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Differences in Characteristics of Postsecondary Technical Studies in Pennsylvania Community Colleges and Two-Year Proprietary Institutions

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Abstract

The purpose of this study was to determine the differences among the personal, situational, and outcome characteristics of students in15 Pennsylvania community colleges and 16 two-year proprietary institutions, and the nature of differences in gender at both types of institutions. The study, under the auspices of the Pennsylvania Department of Education-Bureau of Vocational Technical education, was divided into three phases: Planning and Organization, Implementation, and Follow-up. This article describes results of the second phase, which involved surveying a large sample of 3,100 students currently enrolled in postsecondary programs in Pennsylvania. Although this study is oriented to community colleges and two-year proprietary institutions in Pennsylvania, other states may find parts of the research useful if they are studying the nature and performance of postsecondary technical students. The results may provokea debate for

more diversity in student enrollment in community colleges technical fields of study.

American business and industry need a highly skilled workforce to compete in a global economy. Community colleges and other two-year postsecondary institutions are in the best position to fulfill that need (McCabe, 1997). A policy paper issued by the American Association for Community Colleges (AACC), Workforce Training Imperative: Meeting the Training Needs of the Nation, offered a well-formed argument for assigning the community college a central role in any effort to expand workforce retraining (Pedersen, 1993). Moreover, former President Bill Clinton articulated the importance of community colleges for all Americans in his speech at Gulf Coast Community College in Panama City, Florida. Mr. Clinton stated: "I believe America ought to work the way the community colleges in America work. I believe they are the ultimate democratic institution, small "d"; open to everybody, where everybody has a chance; results-oriented; flexible, not bureaucratic; working in partnership with the private sector; guaranteeing opportunity for everybody who is responsible enough to seek it" (Clinton, 1996).

The President's endorsement increases the credibility of community colleges. In the coming decades, community colleges will find themselves ideally positioned to prepare students with academic and technical skills for entry-level employment in the global workplace (Farmer & Fredrickson, 1999; Farmer & Key, 1997). Other scholars have also indicated that community colleges are in the best position to prepare students and should be considered central to innovation in preparing the workforce (Bragg, 1998; Grubb, 1996). However, many American youth still strive for the baccalaureate degree, and others are either unaware of options for technical or paraprofessional career positions or assume that no education beyond high school is necessary for meaningful work and economic independence.

In today's world, gender will be an issue in the workplace because the percentage of women has increased substantially in both the private sector and state and local government, whereas the participation rate of men has declined (Henderson, 1994). Community colleges and two-year proprietary institutions have done a tremendous job in preparing women for the workforce. Furthermore, women of every ethnic group have increased their workforce participation rates from 50% in 1980 to 57% in 1990 (U.S. Department of Commerce, 1993). Data on the 1997 fall headcount enrollment revealed the increase of women in both institutions. For example, in community colleges 57.9% of the students were women (3,136,324) while 42.1% were men (2,283,939); in proprietary institutions during the same time period, 55.6% of the students were women (1,665,196) and 44.4% were men (1,305,418), according to the National Center for Education Statistics (1999). There was an increase between 1990 and 1996 in the proportion of all vocational students being served by community colleges, with a corresponding decrease at private proprietary institutions (National Center for Education Statistics, 2000). Overall, the number of women participating annually in higher education at all levels now equals almost 8 million, while only 6.3 million men enroll. The number of male college students has hovered around 6 million since 1975, while the number of females has grown from 5 million in 1975 to 8 million in 1997 (King, 2000).

Based on data from other researchers, many highly skilled technical positions do not require a four-year college degree, but they do require more than a high school education, according to Gray and Herr (1995). Moreover, 65% of jobs in the new millennium will require some training beyond high school but not a four-year college degree (Gray & Herr, 1995). However, in spite of the statistics, the sad

reality in this country is that many Americans place greater value on a four-year liberal arts career than on a technical educational career.

The mission of community colleges is conceptually distinct from two-year proprietary institutions. By law, community colleges provide two-year associate degree programs, "university-parallel" lower division courses and programs for students beginning their baccalaureate degree careers, non-credit continuing education opportunities for adults, vocational and occupational education, programs for those not yet ready to do college-level work, remedial courses and programs for those who need additional assistance in such areas as reading, mathematics, and basic skills, and certificate and special programs for non-traditional students (Myers, 1997, 1999). Community colleges are governed by an elected or publicly appointed board of trustees and funded equally, using the one-third formula, by local sponsors (participating school districts), state government, and student tuition. In contrast to community colleges, the mission of proprietary institutions tends to dwell on short-term focused instruction for profit, with the objective of immediate entry-level employment (Hittman, 1995; Shoemaker, 1973). Moreover, proprietary institutions hire, retain, and promote the faculty on their demonstrated ability to teach and emphasize job placement (Belitsky, 1969; Grubb, 1992). Historically, proprietary institutions were rarely governed by a board of lay trustees.

However, times have changed and so have proprietary institutions, especially those in pursuit of degree-granting status. The latter must establish a board of trustees composed of individuals who represent the institution's constituency-faculty, students, and supporters (Hittman, 1995). Proprietary institutions have not experienced as much "hype" as community colleges, but they have managed to "carve a niche" in providing specialized technical career programs especially those programs in the business, clerical, cosmetology, and office occupations.

The graduates of proprietary institutions have less earning power than graduates of community colleges. Empirical evidence of the annual earnings of graduates from both types of institutions was recorded in Grubb's (1992) work concerning the effect of postsecondary education by type of institution. Arguments to describe significant differences between proprietary institutions and community colleges can be made on the grounds that the proprietary institution is a private enterprise and the community college is a public entity (Hittman, 1995). Presently, both of these institutions with their given missions have been significant providers of training in preparing persons for the workforce under the former Job Training Partnership Act (JTPA) (Bender, 1991; Clowes, 1995).

Pennsylvania considers itself a leader among states and a competitor among nations according to its Governor, Tom Ridge (2001). Several states, (Maryland, Virginia, and West Virginia) are currently using Pennsylvania's CareerLink computer system as a model to connect job seekers and employers through use of the Internet. The CareerLink web site is a customer-focused, interactive system that offers personalized job services for job seekers and employers. As a leader among states, Pennsylvania was one of the first states to implement the Workforce Investment Act (WIA). As an early implementer, the Commonwealth of Pennsylvania was considered a resource for identifying problems and providing feedback to the federal government as to what was or was not working.

Problem and Purpose

The problem of this study was based on a need in Pennsylvania to provide legislators and educational leaders with appropriate information to make intelligent decisions on the management of postsecondary technical education because of the urgency for more accountability. Therefore, the purposes of this study were to determine the differences among the personal, situational, and outcome characteristics of students in Pennsylvania community colleges and two-year proprietary institutions, and the nature of differences in gender at both types of institutions. The study, under the auspices of the Pennsylvania Department of Education-Bureau of Vocational Technical Education, was divided into three phases: Planning and Organization, Implementation, and Follow-up. This article describes results of the second phase, which involved surveying a large sample of students currently enrolled in postsecondary programs in Pennsylvania. Although this study is oriented to community colleges and two-year proprietary institutions in Pennsylvania, other states may find parts of this research useful if they are studying the nature and performance of postsecondary technical students.

Questions

Two research questions were used to guide this phase of the study: (a) Is there a difference between postsecondary technical students in community colleges and those in two-year proprietary institutions? (b) Is there an interaction between gender and type of postsecondary technical students in community colleges and two-year proprietary institutions

Method

Sample

The population of postsecondary vocational-technical program enrollments by gender for the 1998-99 school year was 67,750 (32,109 were males, and 35,641 were females), according to the Pennsylvania Division of Data Services (2000). The population represented both public and private two-year colleges in Pennsylvania. There are 15 community colleges in Pennsylvania and 100 questionnaires were mailed to each of them, totaling 1,500. Pennsylvania has 341 registered licensed institutions; however, many of them do not offer associate degree programs in vocational-technical education. The Executive Director of Pennsylvania Private Schools assisted the researchers in selecting 16 proprietary institutions with associate degree programs in vocational- technical education. Based upon his view, the selected institutions represented the major geographical areas of the state and provided a heterogeneous sample. Each of the proprietary institutions would also receive 100 questionnaires, for a total of 1,600.

A purposive sampling technique was used to obtain adequate representation from community colleges and two-year proprietary institutions with associate degree programs in vocational-technical education. Purposive sampling are often referred to as judgment sampling, sample elements judged to be typical, or representative, chosen from the population (Ary, Jacobs, & Razavieh, 1996). The researchers relied on the judgment of the Occupational Deans in selecting participants who were representatives of the population of associate degree students in postsecondary technical education. The sample size was determined by using the sampling table developed by Krueger, (2001); Krejcie and Morgan (1979). Based upon the population for this study, an appropriate sample is about 382. However, the researchers over-sampled to ensure an adequate number of acceptable responses.

Data were collected on 1,047 respondents, but only 1,021 were usable, representing 33% of approximately 3,100 postsecondary technical students. The total respondents from each institution were 47% (704 of 1,500) from community colleges and 20% (317 of 1,600) from proprietary institutions.

Procedure and Research Design

In this phase of the study, a survey research design was employed. This method was appropriate because it allowed both factual and perceptual, or attitudinal, data to be gathered from a sample of a population of postsecondary technical education students (Fowler, 1993; Henerson, Morris, & Fitz-Gibbon, 1987). Moreover, other scholars and researchers consider the survey method appropriate for systematic data collection (Ary, Jacobs, & Razavieh, 1996; Gall, Borg & Gall, 1996).

A 35-item questionnaire, divided into five domains, was designed and field-tested with a small sample (n=24) of postsecondary technical students at a two-year private institution in central Pennsylvania. The questionnaire was comprised of five domains with 7-10 items each: a, demographic (n=10), b, personal circumstances (n=10), c, personal goals/aspirations (n=7), d, institutional participation (n=7), and e, perception of/satisfaction with current institution (n=1 with multiple responses). Prior to conducting the pilot study, a steering committee (11 state leaders) served as subject matter experts (SMEs) to critique the questionnaire for content validity. A focus group (of 7 adults with postsecondary technical background) was also used at the end of the pilot study to discuss participants' problems or concerns regarding the questionnaire. The revised questionnaire was administered to a sample of 3,100 postsecondary technical students in Pennsylvania. Questionnaires were mailed to the Deans of Occupational and Technical Education at each institution, with instructions for administering them to their current students who were pursuing an associate degree in a technical education program. Full-and part-time students were included in the sample. The questionnaires were returned to the researchers and optically scanned by instructional services at The Pennsylvania State University. A preliminary data file was created, refined to eliminate questionable responses, and converted to an SPSS file for analysis. Both descriptive and inferential statistics were calculated.

Variables

The major independent and dependent variables were identified and coded to analyze the specific population. The respondents in community colleges were coded as (1) and those in two-year proprietary institutions were coded as (2). The independent variables were gender, ethnic background, age, marital status, and military veteran. The dependent variables in this study included the respondent's status regarding personal circumstances, personal goals/aspirations, institutional participation, and satisfaction with current institution.

Data Analysis

The log linear model and two-way ANOVA were used to analyze the data. The log linear model is a technique used in analyzing categorical data because it describes association patterns among categorical variables (Agresti, 1990). Moreover, log linear models are appropriate for fitting a wide variety of discrete empirical distributions (Holland & Thayer, 2000). The two-way ANOVA was used to examine institution type, gender, and interaction between institution type and

gender, for the independent variables measured on an interval or ratio scale.

Limitations of the Study

At least three possible limitations of this study should be noted. First, the target population consisted of full-and part-time students enrolled in postsecondary technical programs leading to an associate degree in Pennsylvania community colleges and two-year 50 proprietary institutions. The variable to identify enrollment status (i.e., full-or part-time) was not listed or written on the survey instrument. Second, the sample of 3,100 represented only 5% of the total enrollment (67,750) of postsecondary technical students in Pennsylvania two-year institutions, both public and private. The third limitation pertains to the narrow scope of the study with its focus only on postsecondary students in Pennsylvania. Although Pennsylvania is considered a leader among states in education, further research should be considered to investigate the target population by increasing the involvement of more states to obtain a better geographical representation of two-year degree programs in postsecondary technical education.

Results

Much of the data from the respondents was converted to tables. However, in some instances, it was appropriate to report the data in a narrative format. It should be noted that the results are limited only to the data reported by survey respondents. As shown in Table 1, the percentage of community college respondents who were male (70%) contrasts sharply with the percentage of respondents who were male from proprietary institutions (43%). On the other hand, in the proprietary institutions a higher percentage of females (57%) exist in the postsecondary technical education programs. The results of this study showed that more males than females were enrolled in technical programs in community colleges, versus those enrolled in technical programs in proprietary institutions in Pennsylvania. However, according to the American Association of Community Colleges database, overall, there are more females (58%) than males (42%) enrolled in the 1,132 community colleges in the United States.

The results concerning the type of technical institutions in terms of race/ethnic background revealed no significant difference between institution types and gender as shown in Table 2. However, the data revealed that the vast majority of the respondents were white males, which may raise issues concerning cultural diversity. Only gender had a significant relationship with age; the average mean age for male students was 25.1, which was younger than the female students' average mean age of 27.6, as shown in Table 3. However, on the national level, the average age of community college students is 29, which indicates that the respondents were younger than the national average. The ages of the respondents confirm the educational trend that almost half of all college students are over the age of 24, up 30% from figures in the 1970s (*Adult Learning in America, 1996*).

In terms of marital status, the data showed a difference between genders, but not between institution types. Table 4 shows that there were more single male students (79.3%) in community colleges than female students (58.2%). Also, the data revealed that there were more married female students (24.9%) than married male students (14.4%) in community colleges. In two-year proprietary institutions, there were more single male students (72.3%) than single female students (64.2%).

The percentage of married male students in proprietary institutions was 21.9% and about the same percentage for married female students (21.8%) as shown in Table 4. The data in Table 4 also show that the vast majority of postsecondary technical students in community colleges (72.9%) as well as proprietary institutions (67.7%) were single regardless of their gender. It may be interesting to note that the percentages of divorced female respondents were twice as many as the percentages of divorced male students in both institutions. As shown in Table 4, 10.3% of female respondents were divorced, compared to 5.3% for their male counterparts. In the two-year proprietary institutions, 8.9% of female respondents were divorced compared to 4.4% of the male respondents who were divorced. The remaining data revealed small percentages of separated and widowed postsecondary technical students. The small percentages for the remaining two categories were about the same in both institutions.

Table 1

Gender Breakdown of Respondents in the PPTSS (N=1,021)*

Institution Type	N	%
Community Colleges		
Male	489	69.5
Female	215	30.5
Total	704	100
Two-Year Proprietary Institutions		
Male	137	43.2
Female	180	56.8
Total	317	100
note: **PPTSS= Pennsylvania Postsecondary Technical Student Survey*		

Table 2

Gender and Ethnic Background of the Respondents in the PTSS (N=990)

	Male		Female		Total	
Institution Type	**N**	**%**	**N**	**%**	**N**	**%**
Community Colleges						
American Indian/Alaskan Native	5	1.1	1	0.5	6	0.9
Asian & Pacific American	6	1.3	4	1.9	10	1.5
African/Black American	11	2.3	3	1.4	14	2.1
Latino/Hispanic American	6	1.3	7	3.3	13	1.9
White American	437	92.6	191	91.0	628	92.1

Foreign (Non-Immigrants)	7	1.5	4	1.9	11	1.6
Total	472	100	210	100	682	100
Two-year Proprietary Institutions						
American Indian/Alaskan Native	1	0.8	1	0.6	2	0.6
Asian & Pacific American	4	3.0	1	0.6	5	1.6
African/Black American	5	3.8	4	2.3	9	2.9
Latino/Hispanic American	6	4.5	6	3.4	12	3.9
White American	115	87.1	163	92.6	278	90.3
Foreign (Non-Immigrants)	1	0.8	1	0.6	2	0.6
Total	132	100	176	100	308	100

Table 3

Average Age of Respondents in the PPTSS (N=1,010)

Institution Type	M	SD
Community Colleges		
Male	25.13	0.40
Female	27.61	0.61
Two-Year Proprietary Institutions		
Male	25.09	0.75
Female	25.88	0.66
note: **PPTSS= Pennsylvania Postsecondary Technical Student Survey*		

Table 4

Marital Status of the Respondents in the PPTSS (N=1,016)

	Male		Female		Total	
Institution Type	**N**	**%**	**N**	**%**	**N**	**%**
Community Colleges						
Single, never married	386	79.3	124	58.2	510	72.9
Married, not separated	70	14.4	53	24.9	123	17.6
Separated	1	0.2	11	5.2	12	1.7
Divorced	26	5.3	22	10.3	48	6.9

Widowed	4	0.8	3	1.4	7	1.0
Total	487	100	213	100	700	100
Two-Year Proprietary Institutions						
Single, never married	99	72.3	115	64.2	214	67.7
Married, not separated	30	21.9	39	21.8	69	21.8
Separated	1	0.7	6	3.4	7	2.2
Divorced	6	4.4	16	8.9	22	7.-
Widowed	1	0.7	3	1.7	4	1.3
Total	137	100	179	100	316	100

In Table 5, the results revealed the gender difference in the military status of respondents. However, there is a relationship between institution type and gender. The percentage of male military veterans was higher in two-year proprietary institutions (19.9%) than the percentage of male military veterans in community colleges (10.4%) as shown in Table 5. Although the numbers were very small, as shown in Table 5, it may be interesting to note that the percentage of female veterans (2.8%) in proprietary institutions was three times higher than the percentage of female veterans (0.9%) in community colleges.

High school grade-point average (GPA) was considered a nominal variable because two responses-"completed GED" and "do not know" - were difficult to compare with others in magnitude. By using the log linear model, high school GPA differed by gender. Female students had better high school GPAs than did their male counterparts, as shown in Table 6. In the community colleges, 18.4% of the female respondents had an "A" grade-point average (GPA) compared to 8.6% of male students. In the proprietary institutions, the results were similar-14.2% of the female respondents had an "A" GPA compared to 7.2% of their male counterparts.

On current sources of financial aid, about one-half of the students had exactly one source of financial aid, about 25% had two sources, about 15% of students did not have any financial aid, and about 9% had three major sources of financial aid. To summarize, most students received educational loans and Pell grants as their sources of financial aid.

Table 7 shows the number of hours per week that respondents were currently working, and there was a significant effect for both institution type and gender. The data revealed that community college respondents worked longer-an average of 22 hours a week-than the respondents in two-year proprietary institutions, who worked an average of 17 hours. Also, male respondents worked about 22 hours per week and female respondents on average worked 17 hours per week.

Table 8 refers to the current total household (yourself and others) weekly income before taxes. There was a significant difference between institution type and gender on current total weekly household income before taxes. Community college students had higher household incomes ($1,063) than did their counterparts in two-year proprietary institutions ($768). Students with vocational associate degrees from community colleges increased their annual earnings, but those from technical institutes and private vocational schools tend to depress earnings, as shown in Table 8. In both types of institutions, female respondents' weekly earnings were

considerably less (about $300) than their male counterparts.

Table 5

Military Status of the Respondents in the PPTSS (N=1,013)

Institution Type	Veteran		Non-veteran		Total	
	N	%	N	%	N	%
Community Colleges						
Male	50	10.4	433	89.6	483	100
Female	2	0.9	213	99.1	215	100
Total	52	7.4	646	92.6	698	100
Two-Year Proprietary Inst.						
Male	27	19.9	109	80.1	136	100
Female	5	2.8	174	97.2	179	100
Total	32	10.2	283	89.8	315	100

Table 6

High School GPA of the Respondents in the PPTSS (N=1,011)

Institution Type	Male		Female		Total	
	N	%	N	%	N	%
Community Colleges						
A	42	8.6	39	18.4	81	11.6
B	229	47.0	111	52.4	340	48.6
C	164	33.7	43	20.3	207	29.6
Below C	18	3.7	1	0.5	19	2.7
Completed GED	11	2.3	8	3.8	19	2.7
Do not know	23	4.7	10	4.7	33	4.7
Total	487	100	212	100	699	100
Two-Year Proprietary Inst.						
A	10	7.4	25	14.2	35	11.2
B	62	45.6	99	56.3	161	51.6
C	53	39.0	37	21.0	90	28.8
Below C	2	1.5	3	1.7	5	1.6

Completed GED	2	1.5	8	4.5	10	3.2
Do not know	7	5.1	4	2.3	11	3.5
Total	136	100	176	100	312	100

Table 7

Means and Standard deviation of Number of Hours Per Week currently Working (N=1,002)

Institution Type and Gender	**N**	**M**	**SD**
Community Colleges	693		
Male		25.24	0.74
Female		19.23	1.12
Total		22.24	0.67
Two-Year Proprietary Inst.	309		
Male		18.27	1.40
Female		14.91	1.22
Total		16.60	0.93

Table 8

Means and Standard deviation for Current Total Household Weekly Income Before Taxes (N=723)

Institution Type and Gender	**N**	**M**	**SD**
Community Colleges	499		
Male		1219.32	79.10
Female		906.24	111.53
Total		1062.78	68.37
Two-year Proprietary Inst.	224		
Male		899.24	140.66
Female		629.32	132.12
Total		764.28	96.49

In Table 9, the proportion of Pell grant recipients differed by institution types and gender. The percentage of two-year proprietary institution students (39.7%) who had Pell grants was higher than that for community college students (25.6%). In the community colleges the percentage of female students (35.8%) having Pell grants

was higher than that for male students (21.1%), while in two-year proprietary institutions the proportion of male students (42.3%) having Pell grants was higher than for female students (37.8%).

Table 10 shows that the proportion of educational loan recipients was significantly different for institution types, but not for gender. More postsecondary technical and occupational education students in community colleges received educational loans than did students in two-year proprietary institutions. Nationally, about 33% of all students attending community colleges received some type of financial aid, according to the American Association of Community Colleges (AACC) national database. On the other hand, students in proprietary institutions receive about 25% of their financial aid from the federal government even though they enroll only 5.4% of postsecondary students and 7.7% of low-income students (Grubb, 1992).

It may be of interest to note the percentage of respondents by institution type and gender who relocated to attend school. Although there was no significant difference by institution type or gender, the data revealed that the vast majority of community college respondents (63.2%) attended the institution in their home county and about 51% of proprietary respondents also attended a local institution. This finding may suggests that students value the proximity of postsecondary institutions in their respective communities. However, according to the Pennsylvania State Data Center, more young people, ages 20-29, are leaving the Commonwealth than staying. Overall, Pennsylvania had a 1995 to 1997 net migration loss of approximately 15,000 persons with occupational skills that are critical for high technology and nationally competitive industry and businesses (De Jong & Klein, 1999).

Table 9

Respondents Who Received Pell Grant Loans in the PPTSS (N=1,021)

Institution Type	No		Yes		Total	
	N	%	N	%	N	%
Community Colleges						
Male	386	78.9	103	21.1	489	100
Female	138	64.2	77	35.8	215	100
Total	524	74.4	180	25.6	704	100
Two-Year Proprietary Inst.						
Male	79	57.7	58	42.3	137	100
Female	112	62.2	68	37.8	180	100
Total	191	60.3	126	39.7	317	100

Table 10

Respondents Who Received Educational Loans in the PPTSS (N=1,021)

Institution Type	No		Yes		Total	
	N	%	N	%	N	%
Community Colleges						
Male	321	65.6	168	34.4	489	100
Female	142	66.0	73	34.0	215	100
Total	463	65.8	241	34.2	704	100
Two-Year Proprietary Inst.						
Male	51	37.2	86	62.8	137	100
Female	76	42.2	104	57.8	180	100
Total	127	40.1	190	59.9	317	100

On the question of students' primary educational goal, the analysis revealed that the distribution of such goals differed by institution types and genders. As displayed in Table 11, most respondents indicated that their primary goal was to prepare for a first job/career. However, many of the respondents in both types of institutions were exploring a new academic/career area as their primary goal for attending their respective schools. The data show that slightly more than 20% of the respondents attending community colleges and two-year proprietary institutions were still uncertain about their career occupations. The uncertainty of the respondents in their exploration of new academic/career areas as the primary educational goal in attending their respective institution makes a strong case for career guidance for adult learners. The findings are consistent with Cohen and Brawer's (1989) work, which points out that two-year institutions have historically reached out to attract adult learners who had inadequate preparation in the lower schools, and those whose educational progress had been interrupted by some temporary condition.

Table 11

Primary Educational Goal of Respondents by Institutional Type and Gender in the PPTSS (N=991)

Institution Type	Male		Female		Total	
	N	%	N	%	N	%
Community Colleges						
Prepare for first job	192	40.4	83	39.5	275	40.1
Explore new areas	81	17.1	57	27.1	138	20.1
Improve skill for current job	69	14.5	19	9.0	88	12.8
Transfer to 4-year college	97	20.4	35	16.7	132	19.3
Personal Interest	9	1.9	5	2.4	14	2.0

Cope with major change in life	22	4.6	10	4.8	32	4.7
Improve basic skills	5	1.1	1	0.5	6	0.9
Total	475	100	210	100	685	100
Two-Year Proprietary Inst.						
Prepare for first job	78	59.5	99	56.6	177	57.8
Explore new areas	26	19.8	54	30.9	80	26.1
Improve skill for current job	6	4.6	10	1.7	16	5.2
Transfer to 4-year college	5	3.8	7	4.0	12	3.9
Personal Interest	6	4.6	(No Response)		6	2.0
Cope with major change in life	10	7.6	5	2.9	15	4.9
Total	134	100	175	100	306	100

Conclusions

In terms of ethnicity, postsecondary technical programs in community colleges and two-year institutions participating in this study were overwhelmingly enrolled with white students (92.1 % and 90.3%, respectively). Minority students enrolled in postsecondary technical programs at a disproportionately low rate (0.9 American Indian, 1.5 Asian & Pacific American, 2.1 African American, 1.9 Latino/Hispanic) in comparison with national data that clearly show a need for research in cultural diversity that reflects the dynamics of the workplace in the new millennium. The national enrollment patterns of students in the same ethnic groups were 0.7%, 3.7%, 11.6%, and 11.6%, respectively.

Based on the respondents in this study, significant difference exists between the ages of female (M=27.6) and male (M=25.1) respondents in community colleges. However, there was no difference in gender and age of technical education respondents in the two-year proprietary institutions.

Although most of the respondents in both institutions were single (72.9% in community colleges and 67.7% in two-year proprietary institutions), the percentage of divorced female respondents was double that of the divorced male respondents in both institutions. In community colleges, the results of this study showed the percentage of divorced female respondents was 10.3% versus 5.3% for their male counterparts. The results were basically the same for respondents in two-year proprietary institutions: 8.9% of the female respondents were divorced compared to 4.4% for the male respondents. This dilemma may be an issue for midlife respondents approaching career changes in post-secondary education institutions.

On average, study results showed that the percentage of female respondents in both institutions had higher grade-point averages (GPA) than their male counterparts. In the community colleges, 18.4% of the female respondents had an "A" GPA compared to 8.6% for male students. In the proprietary institutions, the results were similar:14.2% of the female respondents had an "A" GPA compared to 7.2% for their male counterparts. The data showed that female respondents spend more time studying than their male counterparts, which may explain why female

students have higher GPAs than male students.

In terms of the number of hours currently worked per week, the results of this study showed that female respondents in both institutions worked fewer hours than their male counterparts. On average, female respondents in community colleges worked 19.2 hours per week while the male respondents worked 25.2 hours during the same time period. Female respondents in proprietary institutions also worked fewer hours (17.1) per week than their male counterparts (21.7).

Implications

Several implications may be drawn from the results of this study for education leaders and policymakers to consider when planning, managing and delivering postsecondary technical programs. In terms of planning future programs, the results may provoke a debate for more diversity in student enrollment in community colleges technical fields of study. The dynamic changes in the workforce in the new millennium will provide a major challenge for community college leaders to provide quality programs to an increasing diverse population. Although community colleges are making tremendous "in-roads" with preparing the next generation of workers with competitive technical skills, they have come short of the mark in attracting women and minorities in technical careers. At present, technical programs are dominated with white male students even though there are more females (58%) than males (42%) enrolled in the 1,132 community colleges in our nation.

The increasing number of women and minority students enrolled in community colleges in the United States is not reflected of their enrollment in technical education programs. Unfortunately, the glass ceiling still exists for most women in the workplace even though they have made tremendous progress. Women are still encountering obstacles and barriers in the workplace while performing better than their male counterparts. For example, data from this study showed that women's academic achievement had increased while men's had decreased. It is clear that more recruitment emphases should focus on enrolling women and minorities into nontraditional technical careers.

Another implication of this study concerns accountability and need for more of it in managing and delivering quality programs. Budget cuts, layoffs, and downsizing of American businesses and industries are painful reminders of accountability concerns in the workplace, in both the public and private sectors. Community colleges and two-year proprietary institutions must be prepared to collaborate with employers to train as well as retrain many of these displaced workers. More importantly, global competition in the marketplace will intensify demands for U.S. employers to possess an increasingly competitive workforce or rely on immigrants to fill the void of technical skill workers. Each year more than 25,000 foreign workers enter the United States on employment-based visas to fill job openings in specialty areas of precision metal crafts.

Finally, the results of this study may be useful for education leaders and policymakers to consider when discussing enrollment patterns of students in postsecondary technical and occupational education programs; even though the data were based on a form of non-probability sampling (i.e. purposive sampling). Clearly, there is a need for more research on students in postsecondary technical programs, especially in the areas of cultural diversity, enrollment patterns, and factors that influence women and minorities in entering or choosing their respective

career paths. Comprehensive studies focusing on gender enrollment patterns in postsecondary technical education are rare and the need for more data, both quantitative and qualitative, cannot be over-emphasized.

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