A Study of Workforce Training Challenges Faced by a US Community College and a Comparable Chinese Institution

Harry Hou, College of DuPage, USA

Diane E. Oliver, California State University–Fresno, USA

ABSTRACT

This qualitative comparative case study examines the workforce training programs offered in a US community college and the vocational and technical programs offered in a comparable Chinese postsecondary institution. The study sought to identify transferable qualities and characteristics that could contribute to improving the workforce training programs in both countries. Globalization makes international collaboration between institutions and programs ever more important, particularly considering the many shared problems and potential for shared solutions. The study's findings resulted in four primary recommendations that could be adopted by both the US and Chinese case institutions: (a) create timely new programs and courses, (b) seek new funding sources and alternatives for reducing operational costs, (c) recruit qualified full-time or part-time faculty who have industry experience, and (d) add a critical thinking component in all courses. Moreover, recommendations for each of the institutions were developed.

Keywords: *Career and Technical Education, China Postsecondary Education, Community Colleges, Comparative Education, Globalization, International Study, Vocational Education, Workforce Training*

INTRODUCTION

This qualitative study involved two cases, a US community college and a comparable Chinese institution selected on the basis of criteria equivalences. Contrasts between the two cases were based on systemic factors including philosophical, cultural, economic, political, and functional differences. The researchers conducted fieldwork at the institutions and data were primarily gathered from interviews with administrators and faculty. Four main objectives of the research were to (a) understand the concepts behind workforce training programs in a US community college and a Chinese institution; (b) identify and explain the workforce training model employed at each institution; (c) describe and analyze the similarities and differences of the workforce training programs;

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and (d) explore the possibility of adopting, or adapting positive characteristics from each of the workforce training programs to benefit the postsecondary education systems in both countries.

Although the study was guided by five research questions, this article specifically focuses on the findings of the fifth culminating question: What similarities and differences exist between the workforce training programs of a US community college and comparable Chinese institution? The other four questions were used to conduct the individual case studies: how are the workforce training programs organized and operated; what administrative decision-making processes are used when establishing a new workforce training program; how does each institution plan for a workforce training program in relation to financial support, teacher preparation, and student services; and what strengths and challenges do the workforce programs exhibit?

In addition to providing insights into workforce training programs in the US and China, the research resulted in strategies and suggestions to help meet the challenges of educating a high quality workforce for a globalizing economy, which requires community colleges and other postsecondary vocational institutions to educate an increasingly skilled and globally competent workforce.

Review of Related Literature

The US community colleges have been a major contributor in training the workforce to meet local community needs for over a century. Since the 1980s, workforce training in US community colleges has grown so rapidly, particularly in health, office automation, and technology programs, that the US is perceived to hold an advantage in workforce training program development when compared with most other countries (Cohen & Brawer, 2003). Keating, Medrich, Volkoff, and Perry (2002) reported that recent US vocational education reforms have emphasized greater academic preparation and further education and training. Moreover, Smith (2007) argues that the US community college model, which focuses on career education in health care, law enforcement, business, and other fields, has a positive effect in other countries.

The US government recognizes the importance of community college workforce training programs, as shown in a Government Accounting Office (GAO, 2008) report:

"Community colleges are providers of education and training for those seeking basic skills for entry into the workforce as well as those seeking to acquire new skills or upgrade existing ones to obtain a different job or retain current employment." (p. 1)

Also, US President Barack Obama (2011) has announced that industry partnerships with community colleges will lead an initiative called Skills for America's Future, which aims to help workers gain new skills to make America more competitive in the global economy and to help employers find the trained workforce they need to compete internationally.

China has been considered one of the largest manufacturers and labor markets in the world for the last few decades, producing a massive quantity of products and goods for the world economy (Yu, 2004). To sustain its booming economy and compete with the world, China must continue to cultivate a large number of skilled and knowledgeable workers who receive internationalized higher education (CICTE, 2009; Jie, 2007). Entering the new century, China has been making comprehensive reforms, integrating vocational education with economic and societal development, and using advanced teaching methods and technology (Li, 2003; Yang & Zhang, 2003; Shi, 2001). The new market economy has created both a critical demand for career development of the masses and increased openings for career professionals (Zhang, Hu, & Pope, 2002).

In order to keep an economic edge in advanced technology and sustain production in worldwide factories, the educational institutions of the US and China need to (a) improve

the quality of the workforce training programs, (b) train a large number of highly skilled and qualified workers, and (c) address globalization of the workforce. Globalization impacts the socioeconomic development of countries through avenues such as transportation, communications, information technologies, and higher education, as well as systems and structures (Hinchcliff, 2000; Levin, 2001; Salmi, 2000). Andringa (2001) asserts that higher education needs to be more international in relation to thinking, students, faculty, and curriculum. Cultures and nations are always in interaction with the local and global (Appadurai, 1996); they are collectives of cross-cultural relations. Most importantly, globalization, as Levin (2001) points out, tends to promote advanced technology and research achievements.

Over the past decade, China has turned to several countries for guidance, including Australia, Germany, Canada, and the United States, which according to Hvistendahl (2008), have been providing programs and models in vocational education. Higher education opportunities have become an important goal for developing countries like China. As Carnoy (2005) states, knowledge is fundamental to globalization, and the global economy is a knowledge economy. Highly populated countries are particularly challenged by the desire to achieve massification in their educational systems.

Workforce training programs must face the impact of globalization. Salmi (2000) states, "globalization is happening, whether one approves of it or not, whether one likes it or not, and every country in the world, every firm, every working person is affected by it" (p. 3). Finding ways to improve higher education is a global challenge and has become increasingly important to individuals (e.g., better lives, higher social status, and increased earnings), society, and economic prosperity (Johnstone & Marcucci, 2010).

Bloom (2002) argues that globalization has both facilitated, and been facilitated by advances in information and communications technology. The information flows of globalization can help institutions benefit from foreign experience and collaboration to prevent and solve problems. The combination of globalization and higher education offers potential for improving living standards. Thus, globalization creates increased pressure on countries to provide more postsecondary education and higher quality within that system (Bloom, 2002). In brief, the impact of globalization on workforce training is evident in the four global Cs: competence, community, competition, and cooperation.

The pioneer of globalization theory, Robertson (1992), described globalization as "the compression of the world" (p. 8), which means a shrinkage in the effective distances between people and places. According to Levin (2001), the community college has become a globalized institution affected by the global workforce in four domains: (a) economics, (b) culture, (c) information, and (d) politics. Workforce training programs must build bridges across economic, geographic, and language gaps by training internationally qualified students who can understand, appreciate, and integrate with foreign cultures. In addition to technical skills, the students' competitive capabilities when entering the workforce should be demonstrable in three key areas: (a) acquisition of extensive international knowledge, (b) high-level thinking skills, and (c) creativity and innovation (Roekel, 2010).

METHODS

A qualitative inquiry and descriptive case study strategy were used to gain a detailed understanding of the phenomenon of interest (workforce training) at a US and a Chinese institution. Through comparative education, and in this research the comparison of case studies, ideas and practices can be transferred from one country to another. As Phillips and Schweisfurht (2008) state:

"[Comparative studies] identify good practice elsewhere… [and] such good practice might be seen as potentially adoptable in (and adaptable to) the 'home' context. We might 'learn from' the

foreign example and attempt reform that could benefit from its perceived advantages. . . . [This is] generally known as 'borrowing." (p. 17)

The case study institutions were a US community college (USCC) located in the US Midwestern region, and a comparable Chinese institution (CCI) located in the Midwestern region of China. Both institutions have more than 10,000 students enrolled. The USCC had a workforce training division while the CCI was an educational group specializing in workforce training and affiliated with a university. The case selection was based on four criteria: (a) postsecondary institution, (b) workforce training program in the institution, (c) similar program sizes, and (d) researcher accessibility. Two administrators and one senior faculty member at the USCC and three administrators at the CCI were selected as participants based on two criteria: (a) position--the director or dean responsible for, or senior faculty members teaching in workforce training programs; and (b) professional experience--at least five years experience in workforce training programs. Data were collected through interviews, which were triangulated with document reviews, website archives, and field notes.

Following Merriam's (2001) guidance for within-case analysis, each case was treated as a separate comprehensive case, and the researcher sought to learn as much contextual information as possible. Then a cross-case analysis was conducted to compare and contrast the two cases thereby identifying and analyzing the similarities and differences. From this analysis, potential transferability was examined based on a framework adapted from work by Phillips and Schweisfurth (2007). Comparative education studies can assist policy makers, administrators, faculty, and student services staff to reflect on the overall purposes, structures, and directions of workforce training programs, as well as understand limitations and potential opportunities for improvement.

FINDINGS

The findings in this study addressed the culminating research question: What similarities and differences exist in the workforce training programs operated by a US community college and a comparable Chinese institution? Phillips and Schweisfurth's (2007) framework of "borrowing" suggests regarding the country as a basic unit of analysis and comparison; however, in this study, the contexts of country, institution, and programs are the most appropriate units for comparison. The framework for presenting the findings is structured around seven categories that reflect the other four research questions: structure and operation, mission, financial support, teacher preparation, curriculum development, teaching methods, and student enrollment and services. In some instances, the positive characteristics that have been identified are potentially transferable (with adaptations) from one institution to the other and could lead to workforce training program improvements.

Comparative Case Analysis of Workforce Training Characteristics

Structure

The case institutions have similar organizational structures (Table 1), which seem to function effectively, but contrast sharply in their mode of operation due to political differences. In the USCC structure, the Board of Trustees and Academic Affairs are strengths. The Board of Trustees is a democratic organization elected by community constituents; the Board is responsible to the community. Typically, the Board also includes a non-voting student member, normally the student body president. USCC Academic Affairs treats workforce training as having equal priority with other programs. This principle is based on the mission and goals of the college, which provides workforce training as one of its five major functions: liberal arts (transfer), workforce training, remedial edu-

Table 1. A comparison of organizational structure

Category	USCC	CCI
Steering Committee	The College Board of Trustees	The University Party Committee
Administration	The President's Cabinet	Presidential Meeting
Academic Structure	Academic Affairs	The Educational Group
Services Structure	Student Affairs	Student Management Center

cation, continuing education, and community services. Therefore, the USCC is attentive to workforce training program funding and faculty requirements.

Although the level of attention given to workforce training by the USCC may serve as a good point of reference as workforce training gains recognition in China, the Board of Trustee functions are not suitable for the CCI context. In the CCI, two advantages emerged from the case comparison—quick conflict resolution for expedited decision-making and student support services. First, the institutional Party system is able to resolve conflicts among administrators and managers effectively because the Party system has different levels of committees, each reporting to an upper-level committee that can appoint or remove anyone on a lower level. Second, the CCI provides direct student services through the Student Management Center. This center provides services through student advisors, who reside in student dormitories; the advisors closely monitor and guide all student activities, providing immediate help to students when needed. Although the USCC does not have dormitories, this idea of having a student adviser to more closely guide and assist students could be used as a reference.

Mission

The mission and goals provide guidance for program objectives; therefore, it is important to clearly articulate the mission and establish feasible goals. Three strengths were identified in both institutional mission statements: (a) they strive to provide a high quality education and be a front runner in the field; (b) they establish a set of workforce training goals for the institution to produce not only a capable workforce, but also qualified graduates for advanced study; and (c) they provide opportunities for adult students to continuously update their knowledge and technological skills and to meet their personal needs. These goals are clear, feasible, and relevant to the socioeconomic needs of both countries; the goals could transfer well to similar institutions in these two countries and others.

Decision-Making

The processes for initiating a new program proposal differ at the case institutions; however, the approval processes have similar steps (Table 2). At the USCC a new program requires state approval while the CCI looks to a national ministry. At the USCC, faculty members must initiate a proposal; but the program advisory committee, which includes representatives from related industries, is the most important source of ideas. Administrators and students, especially working adult students, also may provide valuable program suggestions. Innovation is encouraged and creating new programs and courses is considered a faculty job requirement. At the CCI, the teaching research unit in each institute is the main source for new program proposals. However, the CCI is encouraged to adapt curriculum from the University rather than initiate new programs. The USCC advisory committee concept could be transferable to the CCI and could be piloted by initiation of a new program that meets industry requirements.

Table 2. A comparison of decision making for a new program

Category	USCC	CCI
Origination of the idea for a new program	• Faculty • Advisory Committee • Job Market Demands • Administrator • Student Requests	• Teaching Research Unit • Administrator • Job Market Demands
Initiation of the proposal	• Faculty	• Teaching Research Unit
Process of approval	• Discipline • Division Curriculum Committee • College Curriculum Committee • State Educational Board	• Instructional Committee • Institutional Expert Committee • Presidential Meeting • A Committee affiliated with the Ministry of Education

Financial Support

Table 3 summarizes major funding streams that provide sources of financial support for the workforce training programs. Both institutions support their programs through tuition, with small amounts of grants and special funding from the government. General funding shortages lead to increased tuition. A large project or capital budget increase requires government investment or other sources. At the USCC, tax revenue is used to provide a relatively large portion of general funding for the institution. In the last decade, but particularly since the recession in 2008, state budget cuts have affected most public postsecondary education institutions. One administrator interviewee stated that private donations have also declined. Tuition and fees comprise almost 40% of the USCC's funding, and the trend is toward continued tuition hikes to compensate for shortfalls in state and local appropriations. The community has shown support for the USCC and its workforce training programs, however, by approving bonds that enabled the construction of two new buildings. The CCI receives support for capital investment from the affiliated university, which allows the CCI to use University facilities and laboratories. Tuition then provides 100% of the revenue to cover general operating costs (e.g., employee salaries). Occasionally, the government designates special funding to support a particular workforce training program such as teachers' training.

Although financial sources in the case institutions are slightly different, both face funding shortages. In the USCC, cuts in funding from the state are the major challenge. In the CCI, financial support is solely based on tuition, which impedes growth. Both institutions recognize the need to seek alternative funding streams for support of current and new programs.

The USCC has three approaches for increasing funding and resources that are feasible. First, private donations in the form of funding

Table 3. Comparison of funding sources

USCC	CCI
• Tuition and Fees • Local Tax and State Appropriation • State and Federal Grants • Private Donations • Bonds	• Tuition • State Specialized Funds

Table 4. A comparison of teacher preparation

USCC	CCI
• Full-time position: Need-based • Requirement: Master's degree, otherwise specific experience • Faculty sources: Mainly external • Ratio of full-time/part-time: 50/50 • Updated training: Individual	• Full-time position: Fixed • Requirement: Doctoral degree and "dual experts" • Faculty sources: Mainly internal • Ratio of full-time/part-time: 10/90 • Updated training: Individual

or equipment from corporations, individuals, and alumni are common practice in the US. The donor can establish a special fund, such as a scholarship or grant. Also, the college has a designated office to campaign for this type of funding. Second, faculty can apply for research grants and request funds from government agencies and community organizations (e.g., a grant for veterans' training). Third, the institution can gain local community support and issue bonds to collect capital for new projects. The CCI could seek financial or resource support through industry cooperation. For example, a corporation may donate funds or equipment for a laboratory in the institution in exchange for contract training for company employees. The CCI also could start encouraging donations by developing alumni activities.

Teacher Preparation

Table 4 shows primary factors summarized from each case study regarding teacher preparation for the workforce training programs including recruitment, training, and the ratio of part-time to full-time instructors. Although the educational requirements differ, both institutions want to hire faculty with a degree and real world experience; the instructor should bring both knowledge and experience to the students. Both institutions face challenges in trying to hire faculty with extensive work experience. USCC cannot compete with industry salaries, and at the CCI, most faculty come from the university affiliate. With the knowledge base more theoretical than applied, especially at the CCI, both institutions encourage their faculty to pursue updated training through individual effort.

At the USCC, establishment of new full-time faculty positions is based on program growth, dynamically adjusted to student enrollment. Part-time faculty who are experts in the local community are the main hiring source for accommodating increased enrollments. Although a position may require a master's degree, a lower degree can be acceptable with compensatory experience in a high demand field. The institution maintains a 50:50 teaching load ratio of part-time to full-time instructors as a way of reducing operational costs; part-time faculty receive lower salaries.

Because the CCI is a subdivision of the University, it only has a small, fixed number of full-time faculty positions. The part-time instructors are responsible for 90% of the teaching activities. Most of these instructors are faculty of the University, and only a few are outside hires. University faculty members can make extra income from the additional part-time positions. In the future, the CCI hopes to have 1/3 full-time instructors, 1/3 part-time from within the University, and 1/3 part-time from outside the University. Meanwhile, the requirement for faculty to be "dual experts" in teaching and engineering is unfulfilled.

The research participants in both institutions indicated that a shortage of qualified teachers is the primary concern related to program quality. Three prominent strategies were identified in the cross-case analysis for enhancing faculty qualifications and supporting teaching activities. First, the CCI hires a small number of part-time faculty members from other institutions. Because no policy prohibits the employee from working for different employers, this is an effective way to recruit trained teachers

Table 5. Comparison of curriculum development factors

USCC	CCI
• Advisory committee suggestions • Market demands • Updating and revising • Pilot program • Faculty initiative • Online technical support • Textbook selected by faculty	• Instructional committee/teaching research unit • Market demands • Copy/use existing University courses • Special course requirements • Textbook selected by institute

and also to allow these teachers to make extra income. According to CCI study participants, this approach has been helpful. Second, at both institutions, hiring engineers and experts from local industries as part-time instructors fills the shortage of experienced teachers; however, at the CCI, only a few part-time teachers are hired from industries because those teachers often lack teaching experience. Third, at the USCC, there is an incentive policy for faculty development that rewards faculty for updating and upgrading knowledge and technical skills related to their teaching responsibilities. The policy includes benefits such as reimbursement for tuition, pay increases for additional qualifications, faculty sabbatical, and on-leave opportunities. This incentive policy could be transferable to the CCI.

Curriculum Development

As shown in Table 5, the major considerations of curriculum development in the workforce training programs of both institutions include course initiations, contents, and textbook selections. Although new course initiatives can come from a variety of sources, demands of the job market have been the most influential factor at both institutions.

At the USCC, the advisory committee not only suggests new programs, but also recommends new courses. A faculty member can propose a new course, but needs the advisory committee's support for the proposal. However, in the CCI, "new" course curriculum is usually copied and used from existing courses in the University. At the USCC, there are two procedures that help to expedite new course creation. One is the pilot project, which enables faculty to place a new course on the schedule to meet a current demand while the course simultaneously goes through the approval process. Another is the curriculum development process, which is a streamlined, online application supported by the USCC's Information Technology Department. One additional curriculum difference is that all students at the CCI must take the core curriculum required in every Chinese institution (e.g., Mao or Deng's political theory courses).

Curriculum development includes both programs and courses. Interview participants in both case institutions emphasized the importance of creating new courses and programs, and updating existing curricula. Continuous updating and program development are essential to the sustainability and quality improvement of the workforce training programs. The USCC showed strengths in four areas of effectiveness that could be adopted by CCI. First, every faculty member creates new courses and programs, and updates them as a routine activity. This activity is part of the performance evaluation and tenure process. Second, the configuration of the USCC advisory board provides a strong link to industries. In addition to generating ideas and suggestions for new college programs and courses, the advisory board is an efficient way to gather information concerning the needs of industries.

Third, updating the textbooks is another way to capture the trends of new technology and demands of the market. Although USCC faculty members could write textbooks, this is not the norm. Instead, selecting an up-to-date published

Table 6. Teaching methods

USCC	CCI
• Classroom and Lab • Online teaching • Hybrid courses • Flex/independent learning • Service learning	• Classroom and Lab • Internet /Satellite TV teaching • Self-taught examinations

Table 7. Student enrollment and services

USCC	CCI
• Open Access Admission • Recruitment efforts •Academic Support Center • Counseling and Advising Center • Career Service Center • Internship • Requirement of graduates: Critical thinking and hands-on skills	• Selective Admission • E-registration • Class Director/Political Advisor • Student Management Center • Career Service Center • Requirement of graduates: Hands-on skills

textbook is much quicker and an effective way for keeping up with changes in industries. This approach works well because US textbook publishers are competitive and update rapidly. Fourth, faculty members participate in activities such as local community events, industry expos, new technology seminars, and publisher conferences. In addition, faculty members listen to requests from students. These activities and students' ideas provide feedback that is used for improvement of the programs and courses.

Teaching Methods

The methods of teaching in workforce training programs at both institutions include traditional, online, hybrid, and other deliveries (Table 6). Study participants mentioned that workforce training programs have used a variety of teaching methods. In both institutions, two methods are most common*:* (a) a classroom-laboratory combined setting and (b) online or distance learning for students who cannot attend the classes. At the USCC, two additional innovative methods are used and welcomed by students. First, the hybrid delivery method benefits students who prefer self-study with minimal on-campus activities. Second, service learning integrates instruction and community service together thus benefiting the student, the institution, and the community. At the CCI, a special training program prepares nontraditional students for a series of higher education subject examinations in order to earn a certificate or a degree diploma. This degree by examination program is unique to China, but the approach may be applicable for GED sections in USCC.

Student Enrollment and Services

The key points of student enrollment and student services in the workforce training programs include the admission policy, recruitment, enrollment activities, requirements of graduates, and services related to advising, counseling, internships or work study, and career development (Table 7). The student age range was comparable and both institutions had traditional and non-traditional students within the workforce training programs.

The major differences between USCC and CCI were in four primary characteristics. First, the USCC's "Open Access" policy ensures opportunities for students in low socioeco-

nomic status families and even high school drop-outs through financial aid. Second, the USCC offers internships that help many students to apply their skills in a work setting and to establish connections with potential employers. Third, students receive academic advising, counseling, and career services including internships and career development training. Counselors and faculty advisors use career development theory to help students find a career path by establishing career goals that best match their personal needs and interests. Fourth, the students' critical thinking skills were emphasized in the programs.

By contrast, the CCI students must go through a selective admission process and use E-registration as a unique measure to ensure the authenticity of students and to control institutional enrollment quotas established by the Ministry of Education. The programs emphasized students' hands-on skills. The class directors, who are experienced faculty members, provided student assistance in academic areas. Political advisors live in the dormitories, become very close to the students, and can provide immediate assistance in non-academic areas whenever students are in urgent need of emotional, physical, or spiritual help. Through these staff positions the Party closely monitors and controls student organizations and activities. The institution provides financial support and guidance to student organizations that help students with employment services.

Challenges for USCC

USCC's workforce training programs face challenges in seven major areas: (a) funding to offset declining appropriations and stem rising tuition; (b) innovation to address changes in industry; (c) curriculum development to improve student performance, (d) faculty enhancement through hiring, retention, and training to meet new course and program demands; (e) marketing strategies for student recruitment; (f) articulation agreements to facilitate transfer between the College and four-year institutions; and (g) avenues to share best practices among community colleges.

The US economic crisis that began in 2008 has led to state budget cuts, which forced the USCC to increase tuition and fees, and implement a hiring freeze. As one faculty member stated, "Every time we increase tuition, we are cutting down on the number of people that can come here. That's the bad. The good is that if a person really wants that higher education, we are still a good deal." Although student financial aid helps enable access, technology changes so quickly that keeping up with new equipment and related lab supplies continues to increase the cost of instruction. Moreover, globalization has a direct impact on industry and therefore an indirect effect on USCC's workforce training programs; curriculum must be realigned with the local job market. Changing the curriculum affects the skill sets taught and the lab equipment used. An administrator at USCC stated,

"The workforce training programs face the big challenge that is keeping up with industry. The College had made this tremendous investment in all the hardware and shortly we had to virtually throw it away because of the fact that the industry was changing."

In the area of curriculum development, workforce training must emphasize training students on how to perform and have the right skill-set needed for the job, rather than just focusing on degree or certificate completion. As one administrator said:

"I think with this level [of student performance] we have to be very cautious to make sure that the students aren't just pushed through the program. They really have to be able to perform because their livelihood is going to demand it. If they get a job and they lose that job after six months because they can't do it. That's a real tragedy because in a technical field, you have to know what you're doing."

Having the right skills also requires updating the curriculum. Workforce training programs at the USCC have varied curricula, but some of the courses have not been changed for

several years. One obstacle to updating existing courses and preparing new curriculum has been the lack of support from technical services. The USCC has limited staff with the expertise needed for requisite steps such as initial software setup and equipment testing. Another related obstacle is the funding shortage, which has limited the use of qualified consultants for application setup and troubleshooting.

Healthcare and green energy are currently growing sectors and hiring qualified faculty is difficult because teaching salaries are not competitive with industry employment. An administrator specifically mentioned, "It is difficult to find qualified faculty part-time and full-time. We want to make sure that people not only have the expertise, but also would be fit to teach in the classroom." Another administrator pointed out that "society needs more nursing, more healthcare programs, but we don't have enough master's degree nursing instructors." Challenges for the USCC workforce training programs in these two areas can be summarized in three questions: how to train the current faculty, how to find qualified faculty, and how to create greener programs.

Development and implementation of marketing strategies for the workforce training programs also are challenges. Since the college converted from the quarter to the semester system a few years ago, the demand to offer workforce training programs in many different formats has increased; the quarter schedule was more compatible with the needs of students in the programs. Managing and offering the programs on a variety of schedules is challenging when faced with limited resources. Another aspect of recruitment and retention is competition. Five four-year institutions offering workforce training programs are within the USCC's service area. Rather than competing with those four-year institutions, implementation of articulation agreements would be a win-win scenario for recruiting students into programs at the USCC and neighboring institutions. As an administrator said, "We can't offer them a four year degree, [we are a two-year college]. I would see [that we] can make better 2+2s, 3+1s, make agreements with these institutions that would allow our students to seamlessly transition to their area."

Another area where cooperation could help to leverage resources is in establishing better communication among community colleges; however, this is a challenge because there is no existing structure or culture for such sharing. Community colleges do not routinely communicate with each other, but when budgets are tight across the state, collaboration may help in solving some issues.

Challenges for CCI

At least five major challenges must be addressed by the CCI, the Chinese government, and workforce training programs: (a) improving the quality of workforce training and changing the public's perception of this training; (b) establishing an accreditation system and treating tertiary training fairly; (c) reforming the current tertiary training programs and emphasizing practical skill sets; (d) investing more funding for equipment and laboratories, while continuing to pursue practice opportunities in industry; and (e) creating new courses and updating old courses to better articulate with the demands of the changing economy and labor market.

One difficult challenge that workforce training programs face is lack of respect by the public. Although progress has been made over the past few years, workforce training still is considered to be at the lowest level in higher education. This perception makes students and their parents less interested in training institutions than traditional academic universities. Also, workforce training teachers are not as proud of their profession when compared to those who work in traditional academia. As a CCI administrator explained:

"The tertiary workforce training has long been considered as a junior level or a tertiary vocational education [Some of the workforce training institutes have never been in the higher education level]. Besides, the national entrance examination and college admission processes

have divided students into two levels, as a normal university and a tertiary vocational institute."

To change people's perception of workforce training, producing high quality workforce training graduates is essential. People think that traditional higher education trains excellent learners while workforce training does not. This line of thought has constrained the development of workforce training by focusing the curriculum more on knowledge and theory and less on experience and practice, which also negatively affects training a skillful workforce.

Another challenge is confusion regarding how tertiary workforce training should be defined in the higher educational system. Historically, the majority of tertiary training institutes have developed out of lower status schools and no clear definition of tertiary workforce training has emerged. An appropriate accreditation system to evaluate training institutions has not been established. The fact that most government regulations refer to traditional higher education contributes to confusion for the people who work in tertiary workforce training and reinforces the poor image that challenges program development. The evaluation of workforce training is not strict or comprehensive under the current system. Also, adult education and workforce training education are treated equally as some areas overlap thus creating more confusion. Currently, most of the tertiary workforce training programs are similar to traditional higher education programs, and thus are not actually tertiary career and technical education. At the CCI, workforce training and adult education simply copy the programs directly from the University; the curricula have no specific components of workforce training or adult education. A CCI administrator said,

"I think that workforce training and traditional education should be different including the evaluation standards. We run the workforce training programs in a traditional higher education environment. How do we evaluate workforce training? If using traditional education standards to treat workforce training, we have a lot of confusions and difficulties. For instance, the standards for recruiting students are different between traditional higher education and the tertiary workforce training."

In order to emphasize hands-on experience and practical skills in workforce training programs, adequate laboratories and equipment are essential to giving students an opportunity to practice in real world situations. Although the government encourages industry to provide places for practice, in reality almost nothing has been accomplished in this area. As stated by a CCI administrator,

"Industry is very passive on the [providing practice opportunity for students] issue. Our workforce training programs, especially the equipment operational skills training should go through the industry, but unfortunately, the industry has no motivation to do so. Even when students get there [industry site], they basically just watch as visitors. It is hard for student to get hands-on experience."

Changing the industrial sector's attitude toward allowing students to practice on site will take a long time at best. An institute needs to pay a fee just to gain site access, and for programs such as Automotive Service Technology and Manufacturing Technology, access is essential for practice since specialized labs may be financially infeasible for an institute. Consequently, the CCI knows that it must continue seeking industry cooperation for student practice opportunities.

Another problem is that faculty members have no incentive or requirement to create new courses; curriculum go many years without changes or updates. One administrator discussed reasons for not updating curriculum.

"At the current situation, some teachers do not support [creating new courses]. Why not? They are used to an old course, easy to prepare it. This is related with the faculty evaluation system, in

which seniority is the key component. If I have taught this course with undergraduates, now teaching workforce training students, using the same course material without any change, is very easy. If to create a new course I have to spend much more time, I won't. This is a systemic problem."

The consequence is that content of courses may have become distant from reality and this negatively impacts the quality of tertiary workforce training.

CONCLUSIONS AND RECOMMENDATIONS

Although both institutions in this study face many challenges, they also possess many positive characteristics that could be shared by not only the case study institutions, but also other similar institutions in China and the US in order to improve the quality of workforce training programs. However, there were some characteristics that might not be transferable, such as the open access policy or the institutional board of trustees.

Recommendations for workforce training programs are divided into three sections: for both institutions, for the USCC, and for the CCI. Both institutions have experienced the impacts of globalization and funding issues, and both must address the same challenges in meeting the increasing demand for a globally competent work force. Four recommendations have been drawn from the comparative analysis:

1. Create timely new programs and courses based on periodic program and course evaluations, and annual job market and industry needs assessments.
2. Seek alternatives for reducing operational costs, such as terminating out-of-date programs and eliminating non-essential administrative positions, while simultaneously looking for possible alternative funding sources, such as establishing industry partnerships and participating in entrepreneurial activities.
3. Recruit through corporate partnerships qualified full-time or part-time instructors who have both advanced degrees and prior work experience from industries.
4. Add a critical thinking component in all curricula to ensure graduates possess not only technical skills, but also the capability to solve real world problems.

Five recommendations are provided for the USCC. The first is borrowed from the CCI, and the other four recommendations are based on typical challenges the USCC must address.

1. Encourage faculty to become more involved with students both in academics and extracurricular activities. Provide faculty training to help them identify and assist problematic and potentially troubled students.
2. Provide a diversity of formats (e.g., classroom/laboratory and online) and schedules (e.g., four weeks, eight weeks, and 12 weeks) for all major workforce training programs and courses.
3. Look for alternative ways to reduce operational costs, such as hiring more student workers for a wide range of on-campus jobs and creating organizational efficiencies that enable merging of some institutional administrator positions.
4. Create and implement an enrollment management plan that includes student recruitment strategies to be carried out by admissions staff and faculty members (e.g., advertising, workforce training demonstrations, and promotional activities).
5. Develop and implement articulation agreements with four-year institutions to ensure students have a good path for pursuing advanced degrees and establish a communication network for community college workforce training faculty and administrators throughout the state that enables them to easily share information and exchange ideas.

For the CCI, the first four recommendations are policies and methods borrowed from the USCC, and the last two are based on typical challenges the CCI must address.

1. Improve the decision-making process by factoring in a non-voting student representative who can provide a student view for policies and regulations.
2. Create incentive policies that link faculty evaluation and promotion with performance in teaching, curriculum development, and student advising. Support sabbatical and on-leave programs for faculty training.
3. Improve curriculum development processes in three areas: (a) create an advisory board for new programs and courses that includes industry representatives; (b) update existing programs periodically to stay current with advances in technology; and (c) update textbook selections to ensure materials taught are current.
4. Strengthen student employment services by creating service learning and internship opportunities, and applying career development theory in career development services.
5. Revise the workforce training program mission statement and vision to sharpen their focus, as this will ensure greater clarity in the goals of workforce training programs.
6. Lead the way in collaborating with the Ministry of Education and other workforce training institutions to establish an independent tertiary workforce training system and a workforce accreditation system that includes program assessment, accountability, and incentive policies for faculty improvement.

For future comparative research, an independent institution in China that focuses solely on CTE programs should be studied to enable a more concentrated examination of workforce training issues and gain further understanding of the workforce training programs. Also, examination of a specific program or a cohort study group (e.g., an Office Automation program) could enable an in-depth understanding of how a particular workforce training program is organized and operated.

REFERENCES

Andringa, R. C. (2001). *The internationalization of higher education: Can the American experience advance peace and learning in the world?* Retrieved from https://www.cccu.org/filefolder/Internationalization_of_Higher_Education_Can_the_American_Experience_Advance_Peace_and_Learning_in_the_World.pdf

Appadurai, A. (1996). *Modernity at large: Cultural dimensions of globalization*. Minneapolis, MN: University of Minnesota Press.

Bloom, D. E. (2002, September 19). *Mastering globalization: From ideas to action on higher education reform.* Paper presented at the University of Laval Conference on Globalisation: What Issues Are at Stake for Universities, Laval, QC, Canada.

Carnoy, M. (2005, January 2). *Globalization, educational trends and the open society.* Paper presented at the Open Society Institute Education Conference, Budapest, Hungary.

Central Institute of Workforce training (CICTE). (2009). 新世纪初中国职业教育发展—2004-2007年职业教育发展报告 [New century Chinese vocational education development: 2004-2007 report]. Beijing, China: Higher Education.

Cohen, A. M., & Brawer, F. B. (2003). *The American community college* (4th ed.). San Francisco, CA: Jossey-Bass.

Government Accountability Office (GAO). (2008). *Workforce development: Community colleges and one-stop centers collaborate to meet 21st century workforce needs* (Report No. GAO-08-547). Washington, DC: GAO.

Hinchcliff, J. (2000). *The globalization of education.* Retrieved October 18, 2008, from ERIC database (ED447296).

Hvistendahl, M. (2008) China moves up to fifth as importer of students. *The Chronicle of Higher Education*. Retrieved from http://chronicle.com/weekly/v04a00103.htm

Jie, Y. (2007). Internationalization in Chinese education: Policy analysis through a theoretical framework review. *Pacific Asian Education*, *19*(1), 58–71.

Johnstone, D. B., & Marcucci, P. N. (2010). *Financing higher education worldwide: Who pays? Who should pay?* Baltimore, MD: Johns Hopkins University Press.

Keating, J., Medrich, E., Volkoff, V., & Perry, J. (2002). *Comparative study of vocational education and training systems: National vocational education and training systems across three regions under pressure of change*. Leabrook, Australia: National Centre for Vocational Education Research. Retrieved from http://www.ncver.edu.au/research/proj/nr9009.pdf

Levin, J. S. (2001). *Globalizing the community college: Strategies for change in the twenty first century*. New York, NY: Palgrave.

Li, L. (2003). *LILANQING JIAOYU FANGTANLU* [Li Lanqing's memories on education]. Beijing, China: People's Education.

Merriam, S. B. (2001). *Qualitative research and case study applications in education*. San Francisco, CA: Jossey-Bass.

Obama, B. (2011). *President Obama and Skills for America's future partners announce initiatives critical to improving manufacturing workforce*. Washington, DC: The White House Office of the Press Secretary. Retrieved from http://www.whitehouse.gov/the-press-office/2011/06/08/president-obama-and-skills-americas-future-partners-announce-initiatives

Phillips, D., & Schweisfurth, M. (2007). *Comparative and international education: An introduction to theory, method, and practice*. New York, NY: Continuum International.

Phillips, D., & Schweisfurth, M. (2008). *Comparative and international education*. New York, NY: Continuum International.

Robertson, R. (1991). The globalization paradigm: Thinking globally. In *Religion and social order* (pp. 207–224). Greenwich, CT: JAI.

Roekel, D. V. (2010). *Global competence is a 21st century imperative: An NEA policy brief*. Washington, DC: NEA Education Policy and Practice Department.

Salmi, J. (2000). *Tertiary education in the twenty-first century: challenges and opportunities (LCSHD Series No. 62)*. Washington, DC: World Bank.

Shi, Z. (2001). 以□新思路架构高□高□发展□略 [In a creative mind to establish the strategy of developing the tertiary vocational education]. *Chinese Higher Education*, 12.

Smith, D. J. (2007). How community colleges can work for world peace. *The Chronicle of Higher Education*, *54*(9), B30.

Yang, W., & Zhang, M. (2003). □入21世□的高等□业教育 [Entering the twenty first century of the tertiary vocational education]. *Chinese Vocational and Technical Education*, (26).

Yu, Z. W. (2004). □向"世界工厂"□程中的中国高等□业技□教育 [Chinese tertiary vocational education in the process of entering "world factory"]. *Vocational and Technical Education, 2004*(8).

Zhang, W., Hu, X., & Pope, M. (2002). The evolution of career guidance and counseling in the People's Republic of China. *The Career Development Quarterly*, *50*, 226–236.

Harry Hou (EdD) currently is a professor in the computer information systems department at College of DuPage. Previously he was an adjunct professor in Purdue University Calumet and a lead instructor in the Computer Learning Center in Lombard, IL. He has taught many courses in the career and technical education field for more than 17 years. Prior to living in the United States, he received his undergraduate degree from a university in China and worked in the same university as a faculty member, student advisor, and student activity director for seven years. In 1988, he moved to the United States to pursue his advanced studies, and has received two Master degrees from University of Pittsburgh and California University of Pennsylvania. He received his doctoral degree in community college leadership from National-Louis University in Chicago.

Diane E. Oliver (PhD) is an assistant professor in the department of educational research and administration, Kremen School of Education and Human Development at California State University, Fresno. She teaches doctoral and masters courses in higher education administration and leadership. Her research and scholarship interests are in the area of comparative and international higher education. She has conducted research on the development of community colleges in Vietnam, and authored, and coauthored with Vietnamese colleagues, articles on higher education in Vietnam.