

A Case Study Report of a Comprehensive Benchmarking Review of the Status of Vocational Education Students in California: Building a New Relationship between Community Colleges and California State University System

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ABSTRACT

This pilot study served as a foundation for a statewide comprehensive review of vocational career preparation programs at the community colleges in the State of California. Los Angeles County was determined to be the primary focus of investigation. The main focus was to collect, report, and disseminate current and valid information on existing conditions and the state of affairs of vocational education students at the community colleges in California. Most importantly, study findings provided a better understanding of students in postsecondary vocational technical programs in California. The majority of the students, about 28.3%, attended community college to prepare for their first job or career, compared to 20.4% who are exploring new career areas or a different focus/track. About 12.8% were in school to update or improve their skills for their current job while a total of 23% plan to transfer to a 4-year college. The 23% who planed to transfer represent a significant number when referring to continuing education through a professional studies program utilizing AB1725 (an application for evaluation of work experience submitted to Board of Examiners for Vocational Teachers as part of requirements for the bachelor of vocational arts degree).

Introduction

The purpose of this pilot study was to establish and provide legislators and educational leaders with adequate and appropriate information to make intelligent decisions on the growth and development of Vocational/occupational education in California community colleges. This study also established the importance of continued support for AB1725. AB1725 validates the articulated programs for vocational training by K-12 districts, community colleges, and the 4-year institutions in California (O'Lawrence, 2005). Under the articulation agreement regarding vocational programs, the Board of Governors and the State Board of Education will assist school and community college districts in developing articulated programs that coordinate vocational education instruction of final two years in high school and two years of community colleges (2 + 2 programs); and the Board of Governors to also work with the Trustees of the California State University in expanding the 2 + 2 programs to include the final two years of the baccalaureate degree (2 + 2 + 2 programs).

Just as it is important for the community colleges to continue to offer vocational-oriented associate degrees that prepare students for careers, it is as well, important to make sure that graduates' vocational education programs are not discriminated against in further education within the CSU system, as established by AB1725. They are the

representative population that will be seeking teaching positions at community colleges in the future; they are the real people who can talk the talk and walk the walk in the classroom because they have been there before as students, and their work experience has given them what it takes to be successful in the field.

The unique nature of the community college, a result of the diverse makeup of the student body, its continued growth in a constantly changing educational and social environment, and its leadership role in providing training for advanced technological skills to the state workforce, has prompted this research to gather more data on students enrolled in postsecondary technical vocational education, and to determine the success of California's community colleges.

According to Kasper (2003), today's comprehensive community colleges are both principal providers of academic instruction and major providers of vocational preparation, workforce development through adult training programs, career training, and academically oriented education, which led a surge in enrollment that outpaced the enrollment growth of educational institutions offering bachelor's degrees. The promotion for continuation of such programs for students at the bachelor's and master's levels will also trigger the same surge in enrollment in the CSU system. At some point in the lives of this population, there will be a need for them to obtain their bachelor's, master's, or even doctoral degree and we must not close that door of opportunity on them. It has now become evident to some of them who have been teaching for a long time that to keep their high school or community college jobs, they must obtain a bachelor's degree.

As a result, the number of applications for admission to professional studies department at California State University system has increased dramatically since Fall 2004. Students were beginning to appreciate the value of Senate Bill 752 in California. Senate Bill 752 was introduced into the California Legislature by Senator John Harold Swan and enacted into law in 1943 to abet in the professional development of trade and industrial teachers. The legislation established a procedure by which such teachers may be allowed college credit for work experience, thus enabling them to enter a state college and pursue the required studies leading to the bachelor's of vocational arts degree.

The Perkins Act of 1990 was to make the United States more competitive in the global economy by developing more fully academic and occupational skills of all students and to improve educational programs leading to the academic and occupational skill competencies needed to work in a technologically advanced society (Public Law 101-392, 1990). This law is a standards movement in vocational technical education, as the act requires all states receiving federal funds to develop and implement an accountability system of core performance standards and measures. This includes:

- (1) Measurement of learning and competency gains, including student progress in the achievement of basic and more advanced academic skills; and (2) One or more measures of performance, with each state developing a system of different standards and measurement for both secondary and postsecondary programs. (sec. 115)

Business' demand in the 1980s for entry-level workers who could think critically and had analytical skills brought new thinking about education from the federal level, which eventually led in 1988 to House of Representatives Bill HR7 and subsequently the Carl D. Perkins Vocational and Applied Technology Education Act of 1990. This legislation encouraged articulation agreements between secondary schools and community college curricula, later called "Tech-Prep" (O'Lawrence, 2000, p. 16).

A study of this magnitude is needed to establish an accurate database of the status of students in vocational education programs in California who may be considering furthering their education through CSU systems. Based on national data from previous studies, many highly skilled career and technical positions do not require a 4-year college degree, but they do require more than a high school education. In fact, 65% of jobs in the new millennium only require some training beyond high school but not a 4-year college degree (Farmer & O'Lawrence, 2002). However, despite the statistics, the majority of these people are coming to 4-year institutions to complete a bachelor's degree, or even a master's degree. In addition, and as a result of changes in legislation and teacher preparation requirements, many high school and community college occupational education instructors now have to further their education (obtain bachelor's and/or master's degrees) to remain employed in their current jobs.

How important are vocational education bills to California? So important indeed! California's community colleges received more than \$49 million over the passed few years alone through the Perkins program to improve vocational programs and career pathways, help support students attending career technical programs, and help prospective students achieve academic, vocational, and technical knowledge and skills necessary to attain employment, further their education, and to be competitive in the workforce.

This study was intended to establish and provides legislators and educational leaders with adequate and appropriate information to make intelligent decisions on the growth and development of occupational education in California. Occupational/Vocational educators, policymakers, and directors of strategic planning will also find these report important, especially in the area of program outcomes and follow-up measures, types of training to provide, and employment trends on a region-by-region basis.

Significance of the Study

The demand for technical training workers has rapidly increased since the new millennium and is projected to rise much faster than employment as a whole. Educators are beginning to realize that information technology is here to stay and the expansion of jobs in the computer technology and system analyst areas is growing and more training is needed in those areas. Industry leaders contend that we are facing shortages of thousands of IT works, and to respond quickly to this need, community colleges serve as a supplier of low- and semiskilled workers for jobs that do not require a BA or BS degree. There is no doubt that community colleges could provide or produce the in-depth training

necessary for high-tech jobs and skills necessary for our youth to be competitive in today's global economy.

Historical Background of California Community Colleges

The California Community College system comprises 109 colleges, serves about 2.5 million Californians, and is the largest system of higher education in the world (California Community College Chancellors Office [CCCCO], 2004). Developing the California economy depends on a skilled workforce and academic preparation. Academic preparation will provide education and economic opportunity that will keep our youth and adults competitive in today's global market. The growth of market economics and the wealth of a nation are largely dependent on buying goods and services, but it is commerce that leads to jobs, independent wealth, and high standard of living, especially when capitalizing on natural resources, technology, and human capital (Gray & Herr, 1998). Capital and technology are valuable in today's global economy, and to gain a major advantage in a global market, California's human capital must be completely skilled and effective.

The changing role of community colleges, especially toward vocational education and job training, has made California's community colleges entities to be reckoned with as workforce preparation centers that provide technical skills for skilled positions, timely associate degrees (2 years of full-time study to complete), and vocation-oriented associate degrees that prepare our youths for competitive careers. A competitive global workforce must first start at the local level for which community colleges serve the needs of local businesses, rural areas where career training is difficult to obtain, and communities at large.

However, we still have to maintain the heavy scrutiny the California community college system has undergone, to determine the academic outcomes of those in different areas of vocational programs, and to ascertain whether it prepared students to be competitive in the workforce. There are 109 community colleges in California serving more than 1.5 million students. The fiscal year 2005 budget proposed by President George W. Bush on community-based job training grants strengthen the role of community colleges in promoting the U.S. workforce's full potential. The competitive grant program builds on the High Growth Job Training model, a national model for a demand-driven workforce development system, employers, and community colleges to build the capacity of community colleges to train workers for the skills required to succeed in high growth, high demand industries (Bush & Bush, 2004).

Because of large numbers of immigrants coming to California for a better life, education and training have become evidence as a means to survive. Community colleges around the country have become the only institutions with an open-door policy that takes students the way they are and molds, trains, teaches, and guides them to be competitive, self-dependent, productive, and useful to society. Vocational education in California is the vehicle to fill the demand, to supply inroads to economic success, and to provide quality of life and global competitiveness.

Problem

Community colleges possess a system that appears to be the best form for achieving multigoal purposes (curriculum) in order to meet new demands in the community. Students, as the fastest growing segment in U.S. education, raise an important question: will they get jobs in the areas in which they get trained? Rapid changes resulting from scientific and technological revolutions, demographic changes, industrial reorganization, and the interplay of social forces forced community colleges to rethink new strategies for postsecondary technical education; and students must gain the necessary skills not only to find or keep their jobs, but also to compete in the global economy (O'Lawrence, 2000).

There is a need for a comprehensive plan in California for how vocational and technical education at the community colleges will contribute to the economic future, reflect industry needs, economic structure, availability of training resources, and the ability to train workers for the skills required to succeed in high-growth, high-demand global industries. Community college students will need exposure to a knowledge economy. They will need to be flexible and understand that the skills they were trained for may be outdated the following year and they must understand the importance of vocational education and training as being indispensable to economic success and quality of life.

For the community college system, there is a need for rigorous curriculum that is updated regularly to meet the demands in the workforce. According to the *Executive Summary of the 2000–2004 California State Plan for Vocational and Technical Education*, “delivery of vocational and technical educational services must be driven by the needs of both our populace and our rapidly-changing economy and must take into account the major demographic and educational forces that operate within that economic context” (Hayward, 2000, p. iii).

Significance

Vocational education can play a key role in improving economic and industrial problems in the State of California by better preparing students for skilled labor and by allowing them to become economic contributors in the state; Vocational education must be viewed as a principal centerpiece in attracting industry and preparing the workforce for existing and new industries. The Hudson Institute, in its *Workforce 2000* report, examined the skill levels in occupations projected to grow and concluded that the fastest-growing jobs will require more reasoning skill, language, and math (as cited in O'Lawrence, 2000).

In the *Executive Summary of 2000–2004 California State Plans for Vocational and Technical Education* (Hayward, 2000), the importance of all students in California gaining advanced literacy and mathematics skills as well as being experienced, technically competent, and having the ability to understand in interdependency among all aspects of an industry. The vocational technical education must be able to (a) integrate theory and application; (b) combine technical, computational, reasoning, and

communication skills; (c) incorporate school- and work-based learning experiences; (d) better connect secondary and postsecondary educational opportunities; and (e) strengthen connections among educational, business, labor, and government.

Because of the current world trend of globalization such as world market economies, free trade, and the out-sourcing of American jobs that were once considered safe from foreign encroachment, there is a need for vocational educational students to have the academic foundations necessary for world competency in their jobs, to deal with issues of daily life, and to be skilled enough to compete globally.

The demand for white-collar work will increase, and executive, administrative, and professional specialty occupations will constitute 30% of all employment among those with at least 4 years of college. The projections of the Bureau of Labor Statistics reported in the *Monthly Labor Review* indicated that occupations requiring an associate's degree are expected to increase by 1.5 million jobs by year 2008 (Bureau of Labor Statistics, 2005)

An analysis of postsecondary technical education programs in California community colleges and their impact on the American job market is important to improving the number of qualified entry-level workers joining the labor market in this state. We need to make sure that California is flexible and diversified, that business are equipped to compete in the global market place, and that our workers have the skills needed to occupy and succeed in the jobs of the future (O'Lawrence, 2000).

Therefore, there is a need to revamp our vocational and technical education programs with sound, up-to-date access to new technology capable of transforming our students to a higher standard of global competitiveness as well as engaging them in academically rigorous and culturally inclusive curricula, relating theoretical ideas and concepts to the practical world of work, utilizing job shadowing, internships, mentoring, and early career exposure that is useful to all student regardless of their gender, learning style, language proficiency, socioeconomic background, gender, and disability (Hayward, 2000).

For our students to be competitive and able to keep their jobs in the 21st Century, community colleges will need to continue with short-term on-the-job training (OJT), which will develop workers' skills after a short demonstration or up to 1 month of on-the-job experience or instruction; moderate-term on-the-job training, which will develop skills after a year of combined on-the-job experience and informal training; and long-term on-the-job training or combined work experience and classroom instruction, which will require passing an examination after completing vocational training.

A gradual shift toward vocational education, job training, programs catering to communities, and students desiring career advancement and advanced degree have made it necessary to continue building relationships between the California State University System and the community colleges by promoting a continuation of college education and higher degrees for vocational education students.

Conceptual Framework

The conceptual framework for this study was based on a comprehensive benchmarking review of the status of postsecondary technical and occupational education in Pennsylvania conducted by O'Lawrence (2000). The benchmarking concept, as discussed by Ellibee and Mason (1997), was used to guide the study, thus providing a baseline from which the effectiveness of new programs could be evaluated. This concept generates a shared in-depth understanding of postsecondary technical students and practices by identifying specific objectives, strengths, and weaknesses to focus discussion on specific areas needing improvement.

Methodology

This was a pilot study that used a three-phase study to plan, implement, and examine a comprehensive benchmarking review of the status of postsecondary technical and occupational education in California by using convenient population in Southern California. There were three objectives in the planning and organization phase of the study: (a) to develop a plan of action to collect and disseminate useful data on the existing conditions of postsecondary technical and occupational education in California; (b) to gather written material from certain institutions relevant to the study and then to conduct a series of on-site observations at those institutions, and (c) to develop a report and disseminate it to a select group of stakeholders.

The research questions here were to determine (a) the differences among the personal, situational, and outcome characteristics of students in California community colleges; and (b) the nature of and the relationship among them. Particularly, little has been done to this point to involve community colleges in postsecondary technical education, and participation from these types of institution will change this lack of involvement and undoubtedly make a valuable contribution to workforce education by providing quantitative data on postsecondary technical students in community colleges in California.

Target Population, Study Sample, Instruments, and Procedure

The populations for this study were students enrolled in vocational education programs in community colleges in Southern California. Survey research procedures were used to collect data for this study. A 19-item survey questions was mailed to all six participating community colleges, which were selected based on geographical location. A total of 100 questionnaires were sent to each randomly selected community college in Southern California ($n = 600$) on April 17, 2005, to be distributed to each school's vocational technical degree students. These students were asked to complete the questionnaire by May 6, 2005. The instrument used was validated by the office of Institutional Research.

On May 6, 2005, those who had not returned their surveys were called to remind them that as of that date their response had not been received. They were given until May 22, 2005, to respond. In total, 600 questionnaires were sent; a total of 480 were returned for a response rate of 80%. Out of that 480 (80%), 80 (13%) were unprocessable because those participants did not answer nearly 90% of the questions in the survey. Also 44

(11%) out of the total sample respondents were classified missing, leaving 386 (89%) of the sample for analysis. Out of the six schools that received the survey, only one did not return any of the survey sent to them.

The gender breakdown was as follows: 201 (51.9%) women and 185 (47.8%) male. One individual (.3%) out of the respondents did not identify gender status; while about 13 (3.3%) were identified as missing. The total percentage of women reflects that more women are entering nontraditional career occupations. The survey instrument used in the study contained 19 items divided into five domains. The five domains comprising the questionnaire were (a) demographic factors, (b) personal circumstances, (c) personal goals/aspirations, (d) institutional participants, and (e) perception of/satisfaction with current institution.

Data Collection

A survey research design was used in this study, which is a method widely used to investigate educational issues. The data collected were statistically analyzed by computer, through consultation with an expert from the institutional research department at CSULB. The statistical analysis for this study was done through the Statistical Program for the Social Science, Version 13.0 for Windows (SPSS).

The researcher used a descriptive, two-way ANOVA and loglinear model to analyze study data. With the log-linear approach, the researcher's model cell counts in a contingency table in terms of associations among the variables. A two-way ANOVA model was used for continuous responses the values of which may be affected by two factors; the loglinear model is a technique for categorical data because it describes association patterns among categorical variables and best describes the relationship among other factors (Agresti, 1990).

The data for this study were drawn from the California Technical Students Profile Survey (described earlier). This study focused on two research questions: (a) What are the differences and relationships among postsecondary technical students in community colleges on selected personal, situational, and outcome characteristics? (2) What are the primary educational goals upon completion of their program? The researcher utilized all of the returned survey questionnaires (n = 400).

Findings/Analysis

The findings from this research study are reported as they reflect the two research issues. The demographic information revealed differences among students' ethnicity. Indeed, racial and ethnic minorities made up an increasing number of students enrolled at community colleges. There are twice as many Latino students compared to African American and American Indian/Alaskan Native, while there is no major significant difference between Asian/Pacific Islander and Caucasian (see Table 1). It should be noted that the results are limited only to the data reported by survey respondents, and much of the data from the respondents was converted to tables.

Table 1

Gender and Ethnic Background by Respondent in the California Vocational Education Student Profile Survey (CVESPS) Study

<i>Ethnicity</i>	<i>Gender (n)</i>	<i>Total (%)</i>	<i>Gender (n)</i>	<i>Total (%)</i>
	<i>Male</i>		<i>Female</i>	
<i>American Indian/Alaskan Native</i>	5	1.4	1	0.3
<i>Asian/Pacific Islander</i>	39	11	41	11.5
<i>African-American</i>	16	4.5	21	5.9
<i>Latino</i>	57	16	76	21.3
<i>Caucasian</i>	47	13.2	42	11.8
<i>Foreign</i>	5	1.4	6	1.7
<i>Total</i>	169	47.5	187	52.5

Note. $N = 356$

As shown in Table 1, the sample of males was 169 (47.5%), compared to 187 (52.5%) females in community colleges. Even though there are no major significant differences between gender, the number of women slightly reflects the national report by the American Association of Community Colleges database that, overall, more females (58%) than males (42%) enrolled in the 1,132 community colleges in the United States (Farmer & O'Lawrence, 2002).

The students' ages in the study describe the population in the vocational program. About 121 (31.7%) are considered traditional students who just recently finished higher school, 84 (22%) are between 23 and 28 years old, while about 93 (23.3%) are more than 40 years old (see Table 2). There is no significant relationship between gender and age; the average mean age for male students was 28.98 compared to females which was 30.69. This means that females in the population are older than the men. The median age for males in the population is 25.0 compared to 26.0 for women; overall, the mean age for students at these community colleges is 29.85. The gender of the respondents confirms the educational trend reported in *Occupational Outlook Quarterly*, Winter 2002–2003.

According to Kasper (2003), enrollment of women overtook men in the 1980s, with women accounting for 55% of community college students. During the 1990s, enrollment held steady at about 57% women. The national center for educational statistics also reported that the participation rate of young women outnumbers that of young men, and that by 2003, 51% of young women had entered and/or completed postsecondary education compared to 41% percent of young men; Whites continued to have higher participation rates than both Blacks and Hispanics (National Center for Education Statistics, 2005).

Regarding students' primary educational goal, Table 3 clearly revealed that the majority of the students, about 28.3%, attend school to prepare for their first job or career, compared to 20.4% who are exploring new career areas or a different focus/track. About 12.8% are in school to update or improve their skills for their current job while a total of 23% plan to transfer to a 4-year college. The 23% who plan to transfer represent a significant number when talking about continuing education through a professional

studies program utilizing AB1725 (an application for evaluation of work experience submitted to Board of Examiners for Vocational Teachers as part of requirements for the bachelor of vocational arts degree) (see Table 2 for complete result).

Table 2

Respondents' Primary Education Goal While Attending This College in the California Vocational Education Student Profile Survey (CVSPS) Study.

Primary Goal	n	%
To prepare for a first job / career	108	28.3
To update / improve skills for current job	49	12.8
For self-enrichment / personal interest	32	8.4
To improve my basic skills	6	1.6
To explore a new academic / career area	78	20.4
To prepare for transfer to 4-year college	22	23
To cope with a major change in life	21	5.5
Did not respond to questions	18	4.6
Total	400	100

On students' plans after completing their course of study, it is noteworthy that most students enrolled in community colleges wanted to work somewhere in California or in their home area. About 41.7% indicated that they will work somewhere in California compared to 26.9% who preferred to work in their home area. Also, 22.2% indicated that they would like to continue their education in 4-year institution (see Table 3).

Table 3

Respondents Plans After Completing Their Course of Study in the California Vocational Education Student Profile survey (CVESPS) Study

Description	n	%
Work in my home area	100	26.9
Work in another State	14	3.7
Retirement	7	1.8
Work somewhere in California	158	41.7
Continue education	84	22.2
others	14	3.7
Did not respond	21	5.3
Total	400	100

Conclusions

The findings of the study served as a major step toward providing information regarding California's postsecondary technical education students. In part, these could serve as data for further research. This study led to many insightful and useful findings, including students' responses regarding their major objectives after graduating. They planned to prepare for their first job, work in their home area/or in California, explore a

new career, improve skills for their current job, get their associate's degree, and then transfer to a 4-year college.

This finding provides additional information to legislators and educational leaders in the State so that they may make intelligent decisions on the management of postsecondary technical education in California. Further development of vocational education programs in community colleges to meet the expanding needs may be hampered by external agencies both within and outside the government. These agencies may not fully understand the purpose of those programs.

The state's postsecondary technical education institutions and programs must aim to ensure that students achieve clearly defined learning outcomes, including the skills, values, and perspectives as well as knowledge needed in the 21st century workplace. Community colleges must also continue to ensure their reputation for high standards and academic quality as the region's colleges of choice for the first 2 years of college and for career education.

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