



Community College
Virtual Symposium

Integrating Industry-Driven Competencies in Education And Training Through Employer Engagement



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U.S. Department of Education
Office of Vocational and Adult Education

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Contents

Preface	1
Community Colleges and Workforce Development	2
Community College and Employer Partnerships	3
Employer Engagement in Curriculum Development	4
Partnership Efforts to Support Curriculum Development	5
McDonald’s English Under the Arches.....	5
Essential Skills Program, Community College of Denver	6
Automotive Manufacturing Technical Education Collaborative.....	7
Wisconsin Regional Industry Skills Education/ Shifting Gears Initiative	8
Discussion	10
References	12

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Preface

America's competitive advantage in the global economy depends on a qualified, skilled workforce.

A troubling gap, however, currently exists between the skills and knowledge of the country's current and projected workforce and the demands of jobs expected to grow most rapidly during the next decade. Community colleges are ideally positioned to help close that gap. President Obama has acknowledged this reality by calling for increased college graduation rates and a commitment among students to complete at least one year of postsecondary education (Obama 2009).

Community colleges have a long history as leaders in workforce education, collaborating with business and industry to meet local employment needs. They offer affordable tuition, open admissions, flexible course schedules, and convenient locations. They provide opportunities not only for students leaving high school, but also for older students, low-income and minority students, and working adults. Several problems, however, must be addressed if community colleges are to succeed as engines of workforce development and economic prosperity. These

challenges include low rates of student persistence and completion and insufficient alignment among education standards and workforce expectations.

This brief is one of a series of four prepared for the April 27, 2011, *Community College Virtual Symposium*, a project of the U.S. Department of Education, Office of Vocational and Adult Education, held at Montgomery College, Silver Spring, Md.¹ This series is intended to spur dialogue among state and institutional leaders and identify and disseminate policies and practices proven effective in meeting the challenges mentioned above.

Recent reports have highlighted urgent issues for workforce development in the United States and have suggested that community colleges play a role in addressing them by partnering with employers to align college curricula with workplace needs. This brief describes partnership efforts between community colleges and employers, exploring models promoting curricular change and innovation.

¹ The other three briefs include *Promoting College and Career Readiness: Bridge Programs for Low-Skill Adults*; *Aligning Secondary and Postsecondary Education: Experiences From Career and Technical Education*; and *Connecting Curriculum, Assessment, and Treatment in Developmental Education*.

Community Colleges and Workforce Development

By 2014, about half of all jobs will require training beyond a high school diploma (Holzer and Lerman 2007). Likewise, data from the Bureau of Labor Statistics have indicated that overall U.S. employment will increase by 10.1 percent by 2018, with the fastest projected growth in jobs requiring some postsecondary education and training (Lacey and Wright 2010). Carnevale and Rose (2011) predicted that the U.S. workforce will require an additional 20 million workers with some postsecondary training by 2025 and suggested that the country is currently not on track to meet this goal.

This gap between worker supply and demand has important implications for both workplace efficiency and income equality because research has shown that workers with postsecondary credentials earn more than their peers with no postsecondary training (Carnevale and Rose 2011; Carnevale, Smith, and Strohl 2010). These studies suggest that as more jobs require postsecondary education, community colleges will continue to play a significant role in training individuals for the workplace.

Recent reports also have highlighted a mismatch between employer demands and job applicants' skills, suggesting that workforce training needs to be more closely aligned with the skills and competencies required for employment. In a 2011 survey of more than 2,000 companies, employers reported difficulty finding workers with the right skills to fill job openings, with 40 percent responding that their companies had openings posted for more than six months (Manyika et al. 2011).

Likewise, changes in labor market skill requirements, especially due to the increased use of technology in the workplace, have pointed to the need for more postsecondary education and training (Martinson 2010; Carnevale, Smith, and Strohl 2010; Levy and Murnane 2004). The results of another employer survey, conducted in 2006, indicated that high school graduates and those with associate's degrees often lack the basic and applied skills to enter the workforce (The Conference Board et al. 2006). The findings of this survey and other reports stressed the importance of general employability skills, such as professionalism, communication, collaboration, and critical thinking, for the workplace and emphasized that they are key for success in a knowledge-based economy (The Conference Board et al. 2006; Carnevale 2008; Lamos et al. 2010; Levy and Murnane 2004).

Addressing these workforce issues effectively will require stronger links between employers and those who prepare employees for work and careers (Martinson 2010; Corporate Voices for Working Families 2010). President Obama's October 2010 announcement of the Skills for America's Future initiative, led by the Aspen Institute, and related initiatives by private foundations have emphasized the need for community colleges and businesses to form effective partnerships for workforce development.² The various ways in which community colleges collaborate with other organizations, including employers, have been described in several reports, which suggest that changes in the economy underscore the value of such partnerships (deCastro and Karp 2009;

² See, for example, the Bill & Melinda Gates, Ford, Joyce, Lumina, and Charles Stewart Mott foundations.

Grubb 2001; Orr 2001). State budget reductions, for example, have necessitated many community colleges relying more on partnerships with other organizations to

help build their capacity to offer workforce training programs (Kisker and Carducci 2003; Martinson 2010).

Community College and Employer Partnerships

Many community colleges have worked hard to develop relationships with local employers and respond to changing labor market needs in a timely way by aligning workforce training with employers' skill requirements (MacAllum, Yoder, and Poliakoff 2004). In this way, partnerships with employers help colleges to develop curricula that prepare workers for good jobs and supply employers with skilled, well-trained employees (Harmon and MacAllum 2003). These partnerships enable employers and colleges to “leverage their combined knowledge of labor markets, skills, pedagogy, and students” (Soares 2010, 1).

The literature on partnerships has emphasized one-to-one local collaborations between employers and community colleges, as well as regional, and sometimes state, initiatives. For example, as of 2000, at least 90 percent of community colleges offered contract training—contracting with employers to train current or prospective employees in job and academic skills—to improve the academic and technical skills of incumbent workers (Dougherty and Bakia 2000). Other partnership models involve employers as one of many partners, including industry associations and workforce intermediaries. These models include sector training, such as career pathway programs, in which employers help identify current and future training needs to be incorporated into curricula targeted at specific industries (Martinson 2010; Institute for a Competitive Workforce and National Career Pathways Network 2009; Barnett 2008).

Many partnerships are formed in response to changing local needs. MacAllum, Yoder, and Poliakoff (2004, 1) described the need for colleges to be “flexible” and “market-responsive” in order to keep pace with “ever-evolving job skills in a continually changing work environment.” An example is the training program and credential in wind energy developed by Columbia Gorge Community College in Oregon to address a need for skilled employees at local turbine companies (Soares 2010). This example illustrates creative ways in which community colleges have formed partnerships to address immediate local needs, particularly in new, changing fields, and contribute to regional economic development. Data are limited, however, on how many of these partnerships exist and what outcomes they produce (Amey, Eddy, and Ozaki 2007).

More research is needed to understand the formation, sustainability, and impact of community college and employer partnerships. While employers partner with community colleges in many ways and for many purposes, such as by providing work-based learning to students and externships to faculty and by donating equipment, this brief focuses on employer participation in curriculum development. The continuum described in the following section suggests a useful way to view employer engagement at the curricular level: as a continuum of involvement that ranges from serving on advisory boards for technical degree programs to actively participating in the development of curriculum and training.

Employer Engagement in Curriculum Development

Employers involve themselves in curriculum development with varying degrees of intensity. At the low end of the continuum, employers may serve on advisory boards to develop curriculum for technical degree programs and offer general advice on workforce issues and local labor market needs.

Further along the continuum, employers may partner with colleges to design training for their immediate workforce needs and/or contribute to industry-led efforts to prepare students for jobs. Employers may also donate equipment required to meet certain curricular needs and provide and help in developing curriculum for student job shadows and internship experiences, as well as serve as a source and recruiter for adjunct faculty in their industry area.

At the highest end of the intensity continuum, employers and colleges work together closely to analyze workforce needs and develop curriculum and training to meet those needs. These activities are not mutually exclusive: employers and community colleges may be involved in all these kinds of efforts simultaneously. The remainder of this brief focuses on partnerships that support curriculum development at the highest end of the continuum.

For example, employers' most intensive involvement with community colleges may take the form of collaboration that integrates industry-driven competencies into college curricula to ensure that students can obtain credentials valued by the labor market (Bozell and Goldberg 2009; Soares 2010). Specific examples include apprenticeship programs, in which individual employers and/or industry groups set standards, develop curricula, and offer work

experiences (Lerman 2009), as well as individual partnerships that respond to local employment needs by integrating industry competencies into college curricula (Aragon, Woo, and Marvel 2004).

Certification programs, in particular, are a formal way for industry partners to define their specific skill needs, align them with assessment requirements for obtaining certification, and design training to help students master the skills and become certified. The Cisco Networking Academies, for example, train high school and community college students nationwide in the IT and network administration fields and prepare them to obtain industry certifications and enter postsecondary degree programs (Bozell and Goldberg 2009). College vocational programs leading to associate's degrees, such as nursing and business, are examples of the most formal integration of industry content into college curricula.

Close integration of employer needs and community college training programs offers several advantages, including the "standardization of curriculum, credentials, processes, and procedures" (Bozell and Goldberg 2009), making expectations clear for both employers and students. Occupational skill certification programs awarding a credential applicable to several employers across an industry sector, for example, can provide a uniform way for businesses to communicate the skills required for specific jobs and for community colleges to standardize their training (Martinson 2010). This approach also ensures that college curricula remain relevant to employers' needs and can adapt to quickly shifting workplace realities. According to Carnevale and Desrochers (2001, 26), "By integrating their

curricula among certificate, degree, and customized training programs, community colleges respond to the curriculum demands of students and employers, better align their programs with workplace needs, and shore up the validity of the credentials they confer.”

Community colleges need and value various types of employer involvement. Current and predicted changes in the economy and workforce demands, however, argue for even closer, more substantive collaboration between the two to develop curriculum and training programs.

Partnership Efforts to Support Curriculum Development

The following four examples illustrate several approaches to employer engagement in curriculum development, with a focus on those at the intensive end of the continuum. While the partnerships described below have not all been rigorously evaluated, they highlight partnerships between community colleges and a single employer, multiple employers, and industry groups, as well as a state effort to promote college-employer partnerships through policy. In all four examples, employers play an active role in defining their skill and competency needs and working with colleges to integrate the skills into the curriculum.

McDonald’s English Under the Arches

To improve the English language and workplace skills of aspiring managerial employees, McDonald’s launched the English Under the Arches program, driven by a corporate value to promote from within. McDonald’s realized that a language barrier may be preventing many otherwise qualified staff from being promoted (Jaschik 2009).

To address this need, the company convened an advisory panel of national adult English as a second language (ESL) experts and partnered with the College of Lake County in Illinois to design and

deliver a unique, contextualized English-for-work curriculum. The curriculum was built around the specific workplace knowledge, terms, forms, and skills necessary to become a successful manager at a McDonald’s franchise. It is delivered with and through the technologies graduates will use most at work: the Internet and the telephone.

As the program has expanded, McDonald’s has recruited community college instructors to teach the curriculum modules. The courses are modeled on a blended-learning approach, with a cohort meeting in person for the first session to meet the instructor and classmates and to learn how to use the technology in future sessions. Subsequently, the cohorts participate in live, virtual courses via Web conferencing, which they access from their restaurants’ “crew rooms.” The virtual courses are complemented by individual online practice, on-the-job activities, and periodic face-to-face sessions.

This partnership was developed in response to a training need identified by the employer. As a result, staff at McDonald’s USA headquarters were heavily involved in designing the program and developing the curriculum. Franchises pay a tuition fee per student for each course to cover instructor costs, and they subsidize employees’ time to participate. This model

is now available in many McDonald's regions, with support from the U.S. human resources office. McDonald's piloted English Under the Arches in three regions in 2007 and has since expanded to over 30 sites in 14 regions (McKay 2010).

Since the program's inception in 2007, 87 percent of participating employees have completed the program, and 90 percent have remained in their jobs three years after program completion (McKay 2010), countering the high turnover rates common in the fast-food industry. Managers cited an increase in participants' use of English on the job (Jaschik 2009), and employees spoke of their growing confidence in English not only on the job, but also with their families and in the community. English Under the Arches has been recognized as an innovative national model of immigrant integration and of corporate support for English literacy development. The program was honored with the E Pluribus Unum prize by the Migration Policy Institute in 2010, the Literacy Leadership Award from the National Coalition for Literacy in 2010, and a Corporate Innovator Award from the Illinois Coalition for Immigrant and Refugee Rights in 2011.

Essential Skills Program, Community College of Denver

The Essential Skills Program (ESP) at the Community College of Denver (CCD), in Colorado, is an example of a local response to changing labor market needs. It was created in 1997 to provide training to Temporary Assistance for Needy Families (TANF) recipients to work as bank tellers and early childhood education workers, filling important local labor market shortages at the time and has since been updated as needs in other industries have been identified (Baker 2011).

ESP students participate in four months of contextualized basic skill training, preparing them for entry-level work in various industries, such as information technology, early childhood education, financial services and accounting, community health, medical clerical work, phlebotomy, and central supply technology, and earning them an Essential Skills certificate recognized by local employers (Person, Pavetti, and Jeffrey 2008). After a month of classroom instruction, participants work three days a week in an internship and attend class the other two days. In this way, they receive both college credit and work experience (Martinson 2010).

According to the program founder, training programs should consult labor market data and discussions with employers to understand their needs. Conducting an analysis of labor market data provides preliminary information, but local employers can offer more details on their hiring needs, future plans, and the extent to which existing training programs can meet these needs (Baker 2011).

Once their needs are identified, employers play a central role in the ESP program, which includes helping to define skills and competencies to be taught, reviewing curricula, and hosting participants in internships and work experiences (Martinson 2010). Employers also report weekly on intern performance to participants and ESP staff, which helps participants become familiar with formal performance review processes.

ESP staff recognize that their students may need additional academic preparation for job success. To ensure their understanding of the employment situations, ESP staff conduct a literacy task analysis of

entry-level job requirements³ and meet with frontline supervisors to better understand the necessary skills and competencies (Baker 2011). This analysis guides curriculum development, ensuring that students leave the program well prepared for the workforce.

The program's core course, Communications for the Workplace, teaches basic skills in the general workplace context and can be tailored to specific employers. Depending on their selected industry, participants also take at least two industry-specific courses from CCD's regular course offerings (Baker 2011).

The ESP has been featured in several publications as an effective strategy for preparing low-skill adults for employment and increasing the participation of TANF recipients in the labor market (Melendez and Suarez 2001; Person, Pavetti, and Jeffrey 2008; Martinson 2010). A report from the Breaking Through initiative at CCD includes some outcomes on ESP, including a 70 percent completion rate, 86 percent employment rate for program completers, and 84 percent job retention rate after one year of employment (Liebowitz and Taylor 2004). Moreover, while the program focuses on improving participants' employment outcomes, approximately 25 percent continue in postsecondary education.

Automotive Manufacturing Technical Education Collaborative

The Automotive Manufacturing Technical Education Collaborative (AMTEC), a consortium of community colleges and employers, is an industry-led partnership to develop a standardized curriculum based on

industry skills and competencies. With National Science Foundation (NSF) funding provided to the Kentucky Community and Technical College System (KCTCS), AMTEC started as a partnership between Toyota and KCTCS for both customized training and technician education (Lamos et al. 2010).

Starting in 2006, KCTCS was awarded an NSF planning grant to explore whether and how to involve more colleges and employers in the partnership. During this exploration, AMTEC found that the various automakers had common needs and realized that an industrywide curriculum could be developed to meet those needs (Parker 2011). KCTCS applied for and received additional NSF funds to become an Advanced Technological Education (ATE) program and scale up its partnerships (Zaragoza 2010). Currently, AMTEC consists of 30 community colleges and 34 employers and has expanded to 12 states (Lamos et al. 2010), with colleges and their local auto plants joining as partners. KCTCS remains the fiscal agent for AMTEC.

AMTEC was one of the first joint training endeavors across competing auto companies. Employers, including Toyota, Ford, General Motors, BMW, and others, play an active role in developing curriculum to serve their various needs, ranging from profiling employees' skills and knowledge, to identifying common workplace tasks, to assessing gaps between industry-required skills and skills taught in existing curricula (Lamos et al. 2010).

During the planning phase, employers and colleges convened at an AMTEC Academy, now held twice a year, to determine how to collaborate and identify key issues common to all employer partners, including career pathways and future workforce needs. In particular, the industry partners emphasized the need to fill shortages left by the retirements of highly

³ A literacy task analysis determines workplace skill requirements by analyzing the literacy levels of workplace documents, print materials, and other on-the-job resources (Taylor and Lewe 1990).

skilled workers, along with training entry-level employees. Moreover, the competing automakers acknowledged the importance of collaboration in developing a curriculum to support the whole sector (Parker 2011).

To address industry skill needs, AMTEC's goals are to integrate industry skill standards into community college curricula; identify assessments aligned with industry certifications to measure skill attainment; develop training models to be adapted for local industry needs; and design career pathways for students (Automotive Manufacturing Technical Education Collaborative n.d.). The AMTEC curriculum, which will be available in fall 2011, consists of 12 courses and 62 modules leading to an associate's degree that can be tailored by colleges and industry partners to meet local training needs. To ensure that the curriculum meets employers' needs, industry representatives serve as leaders in developing each of the 12 courses and are collaborating to develop both a physical and virtual trainer to provide incumbent workers with experience using tools and machinery found in the workplace (Parker 2011).

Employers also play a leadership role in planning and hosting the biannual AMTEC Academies. The Academies are designed to further develop relationships among the various partners and to address issues of importance to local economies. They are jointly hosted by a community college and industry partner. In addition to discussions related to career pathways and industry skill needs, each Academy involves a tour of the local plant to highlight the workplace applications of the skills being taught and stress the importance of involving both education and industry in the partnership (Parker 2011). These events help bridge important language and cultural gaps between education and industry.

According to a case study of AMTEC, the partnership benefits employers, community colleges, and students. Benefits include a highly trained workforce for employers, an industry-validated curriculum for community colleges, and training linked to high-demand occupations for students (Lamos et al. 2010). As Parker (2011) notes, employers also benefit significantly from relationships with other employers and with the colleges by gaining access to information on best practices to help improve their workplaces. AMTEC is being evaluated by the Community College Research Center and has been profiled in career pathway publications and in a case study report (Institute for a Competitive Workforce and National Career Pathways Network 2009; Lamos et al. 2010).

Wisconsin Regional Industry Skills Education, Shifting Gears Initiative

By promoting state policy change, the Joyce Foundation Shifting Gears initiative encourages partnerships between employers and state community college and workforce systems to improve regional labor market outcomes for low-skill adults. Six states—Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin—currently participate in Shifting Gears, and they receive funds from the Joyce Foundation to design and implement policies to increase postsecondary credential attainment and support reforms in adult education, workforce development, and postsecondary education (Strawn 2010).

Shifting Gears states are working with employers to meet state policy goals in various ways. These include forming regional industry partnerships to oversee career pathways; analyzing labor market information to identify high-demand occupations; integrating

workplace competencies into curriculum and instruction; and designing basic skills and occupational training programs to meet labor market needs (Shifting Gears 2009).

Wisconsin's Regional Industry Skills Education (RISE) initiative illustrates the state's efforts to involve employers systematically in policy discussions and promote regional and local partnerships to support the development and implementation of career pathways. RISE is directed by the state technical college and workforce development agencies and features partnerships between the two to provide training opportunities for low-skill adults. During RISE's initial phase, the state's agencies collected and analyzed education and workforce data to better understand adults' progression through pathways and to identify strategies for improving their transitions (Strawn 2010).

Currently, Wisconsin employers serve on advisory boards for occupational and technical degree programs at each of the state's 16 technical colleges (Dresser 2011). Through the advisory boards, employers provide input into curriculum development and clinical placements (Dresser 2011). Through RISE, the state hopes to focus on strategies for aligning basic skill training with the existing postsecondary occupational training programs.

With funding from Shifting Gears and other sources, Wisconsin has adopted a two-pronged approach to engaging employers: creating regional industry partnerships in targeted high-growth industries and developing career pathway and bridge programs at the state's 16 technical colleges (Dresser 2011). The regional partnerships were designed to obtain information on industrywide training needs and to align pathway and bridge programs to address these needs.

Through RISE, local colleges have reached out to employers serving on existing advisory committees for occupational and technical degree programs and by developing new partnerships (Chung 2011). For both existing and new partnerships, the RISE pathway and bridge programs target adult learners, offering accelerated basic skill instruction to help them transition into and complete postsecondary credentials aligned with the occupational technical degrees (Strawn 2010). For example, after convening local manufacturers to discuss their training needs, Western Technical College designed a new career pathway in computer numeric control (CNC) machining. In developing the pathway, the college also surveyed employers to further discuss their needs and to define key steps (Chung 2011). This resulted in the CNC Skills Institute, which the college implemented in 2009 to provide instruction related to operation, setup, and programming (Valentine and Pagac 2010). The first step targets low-skill adults by offering basic skills instruction combined with technical training, including courses in manufacturing math and blueprint reading.

At Wisconsin's Northcentral Technical College, college staff worked with local health-care providers to develop a Certified Nursing Assistant (CNA) bridge program for English language learners (Chung 2011). The CNA bridge was developed in response to employers' need for a more diverse workforce to better serve patients, especially given the state's large Southeast Asian population (Valentine and Pagac 2010). Participants in the 10-week program receive instruction team-taught by English language and CNA instructors. Once they have completed the bridge, participants can pursue other postsecondary training to prepare for various health-care careers.

Discussion

These examples illustrate that there are many ways that community colleges and industry can work together to shape curriculum and programs that ultimately benefit the students who gain marketable skills. Such partnerships can bridge the seeming paradox of high unemployment and unfilled positions due to a mismatch of skills and jobs (Manyika et al. 2011; Carnevale and Rose 2011). Preparing workers for available jobs creates a win-win situation for the partnership as well as for the communities.

The examples of promising partnerships in this brief represent various ways that colleges and employers can form partnerships. McDonald's Under the Arches program is an example of an employer-led initiative to support employee development. ESP illustrates a college's response to local employers' training needs. The AMTEC development model provides an example of federal investment in a broad partnership to support a major U.S. industry. Finally, RISE was partly funded by resources from Shifting Gears, a foundation initiative to revitalize midwestern states' economies. These examples highlight the important role that foundations and the federal government can play in incentivizing employer-community college partnerships. They also offer three specific findings, as discussed below, that can guide partners and policymakers as they work to develop other innovative partnerships.

Solutions can be local. If community colleges are to be successful in meeting local and regional labor demands, then by definition, the solutions often need

to be devised locally. There may not be a concise set of best practices for community college-industry collaboration nationwide. Rather, these entities need to be encouraged to come up with innovations for their own communities. Having the right conditions in place for such changes— flexibility, creativity, expertise—can raise the probabilities that such solutions can be constructed.

Ongoing relationships are key. Just as emergency first responders must maintain open channels of communication through crises, so, too, must those in the community college-industry partnership so that they can serve as first responders to changes in the local and regional labor market. They can keep these channels of communication open through such formal mechanisms as assigned participation on Workforce Investment Boards and advisory boards or individual arrangements between colleges and employers.

More information sharing is needed. In each example, researchers noted a lack of access to information on innovative partnerships. While much has been published about employer- community college partnerships, partners could benefit from a more central repository of updated information or a shared knowledge base to learn from others who are facing similar implementation challenges. Although solutions may be local, the problem-solving building blocks could be helpful to others involved in creating and supporting promising partnerships.

Similarly, there is a glaring lack of evaluation data available on partnership initiatives. More research is needed to determine how these initiatives affect students' long-term academic or vocational achievements or how initiatives are sustained by the

partners and for how long. These kinds of data will be invaluable to partnerships between community colleges and employers as they continue to work toward closing the current gap between worker supply and demand both locally and nationwide.

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