enabling all Americans to achieve self-sufficiency through sustainable wage jobs. They supported programs targeted to low-income workers, funded projects previously supported only by the U.S. Department of Labor, and promoted state initiatives to eliminate poverty and increase literacy. Many foundations place priority on equity and the elimination of poverty, and they are beginning to understand that workforce education programs in community colleges that focus on educating low-income students to secure sustainable wage jobs align perfectly with their goals.

Many foundations champion changes in policy to ensure a better return on their investments and often support statewide projects as a laboratory for more significant change. The "Bridges to Opportunity Program" funded by the Ford Foundation is an example of a large-scale effort in six states in which community colleges focused on the needs of low-income citizens. When community colleges collaborated with state policymakers substantial changes occurred in the existing state workforce programs and in the programs and practices of the participating community colleges.

When community colleges and foundations collaborate and align their goals and resources, some very creative and substantive programs emerge. The Mott Foundation developed a program with a group of colleges to integrate occupational training and basic skills for adults who lacked a high school diploma. The Walmart Foundation established a project with the League for Innovation in the Community College which focused on training entry-level workers for the retail sector. The Kresge Foundation supported efforts to develop new methods to award college credits to adults with previous work experience.

There are a number of important outcomes for this kind of alliance between foundations and community colleges. Community colleges can test out innovations they could not otherwise afford, and many of these innovations lead to institutional change. Colleges in the same state and across states, brought together by the foundations, learn about new programs and new practices they can adapt. College staff working on the

projects begin to appreciate that they are involved not only in efforts to improve their own institution but that they are engaged in substantive work to improve the nation. In a period when state and federal resources to colleges are waning, the philanthropic community will become even more important to future workforce activities at community colleges.

5.3 Training Dislocated Workers

In the Great Recession of 2008–2010, the American economy lost over 8.7 million jobs. Unemployed adults streamed into community college workforce programs for retraining in new fields since many of the old jobs were eliminated. Because of their flexibility, community colleges were ideal venues for this new challenge, which expanded the scope of workforce programs.

Michigan developed its own program, No Worker Left Behind, which resulted in 140,000 adults receiving two years of free community college training in occupational programs. Thus, community colleges in that state and others became the central institution for preparing dislocated adult workers (State of Michigan, 2009). Not only were the colleges the "go to" institutions for relevant workforce preparation, they also provided literacy training, counseling, and other forms of wraparound services such as food pantries and assistance with housing and transportation.

The Great Recession also motivated a major federal response solely devoted to expanding the workforce capacity of community colleges. With strong support from the Obama administration in 2009, Congress passed legislation initiating a $2 billion U.S. Department of Labor program to increase the capabilities of community colleges to help unemployed adults learn skills for high-wage, high-demand technical occupations—the Trade Adjustment Assistance Community College and Career Training Program (TAACCCT).

As TAACCCT comes to an end in September 2018, over 256 grants have been awarded, impacting 60 percent of the nation's community colleges. TAACCCT provided staff development funds and funds to purchase additional technical equipment. In addition, it stimulated colleges to form collaborative networks both within their states and around specific industries. These networks will have a very important impact on how the colleges work together on programs in the future (U.S. Department of Labor, 2018).

5.4 Reimagining Apprenticeship

Unlike many other nations, the workforce system in the United States has always been primarily school-based. Yet parallel to the educational sector, a collectively bargained trade union apprenticeship system has developed. The formal arrangements for a "registered" apprenticeship was structured through the United States Department of Labor and is generally found only in unionized workplaces, primarily in the manufacturing and construction sectors. This meant a relatively small number of workers involved. By 2013 there were about 287,750 apprentices in the workforce or about 0.2 percent of the workforce (cited in Newman and Winston, 2016, p. 188).

Community colleges play a role in the traditional apprenticeship programs by often supplying the "classroom" components of the system. In addition, many community colleges are active with employers who are either non-union or choose to develop their own independent work-based learning programs outside of the Department of Labor—such as internships, cooperative education, and other forms of employees in training. Paradoxically, however, as the traditional apprentice sectors of unionized workers have diminished significantly in the past 20 years, there has been growing interest on the part of companies and policy advocates in the expansion of apprenticeship as a work-based learning system.

This interest was motivated by the private sector, which has expressed a persistent concern that entry-level skills were not being adequately addressed in current workforce programs. In addition, policymakers were focused on the need for a better work-preparation system for high school students who choose not to attend college. As the costs of college attendance rose, there was a call for expansion of the apprenticeship system as an alternative to taking more technical classes.

Both the Trump and Obama presidential administrations have argued for the expansion of the apprenticeship system. First, they would like to see a rigorous apprenticeship program that is outside the traditional collective bargaining model that is not tied to union/management relations. Second, they would like to see apprenticeship programs expanded to include new occupations such as insurance and information technology. With the leadership of the AACC, community colleges are beginning to explore expanding their workforce programs to include apprenticeship training. One goal

is to update the apprenticeship system to capitalize on the value of work-based learning coupled with the awarding of an educational degree such as an associate degree.

5.5 Entrepreneurial and Innovative Activities

The recovery from the Great Recession made it clear there were not enough jobs to meet the needs in many communities. Community college workforce development activities needed to include programs that would create economic opportunities through entrepreneurial activities. In many parts of the country, the dominant industries shed thousands of jobs, and because of technical changes and new overseas investments the jobs were not coming back. Many community colleges, therefore, began creating programs to support entrepreneurs through business assistance centers**,** which provided technical assistance for companies that wished to obtain federal procurement contracts. These assistance centers often served to promote student-run enterprises. Other colleges collaborated with private sector programs such as Goldman Sachs's 10,000 Small Businesses to train current entrepreneurs on how to expand their businesses.

Colleges such as LaGuardia Community College in New York and Lorain County Community College in Ohio developed business incubators to help start-up local enterprises. These were not just buildings to house new businesses but places with technical equipment to aid in product design and development. Such centers, called "maker spaces," were yet another way that the colleges extended their workforce development activities into the creation of new economic activity in communities hard hit by the economic downturn (Oakley & Bynum, 2017).

With these activities, the colleges were responding to the overall economic development needs of communities and the nation more than to the demand by the local private sector to meet their education and training needs. The colleges were responding to the need of the community for greater economic activity to create growth and prosperity, not to the specific demands of one company. However, the two were often highly related. For instance, Macomb Community College's Innovation Fund, which was funded by both the college and JPMorgan Chase, provided funds for companies that offered employment opportunities for students in highly skilled work. As JPMorgan Chase Director of Workforce Initiatives Chancy Lennon put it, "Detroit-area entrepreneurs are vital to southeast Michigan's continued economic recovery, and the Innovation Fund is a

catalyst for creating sustained growth and employment throughout the region" (Macomb Community College, 2014, p. 1).

While some might question whether these applied economic development activities move community colleges away from their main mission of student success, these activities play a key role in their communities. First, they respond to the needs of local small business by providing employment for students. Second, aiding business formation at the local level validates the significance of the college to the community and is instrumental in obtaining local support for local college funding requests. Finally, by promoting student involvement in local entrepreneurial activities, it is encouraging the acquisition of vital skills and the individuals who possess them to stay in the community.

5.6 Community College Workforce Development Networks

As colleges respond to their communities with more specialized workforce development programs and activities, collaboration with other community colleges working with similar industries or facing similar community economic development priorities is extremely important. While most community colleges are organized within their states, these networks establish close ties with colleges in many different states and permit the colleges to play a national role while still operating locally.

For example, in 2008 many communities in the Midwest faced massive lay-offs of workers in manufacturing, and community colleges responded by organizing a peer learning group called the Community College Workforce Consortium (CCWC). These colleges developed joint programs to deal with the changes within their communities by learning to share resources, programs, and services across a variety of training programs.

Another example, developed through the efforts of Gateway College in Kenosha, Wisconsin, is the National Coalition of Certification Centers (NC3). This organization now includes over 75 colleges working in partnership with employers such as Snap-on Tools, Trane, and Fiat Chrysler Automobiles to develop comprehensive curriculum and skills certifications in important career fields. The goal is to develop transferable certifications that will enhance opportunities for students to be employed (National Coalition of Certification Centers, 2018).

5.7 The Increasing Significance of STEM

As the skills needed by employers continue to increase, there is a need for a substantial number of individuals who possess technical knowledge based on mathematics and science. While health care occupational programs traditionally mandated significant numbers of science courses, many community college programs in the business and manufacturing sectors have not required much of a STEM (science, technology, engineering, and mathematics) emphasis. The most often taught mathematics has been "shop math," focused on very rudimentary mathematical calculations involving fractions and percentages. However, as firms expand the roles of technicians who maintain, assemble, and often repair the equipment, software, and processes in the workplace, there is an increasing requirement for more science and mathematics courses in occupational programs.

STEM programs are designed to increase the capabilities of community college students to perform advanced work in fields such as mechatronics, cybersecurity, and laboratory technicians. Most of these programs assume students will continue in a four-year institution to complete a degree. While these programs seem to have a great deal of promise, the idea of STEM is still only in the initial stages of development. Based on National Student Clearinghouse data, CCRC has estimated that only about 6 percent of all community college students who transferred to a four-year school and received a bachelor's degree in six years or less were in STEM-related fields (Jenkins, 2018).

5.8 The Emergence of Guided Pathways for Workforce Program Students

One of the most important and widespread new developments in workforce programs has been another major community college innovation—guided pathways. This effort was initiated in part as a response to the growing significance of certificates and degrees in certain fields in the United States. If jobs in the future require more workers to hold postsecondary credentials, then one important new criterion for the success of workforce development programs is program completion. While the United States had more individuals participating in postsecondary education among advanced countries, the completion rates among young adults (ages 25–34) placed the United States in 12th place, behind many other advanced countries (Bailey, Jaggars, & Jenkins, 2015, pp. 5–6).

As evidence mounted that college students, especially in the community college, were not achieving their goals, the Obama administration set a goal for millions more individuals to earn college degrees by 2020. The Bill & Melinda Gates Foundation in its project, Completion by Design, set a goal that 50 percent of community college students would earn a certificate, associate degree, or transfer by 2020. The Lumina Foundation adopted a "big goal": 60 percent of Americans would earn a high-quality degree or certificate by 2025. Over two thirds of the states initiated accountability funding measures that were generally tied to degrees or certificates. And Achieving the Dream, the national community college network organization founded in 2004, continued to promote reforms within community colleges to ensure that student success—typically measured by earning a degree or certificate or transferring—was the primary goal of each institution (Bailey et al., 2015, p. 7).

To reach these various goals many community colleges began to adopt the concept of the guided pathway. "The guided pathways approach to redesign starts with students' end goals in mind and then rethinks and redesigns programs and support services to enable students to achieve these goals" (Bailey et al., 2015). Researchers and leaders strongly agreed that students needed a clearly defined pathway to achieve their goals, and it was the responsibility of the institution to provide these pathways. By 2015, over one quarter of all community colleges in the nation were involved in these efforts.

The credit workforce programs were now faced with the need to adjust their activities to institutional changes suggested by the guided pathways approach. While workforce development programs always had strong accountability measures, such measures were primarily external to the institution and based on whether or not students got a job and how much they earned. Program initiation, design, and completion tended to be more *ad hoc,* developed to fit the needs of local employers. Workforce programs had been creating career pathways for many years, but the guided pathways concept required workforce educators to integrate pathways with liberal arts programs and to measure success by degrees and certificates earned. In addition, guided pathways required students to participate in wraparound services such as advising and counseling to help them better navigate the system.

Many of these strategies, however, are of dubious value to incumbent workers who are coming to the institution as "skill builders"—individuals seeking to increase their employment skills to provide for themselves and their families. Somewhat paradoxically, despite the continued efforts to bring credit and noncredit education together, the emphasis on guided pathways has led adults to pass up credit courses in order to selectively complete a series of courses on the noncredit side (Jacobs, 2017) that is more pertinent to their immediate needs.

6. Conclusion

The Great Recession of 2008–2010 stimulated enrollments in community college workforce programs to new heights. Adults facing employment disruption sought out community college programs to gain skills for new jobs. Furthermore, the Obama administration considered community colleges an "undervalued asset in our country" (Obama, 2009), and many programs were developed to position community colleges as the major workforce training providers in the nation.

In the next few years, the community colleges workforce development mission will need to adapt to three major trends. First, changes in the economy are producing a dual challenge for the colleges. As more jobs require higher skills, the education levels demanded by employers will continue to rise. This means that more community college workforce programs must assume that students should be prepared to complete a degree at a four-year institution or complete a community college baccalaureate. Except for allied health areas, most career and technical programs lack consistent integration between the skills programs and their "foundation" or basic liberal arts and sciences areas. Most occupational programs do not require these courses for certificates, and even if students want to complete a degree, occupational faculty consider them add-ons to be undertaken after they complete their technical program sequence. This is a mistake because not only do survey data clearly indicate that most career and technical students wish to obtain a four-year degree, but the evolution of many of these occupations means they will soon *require* a four-year degree. Even in work-based learning programs such as

apprenticeships, particularly the younger students view them as a first step toward a four-year degree. The work of Anthony Carnevale at the Georgetown Center on Education and the Workforce has been very important in emphasizing that degrees in specific college majors lead to income gains, and his data support the belief that both specific degree skills and general skills matter in the long run for anyone attending a community college workforce program (Carnevale, Jayasundera, & Gulish, 2015).

Second, the heterogeneity of students continues to intensify, challenging the ability of community colleges to offer a variety of workforce programs. Workforce programs must meet the needs of high school students looking for a career, existing workers needing skills to increase their mobility, and dislocated workers looking for a career change. The ability to provide not simply the instruction but also the support services to make these students successful thus becomes an important goal of the programs. They will require a coherent and well-developed progression of classes that have knowledge validity (i.e., students need to learn relevant subject matter so they can fulfill their goals). For some liberal arts courses, this bar is met through well-prepared faculty who are familiar and current with their subject matter, and can continue to hone and develop their skills. However, career and technical courses have an additional burden to consider: How well do their programs meet the current, and most importantly future, needs of employers within their communities? Unlike other areas of the community college curriculum, career and technical education must be relevant to the employment and earnings of the students.

Given a decade or more of funding cuts to community colleges in most states, it is likely that many community college career and technical programs have not managed to keep up with some of the technical changes in the occupational areas they educate and train students to work in. This is a special concern in health, manufacturing, and business sectors that have integrated information technology. For example, few colleges have the capability to deal with the impact of big data issues at the workplace. In many colleges the information technology (IT) programs are maintained as discrete career and technical programs, while most companies integrate information technology skills within their various business units, resulting in significant IT demands in jobs related to medical record technologies or mechatronic technology. Truck driving programs remain

traditionally focused, neglecting the potential impact of autonomous vehicles. Police academies rarely focus on cybersecurity training. Artificial intelligence raises another dimension for many of the programs—particularly in areas of accounting, marketing, and graphic and commercial design. The shift in many industries away from metals to composites, aluminum, and even additive manufacturing is not often reflected in construction and manufacturing curriculum.

Finally, the recent evolution in workforce education is producing a wide variety of activities and initiatives well beyond courses or programs. The workforce mission is not a separate stand-alone mission but integrated into all the rest of the college. This includes everything from serving as a place where entrepreneurial skills are taught, to providing technical expertise to local firms, to developing programs to serve the needs of high school students transitioning into career pathways, to promoting advanced technical training that results in a four-year degree. These activities do not fall under one administrative dean or a division of vocational education. They emerge out of many parts of the institution. The challenge in the future will be for college leaders to develop an organizational rationale which creates opportunities for all parts of the institution to participate.

Perhaps the best opportunity is for colleges to concentrate upon STEM initiatives, which will provide the basis for workforce programs to be linked to four-year college programs. Increasingly, job growth is not in areas that call only for some secondary education, but in sectors that require a four-year degree. Clearly, credit students understand this, as most national data indicate that students entering community colleges have four-year degrees as their goal. In many occupational areas where community colleges are strong—such as nursing programs—the employer desire for a four-year degree is already very apparent in most metropolitan labor markets. Moreover, the anticipated adoption of artificial intelligence by many sectors of the economy suggests that there will be even less employment for those without a four-year degree.

Thus, community colleges must continue to remain responsive to the unfolding needs of their communities for more employees who have four-year degrees and/or possess the appropriate basic skills to obtain these degrees. Clearly there will be many students, primarily adults, who need to acquire skills quickly so they can obtain meaningful work. Community colleges need to continue to provide that opportunity, but

they also need to indicate to students that they will need credentials of value if they are to be competitive in the labor market. This challenge will continue to inform the future of workforce development in the American community college.

Surveying the status of workforce development in community colleges, there are significant grounds for optimism. Polls of the U.S. population consistently rate community colleges positively as institutions that provide value. Moreover, a recent Gallup poll indicated that confidence in community colleges was highest among Americans who did not possess a four-year degree (Busteed & Newport, 2018). Indeed, the public is aware of these institutions, considers their workforce mission an important innovation, and supports the college and its workforce mission with enthusiasm. With that support, the future is very bright.

References

Altschuler, G. (2014). A defense of liberal learning. *Inside Higher Ed.* Retrieved from https://www.insidehighered.com/views/2014/05/15/essay-new-book-beyond-university

American Association of Community Colleges. (1988). *Building communities: A vision for a new century.* Washington, DC: Author.

Bailey, T. R., Jaggars, S. S., & Jenkins, D. (2015). *Redesigning America's community college: A clearer path to student success.* Cambridge, MA: Harvard University Press.

Busteed, B., & Newport, F. (2018). *Words used to describe "higher ed" make a difference*. Washington, DC: Gallup.

Carnevale, A. P., & Desrochers, D. M. (2001). *Help wanted…credentials required: Community colleges in the knowledge economy.* Princeton, NJ: ETS Press.

Carnevale, A. P., Jayasundera, T., & Gulish, A. (2015). *Good jobs are back: College graduates are first in line.* Washington, DC: Center on Education and the Workforce.

Cohen, A. M. (1998). *The shaping of American higher education: Emergence and growth of the contemporary system.* San Francisco, CA: Jossey-Bass.

Cohen, A. M., & Brawer, F. B. (1996). *The American community college* (3rd ed.). San Francisco, CA: Jossey-Bass.

Day, P. R. (1985). *In search of community college partnerships.* Washington, DC: American Association of Community Colleges.

Dougherty, K. J., & Bakia, M. F. (1999). *The new economic development role of the community college*. New York, NY: Columbia University, Teachers College, Community College Research Center.

Floyd, D. L., Skolnik, M. L., & Walker, K. P. (2005). *The community college baccalaureate: Emerging trends and policy issues.* Sterling, VA: Stylus Publishing.

Grubb, W. N., Badway, N., Bell, D., Bragg, D., & Russman, M. (1997). *Workforce, economic, and community development: The changing landscape of the "entrepreneurial" community college.* Berkeley, CA: University of California, National Center for Research in Vocational Education.

Grubb, W. N., & Lazerson, M. (2004). *The education gospel: The economic power of schooling.* Boston, MA: Harvard University Press.

Hull, D., & Grevelle, J. H. (1998). *Tech prep the next generation.* Waco, TX: Cord Communications.

Jacobs, J. (1987). *Training and public policy*. Ann Arbor, MI: Industrial Technology Institute.

Jacobs, J. (1989). Training the workforce of the future. *Technology Review, 92,* 66–72.

Jacobs, J. (1992). *Customized training: A priority for Michigan community colleges.* Watertown, NY: State University of New York Jefferson, Center for Community Studies.

Jacobs, J. (2001). What is the future for post-secondary occupational education? *Journal of Vocation Education, 26*(2), 172–205.

Jacobs, J. (2017, October). Adults and community college degrees. *Inside Higher Education.* Retrieved from https://www.insidehighered.com/views/2017/10/09/community-colleges-should-focus-more-educating-adults-essay

Jacobs, J., & Grubb, W. N. (2006). The limits of "training for now": Lessons from information technology certification. In T. Bailey & V. S. Morest (Eds.), *Defending the community college equity agenda* (pp. 132–54). Baltimore, MD: Johns Hopkins Press.

Jacobs, J., & Teahen, R. (1997). Shadow colleges and NCA accreditation: A conceptual framework. In *A collection of papers on self-study and institutional improvement* (pp. 13–19). Chicago, IL: North Central Association of Colleges and Schools.

Jenkins, D. (2018). *CCRC analysis of National Student Clearinghouse data on fall 2010 FTEIC, degree-seeking community college cohort*. Unpublished manuscript.

Karp, M. M., Jacobs, J., & Hughes, K. L. (2003). *Credentials, curriculum, and access: The debate over nursing preparation.* Washington, DC: Community College Press.

Liebowitz, M., & Taylor, J. C. (2004). *Breaking through: Helping low-skilled adults enter and succeed in colleges and careers.* Boston, MA: Jobs for the Future.

Macomb Community College. (2014). *Year one report: Innovation fund.* Warren, MI: Macomb Community College.

Makela, J. P., Bragg, D. D., & Harwell, E. (2015). *Applied baccalaureate degrees in STEM and technician education: Program implementation in five regions of the United States*. Champaign, IL: University of Illinois at Urbana-Champaign, Office of Community College Research and Leadership.

Modernization Forum Skills Commission. (1993). *Skills for industrial modernization.* Dearborn, MI: Author.

National Assessment of Vocational Education. (2004). *Final report to Congress.* Washington, DC: U.S. Department of Education.

National Coalition of Certification Centers. (2018). *History of NC3*. Retrieved from https://www.nc3.net/about/history-of-nc3

Newman, K. S. & Winston, H. (2016) *Reskilling America: Learning to labor in the twenty-first century.* New York, NY: Metropolitan Books

O'Banion, T. (2016). *Bread and roses: Helping students make a good living and live a good life.* Phoenix, AZ: League for Innovation.

Oakley, E. O., & Bynum, L. A. (2017). An engine of economic growth and a front door to entrepreneurship. *Community College Journal*, *87*(3), 5–6.

Obama, B. (2009). *Remarks by the president on the American graduation initiative*. Retrieved from https://www.scribd.com/document/17363960/President-Obama-s-Remarks-on-the-American-Graduation-Initiative-Macomb-Community-College-Warren-MI-July-14-2009-Transcript-Video-Link

Quigley, M. S., & Bailey, T. (2003). *Community college movement in perspective: Teachers College responds to the Truman Commission.* Lanham, MD: Scarecrow Press.

Rosenfeld, S. A. (1992). *Competitive manufacturing: New strategies for regional development.* New Brunswick, NJ: State University Press.

State of Michigan. (2009). *No worker left behind—outcomes for the first 18 months.* Lansing, MI: Department of Energy, Labor, and Economic Growth.

Teles, E. (2012). Curriculum and teaching strategies for STEM technicians. In D. Hull, *Career pathways for STEM technicians*. Waco, TX: CORD Publications.

U.S. Department of Labor. (2018). *TAACCCT program summary.* Washington, DC: Author.

Van Noy, M., Jacobs, J., Korey, S., Bailey, T., & Hughes, K. L. (2008). *The landscape of noncredit workforce education: State policies and community college practices.* New York, NY: Columbia University, Teachers College, Community College Research Center.