

INTRODUCTION

A key part of PVCC's mission is the promotion of student success, including employment that a student obtains after graduation. This report provides details on the impact that PVCC had on students obtaining employment. The study examined the relationship between the career and career and technical education (CTE) academic programs, reviews regional employers who hired PVCC students, and the average salary of the graduates. Essentially, this report sought to answer three questions:

1. Are PVCC CTE graduates obtaining jobs?
2. Are those eligible for licensure and/or certification receiving licensure and/or certification?
3. Has PVCC contributed to furthering students' academic and/or professional goals?

METHODOLOGY

This report focuses on the employability of CTE graduates at PVCC. A CTE graduate is defined as a student who has earned an Associates of Applied Science, Certificate, and/or Career Studies Certificates¹. In 2017-2018, 297 students graduated with a CTE award. Entrepreneurship students were excluded from this study because self-employment data is not available through employment databases. A professional credential is defined as registered apprenticeship certificates, occupational licenses (typically awarded by State government agencies), and certifications from industry or professional associations². Using a triangulated methodology, the data was captured from a series of databases (national, state, and federal³), the graduate exit application, and the graduate employment follow-up survey. By utilizing these three sources, the institution receives a clear picture of the employment of the most recent graduating class. Those programs that are non-CTE programs have been excluded from this report. To provide adequate time for graduates to obtain employment, PVCC uses the Bureau of Labor and Statistics standard of six months to obtain employment.

Of the 297 students, 61% (n = 181) were female, 39% (n = 115) were male, and less than 1% (n = 1) were unspecified. For the age distribution of students in this sample, less than 1% (n = 1) were younger than 20, 52% (n = 155) were between 20 and 29, 29% (n=85) were between 30 and 39, 14% (n = 42) were between 40 and 49, and 5% (n = 14) were 50 or older. In this study, 69% (n = 206) were White, 13% (n = 38) were Black, 8% (n = 24) were Hispanic, and 10% were Other.

HIGHLIGHTS

- 94% of PVCC CTE graduates have a job in six months
- 95% of licensure and/or certification eligible students have successfully become licensed or obtained certification in their field of study
- 95% of CTE graduates stated that PVCC had helped them further their academic and/or professional goals
- Average full-time Salary of CTE Graduates is \$35,487
- 85% of employed graduates are working within their field of study
- 69% of companies employing PVCC graduates are in the graduates' field of study

¹ See Appendix C

² U.S. Department of Labor Employment and Training Administration (2012). Retrieved from: <https://doleta.gov/taaccct/pdf/presenters/Bosworth-Frugoli.pdf>

³ See Appendix B

EMPLOYMENT RESULTS

The results presented provide the reporting details from the three employment databases currently available to PVCC. These databases include reporting at the state, national, and federal levels. The total number of CTE graduates was 297. Graduates of the entrepreneurship program were excluded from this study because self-employment is not available in employment databases. Of those graduates, 40 were moved out of the database reporting area, were deceased, or were enrolled in an institution of higher education making the number of operable respondents 257 (87%). For 2017-18 CTE graduates, 242 (94%) obtained employment within six months of graduating. In this study, 93% of diverse students and 94% of “graying”⁴ students obtained employment within six months of graduating.

For the past three years, PVCC has had a target of 90% of students⁵ being employed within six months after graduation. Since PVCC has surpassed this target each of those three years, PVCC decided to increase its target to 94% of students will be employed within six months after graduation. The table below denotes those programs that are not meeting the institutional effectiveness target of 94% by marking the percent of graduates employed in red. The total number of graduates and the total number of employed graduates was not displayed for programs with three or fewer graduates. For certain programs, like Emergency Medical Services, graduates may be volunteering in their field rather than seeking employment. Results for the programs will be shared with the Deans and program coordinators for program annual reporting and program reviews.

Table 1a: Employment results by academic plan

Academic Plan	Total graduates	Count of graduates in national, state, & federal employment databases	Percent of graduates in national, state, federal employment databases (%)	Total employed	Percent of graduates employed (%)
Diagnostic Medical Sonography (109)	12	9	75%	7	78%
Health and Information Management (141)	7	6	86%	6	100%
Emergency Medical Services (146)	7	7	100%	7	100%
Nursing (156)	76	72	95%	72	100%
Practical Nursing (157)	15	14	93%	14	100%
Surgical Technology (159)	10	10	100%	10	100%
Radiography (172)	18	12	67%	12	100%
Management (212)	9	8	89%	4	50%
Emergency Medical Services - Intermediate (221-146-03)	*	*	*	*	*
Emergency Medical Services - Paramedic (221-146-05)	30	23	77%	19	83%
Emergency Medical Services - Advanced (221-146-08)	4	3	75%	3	100%
Medical Administrative Support Assistant (221-152-10)	8	7	88%	7	100%
Pharmacy Technician (221-190-08)	8	6	75%	6	100%
Professional Cooking (221-242-06)	18	17	94%	16	94%
Central Services Technician (221-285-88)	4	4	100%	4	100%
Administrative Support (221-298-55)	13	9	69%	8	89%
Horticulture (221-335-01)	5	*	*	*	*
Web Technologies (221-352-04)	*	*	*	*	*
Criminal Justice (221-400-45)	20	20	100%	19	95%
Graphic Design (221-514-35)	*	*	*	*	*
Early Childhood Development - Infant and Toddler (221-636-05)	8	8	100%	8	100%
Early Childhood Development – Preschool (221-636-06)	9	8	89%	8	100%
Computer and Network Support Technologies (221-732-07)	13	10	77%	9	90%
Cybersecurity (221-732-09)	*	*	*	*	*
Culinary Arts (242)	12	11	92%	11	100%
Information Systems Technology (299)	5	4	80%	4	100%
Information Systems Cybersecurity (299-06)	*	*	*	*	*
Police Science (464)	6	6	100%	6	100%
Electronics and Computer Technology (981)	*	*	*	*	*
Total Unduplicated Across Academic Plans	297	257	87%	242	94%

*Denotes areas with three or fewer students

⁴ “Graying” students are defined as students aged 40 years or older, definition from https://books.google.com/books?id=hKNzCgAAQBAJ&dq=%22graying%22+higher+education&lr=&source=gbv_navlinks_s

⁵ Operable respondents

One of PVCC's values is diversity. As such, PVCC explored employment obtainment by race and age. Totals where the number of graduates were less than 3 are denoted by an asterisk (*). Populations that had three or fewer graduates were American Indian or Alaskan Native, Native Hawaiian, and Unspecified. Since these numbers were low, the percent of graduates employed is used for informational purposes only. Races that met the population threshold and met PVCC's employment target of 94% were:

- Black (100%)
- Hispanic (95%)
- White (95%)

It should be noted that American Indian or Alaskan Native and Native Hawaiian also met the employment target but, due to a low number of graduates, it was not listed above.

Table 1b: Employment results by ethnicity

Ethnicity	Total graduates	Count of graduates in national, state, & federal employment databases	Percent of graduates in national, state, federal employment databases (%)	Total employed	Percent of graduates employed (%)
2 or More	16	16	100%	13	81%
Amer Ind or Alaskan Nat	*	*	*	*	*
Asian	8	5	63%	4	80%
Black	38	35	92%	35	100%
Hispanic	24	20	83%	19	95%
Native Hawaiian	*	*	*	*	*
Unspecified	*	*	*	*	*
White	206	176	85%	167	95%
Total Unduplicated	297	257	87%	242	94%

*Denotes areas with three or fewer students

When PVCC examined employment by age, only one age bracket, 18-19, did not meet the population threshold. The age brackets that met the population threshold and PVCC's employment target were:

- 20-21 (100%)
- 30-34 (95%)
- 35-39 (97%)
- 40-49 (97%)

The age brackets that met the population threshold but did not meet PVCC's employment target were:

- 22-24 (93%)
- 25-29 (92%)
- 50-64 (82%)

The tables below denote those populations that are not meeting the institutional effectiveness target of 94% by marking the percent of graduates employed in red. The total number of graduates and the total number of employed graduates was not displayed for populations with three or fewer graduates. These results will be shared with the Office of Career Services and the Dean of Student Services to formulate an action plan concerning these results. As a reminder, PVCC excluded those students who had transferred to another institution of higher education.

Table 1c: Employment results by age

Age	Total graduates	Count of graduates in national, state, & federal employment databases	Percent of graduates in national, state, federal employment databases (%)	Total employed	Percent of graduates employed (%)
18-19	*	*	*	*	*
20-21	19	17	89%	17	100%
22-24	66	60	91%	56	93%
25-29	70	61	87%	56	92%
30-34	48	38	79%	36	95%
35-39	37	33	89%	32	97%
40-49	42	36	86%	35	97%
50-64	14	11	79%	9	82%
Total Unduplicated	297	257	87%	242	94%

*Denotes areas with three or fewer students

EMPLOYERS

Employers are a vital part of the service community. Employers provide an indication as to the job preparedness and academic performance of college graduates. The following table details the number of employers and the percent of the employers who are in the academic plans field. Employers within the field were determined by the employers North American Industry Classification System (NAICS) code⁶ and whether the employer NAICS code related to the academic plan by using the NAICS to CIP Code crosswalk. Many PVCC graduates are employed by the same employer. PVCC grants that occupational and employer's field of study are two different things. In an ideal setting, PVCC would compare occupation to academic plan. However, the employment databases available only provide the employer's field of study.

PVCC has a goal of 75% of employers being in the graduates' field of study. This is a new goal for institutional effectiveness which was determined after studying the previous three years of data. Overall, 69% of employers were in the graduates' field of study. The table below denotes those programs that are not meeting the institutional effectiveness target of 75% by marking the percent of graduates employed in red. The number of employers and the number of employers in academic plan field was not displayed for populations with fewer than three employers. Findings will be shared with the program coordinators, Deans, and the Office of Career Services.

Table 2: Employers by academic plan

Academic Plan	Number of employers	Number of employers in academic plan field	% of employers in academic plan field
Diagnostic Medical Sonography (109)	4	3	75%
Health and Information Management (141)	6	4	67%
Emergency Medical Services (146)	8	8	100%
Nursing (156)	13	11	85%
Practical Nursing (157)	10	9	90%
Surgical Technology (159)	4	4	100%
Radiography (172)	4	3	75%
Management (212)	6	4	67%
Emergency Medical Services - Intermediate (221-146-03)	*	*	*
Emergency Medical Services - Paramedic (221-146-05)	13	11	85%
Emergency Medical Services - Advanced (221-146-08)	5	3	60%
Medical Administrative Support Assistant (221-152-10)	8	8	100%
Pharmacy Technician (221-190-08)	4	*	*
Professional Cooking (221-242-06)	13	8	62%
Central Services Technician (221-285-88)	*	*	*
Administrative Support (221-298-55)	9	8	89%
Horticulture (221-335-01)	*	*	*
Web Technologies (221-352-04)	*	*	*
Criminal Justice (221-400-45)	22	11	50%
Graphic Design (221-514-35)	*	*	*
Early Childhood Development - Infant and Toddler (221-636-05)	6	*	*
Early Childhood Development – Preschool (221-636-06)	7	4	57%
Computer and Network Support Technologies (221-732-07)	7	4	57%
Cybersecurity (221-732-09)	*	*	*
Culinary Arts (242)	9	7	78%
Information Systems Technology (299)	4	3	75%
Information Systems Cybersecurity (299-06)	*	*	*
Police Science (464)	8	5	63%
Electronics and Computer Technology (981)	*	*	*
Total Unduplicated Across Academic Plans	180	125	69%

*Denotes areas with three or fewer students

⁶ See Appendix A

FIELD OF STUDY

Employment in the field of study assists program coordinators to determine if the program is a cost benefit to the student. For institutional effectiveness, PVCC has a goal of 85% of graduates being employed in their program field of study. From this study, 85% (n = 206) of graduates were indicated to be employed in their program field of study. Eighty-five percent (85%) of diverse students and 86% of “graying” students were employed in their program field of study. The tables below denote those academic plans and populations that are not meeting the institutional effectiveness target of 85% by marking the percent of graduates employed in field of study red. The total number of graduates and the total number of employed graduates was not displayed for populations with fewer than three graduates.

Table 3a: Number of jobs in field of study by academic plan

Academic Plan	Total Employed	Total Employed in the field of study	% Employed graduates working in the field of study
Diagnostic Medical Sonography (109)	7	6	86%
Health and Information Management (141)	6	5	83%
Emergency Medical Services (146)	7	7	100%
Nursing (156)	72	70	97%
Practical Nursing (157)	14	13	93%
Surgical Technology (159)	10	9	90%
Radiography (172)	12	12	100%
Management (212)	4	4	100%
Emergency Medical Services - Intermediate (221-146-03)	*	*	*
Emergency Medical Services - Paramedic (221-146-05)	19	18	95%
Emergency Medical Services - Advanced (221-146-08)	*	*	*
Medical Administrative Support Assistant (221-152-10)	7	5	71%
Pharmacy Technician (221-190-08)	6	5	83%
Professional Cooking (221-242-06)	16	14	88%
Central Services Technician (221-285-88)	4	3	75%
Administrative Support (221-298-55)	8	6	75%
Horticulture (221-335-01)	*	*	*
Web Technologies (221-352-04)	*	*	*
Criminal Justice (221-400-45)	19	10	53%
Graphic Design (221-514-35)	*	*	*
Early Childhood Development - Infant and Toddler (221-636-05)	8	4	50%
Early Childhood Development – Preschool (221-636-06)	8	4	50%
Computer and Network Support Technologies (221-732-07)	9	5	56%
Cybersecurity (221-732-09)	*	*	*
Culinary Arts (242)	11	9	82%
Information Systems Technology (299)	4	3	75%
Information Systems Cybersecurity (299-06)	*	*	*
Police Science (464)	6	5	83%
Electronics and Computer Technology (981)	*	*	*
Total Unduplicated Across Academic Plans	242	206	85%

*Denotes areas with three or fewer students

When employment in the field of study was explored by race (see table 3b below), the races that met the population threshold and met PVCC's employment in field target were:

- 2 or More (100%)
- White (100%).

It should be noted American Indian or Alaskan Native, Native Hawaiian, and Unspecified all met the target but, due to a low number of graduates in each population, they were not listed above.

Table 3b: Number of jobs in field of study by ethnicity

Ethnicity	Total Employed	Total Employed in the field of study	% Employed graduates working in the field of study
2 or More	13	13	100%
Amer Ind or Alaskan Nat	*	*	*
Asian	4	3	75%
Black	35	28	80%
Hispanic	19	16	84%
Native Hawaiian	*	*	*
Unspecified	*	*	*
White	167	142	85%
Total Unduplicated	242	206	85%

*Denotes areas with three or fewer students

When PVCC examined age (see table 3c below), the age brackets that met the population threshold and met PVCC's employment in field target were:

- 22-24 (89%)
- 25-29 (86%)
- 30-34 (86%)
- 35-39 (88%)
- 40-49 (89%)

The age brackets that met the population threshold but did not meet PVCC's employment in field target were:

- 20-21 (65%)
- 50-64 (78%)

Table 3c: Number of jobs in field of study by age

Age	Total Employed	Total Employed in the field of study	% Employed graduates working in the field of study
18-19	*	*	*
20-21	17	11	65%
22-24	56	50	89%
25-29	56	48	86%
30-34	36	31	86%
35-39	32	28	88%
40-49	35	31	89%
50-64	9	7	78%
Total Unduplicated	242	206	85%

*Denotes areas with three or fewer students

SALARIES

Spring 2018 graduates' quarter three and four wages were not available. Therefore, the first two quarters were averaged to calculate an estimated quarter three, then the first three quarters were averaged to calculate an estimated quarter four and annual salary for Spring 2018 graduates. The table below depicts the number of in the field of study jobs, the average full-time salary in the field of study, and the low to high range for full time salaries in the field of study. For in the field of study careers, the average salary was \$35,000 per year. The low to high range was \$20,000 to \$108,000 per year. Programs with three or fewer reported full-time, in the field salaries were not reported.

Table 4a: Average full-time salaries and salary range by academic plan

Academic Plan	n	Average full-time salary in the field of study	Low-high full-time salary range in the field of study
Emergency Medical Services (146)	4	\$49,956.92	\$23-89,000
Nursing (156)	47	\$28,573.60	\$20-51,000
Practical Nursing (157)	5	\$41,588.45	\$22-73,000
Surgical Technology (159)	7	\$48,141.33	\$23-69,000
Management (212)	4	\$25,053.33	\$20-33,000
Emergency Medical Services - Paramedic (221-146-05)	16	\$48,345.87	\$23-108,000
Pharmacy Technician (221-190-08)	4	\$32,475.99	\$31-37,000
Criminal Justice (221-400-45)	8	\$34,412.95	\$29-42,000
Police Science (464)	5	\$38,853.65	\$20-63,000
Total Unduplicated Across Academic Plans	107	\$35,487	\$20-108,000

Note: Full time salary is classified as anything above \$20,000 per the national standard (BLS, 2016)

**Students who graduated in multiple academic plans are listed in each plan

PVCC examined average full-time salaries by race and age. Table 4b provides the average salary and the low-high full-time salary range by race. Table 4c provides the average salary and the low-high full-time salary range by age range.

Table 4b: Average full-time salaries and salary range by ethnicity

Ethnicity	n	Average full-time salary in the field of study*	Low-high full-time salary range in the field of study
2 or More	11	\$29,489.02	\$23-33,000
Amer Ind or Alaskan Nat	*	-	-
Asian	*	-	-
Black	12	\$36,120.29	\$20-69,000
Hispanic	6	\$32,974.90	\$20-51,000
Native Hawaiian	*	-	-
Unspecified	*	-	-
White	77	\$36,593.80	\$21-108,000
Total Unduplicated	107	\$35,487	\$20-108,000

Note: Full time salary is classified as anything above \$20,000 per the national standard (BLS, 2016)

*Denotes areas with three or fewer students

Table 4c: Average full-time salaries and salary range by age

Age	n	Average full-time salary in the field of study*	Low-high full-time salary range in the field of study
18-19	*	-	-
20-21	6	\$34,371.16	\$29-51,000
22-24	24	\$29,631.72	\$20-43,000
25-29	24	\$36,564.47	\$20-89,000
30-34	13	\$38,879.83	\$22-84,000
35-39	21	\$33,657.57	\$21-73,000
40-49	16	\$42,165.19	\$22-108,000
50-64	*	-	-
Total Unduplicated	107	\$35,487	\$20-108,000

Note: Full time salary is classified as anything above \$20,000 per the national standard (BLS, 2016)

*Denotes areas with three or fewer students

THE PVCC RELATIONSHIP

As a part of a graduation exit survey, students were asked to respond if they had obtained employment and the extent to which their academic program related to this employment opportunity. Of the 230 students who responded to the academic and professional goal section of the graduate survey for CTE programs, 95% (n = 218) stated that PVCC had helped them to further their academic and/or professional goals. Of those who responded to this section of the survey, 96% of diverse students and 95% of “graying” students stated that PVCC had helped them to further their academic and/or professional goals.

The following programs met the population threshold and the percent of respondents who stated PVCC helped them to further their academic/professional goals was less than 95%:

- Health and Information Management (83%)
- Medical Administrative Support Assistant (88%)
- Professional Cooking (67%)
- Administrative Support (80%)
- Web Technologies (67%)
- Early Childhood Development – Infant and Toddler (75%)
- Early Childhood Development – Preschool (89%)
- Computer and Network Support Technologies (83%)
- Culinary Arts (73%)
- Information Systems Cybersecurity (50%)

Table 5a: Respondents from graduate exit survey that stated PVCC had helped them further their academic and/or professional goals by academic plan

Academic Plan	Total Number of Graduates	Total Number of Respondents	n	% of Respondents that Stated PVCC Helped Them to Further Their Academic and/or Professional Goals
Diagnostic Medical Sonography (109)	12	12	12	100%
Health and Information Management (141)	7	6	5	83%
Emergency Medical Services (146)	7	6	6	100%
Nursing (156)	76	72	72	100%
Practical Nursing (157)	15	15	15	100%
Surgical Technology (159)	10	10	10	100%
Radiography (172)	18	17	17	100%
Management (212)	9	7	7	100%
Emergency Medical Services - Intermediate (221-146-03)	*	*	*	*
Emergency Medical Services - Paramedic (221-146-05)	30	3	3	100%
Emergency Medical Services - Advanced (221-146-08)	4	*	*	*
Medical Administrative Support Assistant (221-152-10)	8	8	7	88%
Pharmacy Technician (221-190-08)	8	7	7	100%
Professional Cooking (221-242-06)	18	15	10	67%
Central Services Technician (221-285-88)	4	4	4	100%
Administrative Support (221-298-55)	13	10	8	80%
Horticulture (221-335-01)	5	*	*	*
Web Technologies (221-352-04)	*	*	*	*
Criminal Justice (221-400-45)	20	11	11	100%
Graphic Design (221-514-35)	*	*	*	*
Early Childhood Development - Infant and Toddler (221-636-05)	8	8	6	75%
Early Childhood Development – Preschool (221-636-06)	9	9	8	89%
Computer and Network Support Technologies (221-732-07)	13	6	5	83%
Cybersecurity (221-732-09)	*	*	*	*
Culinary Arts (242)	12	11	8	73%
Information Systems Technology (299)	5	4	4	100%
Information Systems Cybersecurity (299-06)	*	*	*	*
Police Science (464)	6	4	4	100%
Electronics and Computer Technology (981)	*	*	*	*
Total Number of Unduplicated Graduates	297	230	218	95%

*Denotes areas with three or fewer students

Table 5b provides the total number of survey respondents as well as the number and percent of respondents who stated PVCC had helped them to further their academic and/or professional goals by race. The following ethnicities met the population threshold and the percent of respondents who stated PVCC helped them to further their academic/professional goals was less than 95%:

- 2 or More (90%)
- Hispanic (89%)
- White (94%)

Table 5c: Respondents from graduate exit survey that stated PVCC had helped them further their academic and/or professional goals by age

Age	Total Number of Graduates	Total Number of Respondents	n	% of Respondents that Stated PVCC Helped Them to Further Their Academic and/or Professional Goals
18-19	*	*	*	*
20-21	19	14	11	79%
22-24	66	52	51	98%
25-29	70	57	53	93%
30-34	48	39	37	95%
35-39	37	27	27	100%
40-49	42	32	32	100%
50-64	14	8	6	75%
Total Unduplicated	297	230	218	95%

*Denotes areas with three or fewer students

Table 5c provides the total number of survey respondents as well as the number and percent of respondents who stated PVCC had helped them to further their academic and/or professional goals by age range. The following age brackets met the population threshold and the percent of respondents who stated PVCC helped them to further their academic/professional goals was less than 95%:

- 20-21 (79%)
- 25-29 (93%)
- 50-64 (75%)

Table 5b: Respondents from graduate exit survey that stated PVCC had helped them further their academic and/or professional goals by ethnicity

Ethnicity	Total Number of Graduates	Total Number of Respondents	n	% of Respondents that Stated PVCC Helped Them to Further Their Academic and/or Professional Goals
2 or More	16	10	9	90%
Amer Ind or Alaskan Nat	*	*	*	*
Asian	8	7	7	100%
Black	38	35	35	100%
Hispanic	24	18	16	89%
Native Hawaiian	*	*	*	*
Unspecified	*	*	*	*
White	206	155	146	94%
Total Unduplicated	297	230	218	95%

*Denotes areas with three or fewer students

CREDENTIALS

A part of PVCC's mission is to prepare students for success. This often occurs through external credentialing agencies. PVCC explored those students who graduated in programs that led to licensure in the state of Virginia or a credential from the field of study's national registry⁷. PVCC has a goal of 90% of graduates eligible for credentialing becoming successfully licensed or certified in their field of study. Of the graduates eligible for credentialing (n = 182), 172 (95%) completed their licensing examinations or certifications in their field of study. Of the graduates eligible for credentialing, 90% of diverse students and 89% of "gray" students completed their licensing examinations or certifications in their field of study. Many of these graduates received multiple credentials. Of the 172 who received credentials in these programs, the average was 1.5 licenses or certifications per credentialed graduate.

The following programs met the population threshold and the percent of successfully licensed or certified in their field of study was less than 90%:

- Practical Nursing (87%)
- Surgical Technology (80%)
- Pharmacy Technician (88%)

Table 6a. Credentials earned by academic plan

Academic Plan	Total Number of Graduates	Number of Credentialed Graduates	Unduplicated number of successfully licensed or certified in the field graduates	Percent of unduplicated number of successfully licensed or certified in the field graduate (%)	Number of licenses or certifications held by graduates	Average number of licenses or certifications per credentialed graduate
Diagnostic Medical Sonography (109)	12	12	12	100%	14	1.2
Emergency Medical Services (146)	7	7	7	100%	12	1.7
Nursing (156)	76	73	73	96%	106	1.5
Practical Nursing (157)	15	14	13	87%	17	1.2
Surgical Technology (159)	10	9	8	80%	12	1.3
Radiography (172)	18	18	18	100%	25	1.4
Emergency Medical Services - Intermediate (221-146-03)	*	*	*	*	*	*
Emergency Medical Services - Paramedic (221-146-05)	30	30	30	100%	49	1.6
Emergency Medical Services - Advanced (221-146-08)	4	4	4	100%	10	2.5
Pharmacy Technician (221-190-08)	8	7	7	88%	15	2.1
Central Services Technician (221-285-88)	4	*	*	*	*	*
Total Unduplicated Across Academic Plans	182	173	172	95%	255	1.5

*Denotes areas with three or fewer students

⁷ For each of these programs, any credential of basic life support or CPR is considered to be in the field of study.

Table 6b provides credentials earned by ethnicity. All of the following ethnicities that met the population threshold also met the goal of 90% of graduates eligible for credentialing were successfully licensed or certified in their field of study:

- 2 or more (100%)
- Black (91%)
- Hispanic (100%)
- White (96%)

Table 6b. Credentials earned by ethnicity

Ethnicity	Total Number of Graduates	Number of Credentialled Graduates	Unduplicated number of successfully licensed or certified in the field graduates	Percent of unduplicated number of successfully licensed or certified in the field graduate (%)	Number of licenses or certifications held by graduates	Average number of licenses or certifications per credentialled graduate
2 or More	10	10	10	100%	16	1.6
Amer Ind or Alaskan Nat	*	*	*	*	*	*
Asian	*	*	*	*	*	*
Black	23	21	21	91%	26	1.2
Hispanic	12	12	12	100%	17	1.4
Native Hawaiian	*	*	*	*	*	*
Unspecified	*	*	*	*	*	*
White	132	128	127	96%	193	1.5
Total Unduplicated	182	173	172	95%	255	1.5

*Denotes areas with three or fewer students

Table 6c provides credentials earned by age bracket. The following age bracket met the population threshold and the percent of successfully licensed or certified in their field of study was less than 90%:

- 50-64 (80%)

Table 6c. Credentials earned by age

Age	Total Number of Graduates	Number of Credentialled Graduates	Unduplicated number of successfully licensed or certified in the field graduates	Percent of unduplicated number of successfully licensed or certified in the field graduate (%)	Number of licenses or certifications held by graduates	Average number of licenses or certifications per credentialled graduate
18-19	*	*	*	*	*	*
20-21	5	5	5	100%	7	1.4
22-24	38	37	37	97%	58	1.6
25-29	48	47	47	98%	74	1.6
30-34	29	28	27	93%	36	1.3
35-39	25	23	23	92%	34	1.5
40-49	32	29	29	91%	40	1.4
50-64	5	4	4	80%	6	1.5
Total Unduplicated	182	173	172	95%	255	1.5

*Denotes areas with three or fewer students

CONCLUSION

This study sought to answer three questions. The first research question examined job obtainment of PVCC CTE graduates. The results of this study show that 94% of PVCC CTE graduates obtained jobs within six months. Sixty-nine percent (69%) of employers were in the academic plan field of study and 85% of graduates were employed in their field of study. Thus, concluding that PVCC CTE graduates are obtaining employment in their area of academic endeavor.

The second research question investigated student success in earning a licensure and/or certification. Of the eligible graduates, 93% (n = 170) successfully completed their licensing examinations and/or certifications. Many of these graduates received multiple credentials with an average of 1.5 credentials per credentialed graduate. Ninety percent (90%) of diverse graduates and 89% of “graying” successfully completed their licensing examinations and/or certifications.

The final question explored if PVCC had contributed to furthering students’ academic and/or professional goals. Resoundingly, 95% of graduates reported that PVCC helped them further their academic and/or professional goals. Also, 96% of diverse graduates and 95% of “graying” graduates reported that PVCC helped them further their academic and/or professional goals.

When PVCC examined the results of this study by ethnicity, the ethnicities of American Indian or Alaskan Native, Native Hawaiian, and Unspecified were consistently too low in population to accurately report data. When the results were examined by age, the age bracket of 18-19 was too low in population to accurately report data.

For institutional effectiveness, the results show PVCC did not meet its new goal of 75% of employers being in the graduates’ field of study. This study found 69% of employers were in the graduates’ field of study.

For institutional effectiveness, the results show PVCC is meeting or exceeding the targets for student employment success in two of the three goals.

- Goal of 94% of graduates being employed six months after graduation
 - 93% of diverse graduates were employed within six months of graduation
 - 94% of “graying” graduates were employed within six months of graduation
- Goal of 85% of graduates being employed in their program field of study
 - 85% of diverse graduates were employed in their program field of study
 - 86% of “graying” students were employed in their program field of study

APPENDIX A: NORTH AMERICAN INDUSTRY CLASSIFICATION SYSTEM

NAICS is a two- through six-digit hierarchical classification system, offering five levels of detail. Each digit in the code is part of a series of progressively narrower categories, and the more digits in the code signify greater classification detail. The first two digits designate the economic sector, the third digit designates the subsector, the fourth digit designates the industry group, the fifth digit designates the NAICS industry, and the sixth digit designates the national industry. The five-digit NAICS code is the level at which there is comparability in code and definitions for most of the NAICS sectors across the three countries participating in NAICS (the United States, Canada, and Mexico). The six-digit level allows for the United States, Canada, and Mexico each to have country-specific detail. A complete and valid NAICS code contains six digits.

NAICS_CODE	DESCRIPTION
11	Agriculture, Forestry, Fishing and Hunting
111	Crop Production
1111	Oilseed and Grain Farming
11111	Soybean Farming
111110	Soybean Farming
11112	Oilseed (except Soybean) Farming
111120	Oilseed (except Soybean) Farming
11113	Dry Pea and Bean Farming
111130	Dry Pea and Bean Farming
11114	Wheat Farming
...	

Please note: These are industry codes and no information is available regarding person's job function within industry.

APPENDIX B: EMPLOYMENT DATABASES

This study used three databases federal, state, and a multi-state database.

Federal Database

The federal database is collected and maintained by the University of Maryland and is provided four times a year on six-month stagger in reporting. The federal department, agency names, military branches, and addresses are not provided. Employee salaries are provided and the NAICS code for employment is used. Employment data on federal and military employees is provided at the unit level.

Multi-state Database

The multi-state database is collected and maintained by the Bureau of Labor and Statistics and provides data to PVCC four times a year on a six-month stagger in reporting. Federal employees, farmers, incarcerated, and self-employed are excluded. Hawaii and Alaska do not report to the multi-state database.

Virginia Database

All states are required to collect and maintain data on employees from every non-federal wage-paying employer, within their boundaries, covered by that state's unemployment compensation laws. In Virginia, this requirement is satisfied by the Virginia Employment Commission (VEC) collecting and maintaining wage records used to determine employment and earnings of individuals covered by the Virginia unemployment compensation laws. These records populate the VEC Unemployment Insurance (UI) database. Employers submit UI quarterly reports of employee earnings to the VEC. For each employee, an employer reports social security number (SSN) and total earnings received during the quarter. Additionally, employer information is also provided, such as the unique employer federal identification number, business name, mailing address, and industry affiliation code.

Since each state maintains its own UI database, based on reports from employers within its state boundaries, the VEC UI database consists primarily of data on individuals employed in the state of Virginia. Data on individuals employed in neighboring states (MD, NJ, OH, PA, WV, and DC) are also available from the VEC as part of a cooperative agreement with these states. These data, however, are limited to the extent that they include no information about the employers. In addition, the employer mailing addresses for individuals employed in Virginia may or may not be in Virginia, if the employer also operates in other states or countries (e.g., Canada).

Currently, the VCCS provides the VEC with a file containing the SSN for every student who has enrolled in one of the 23 Virginia Community Colleges within the previous five years. The VEC then cross-references this file of SSNs with the VEC UI database and the databases from the neighboring states. All records with matching SSNs from the previous 20 quarters are selected and provided to the VCCS, where the data are mapped to SAS datasets. (Data record format Information is provided below.) This process repeats four times per year resulting in quarterly updates to the VEC UI data.

Advantages of Databases

The databases offers several advantages over other sources of employment and wage information. For example, the data is collected and maintained on most individuals employed throughout the United States (HI and AK excluded, federal and military included)). Since the data is linked to SSN, an individual's employment can be tracked despite changes in name, address, and employment anywhere as indicated above. The databases potentially make available longitudinal data on most students once they leave school, regardless of whether or not they graduated. The availability of the data requires no school staff or resources to collect or maintain.

Limitations of Data

Although the database has its advantages, it also has its limitations which must be considered when using the data.

- Farm workers, incarcerated, and self-employed are excluded
- Only employee quarterly wages and industry of employment are reported, not other employee data that might be of interest such as date of hire, occupation, hourly wages, or time worked.
- The Industry Codes categorize the business of the employer, but does not provide any indication of the role of the employee in the business.
- The employer addresses do not necessarily provide the Virginia location of an individual's employment, but rather a mailing address for the employer which could be in another state or even another country.
- The data are often not available for at least six months after initial collection.
- Students who do not provide their SSN cannot be linked to the data.

APPENDIX C: CTE ACADEMIC PLANS

Academic Plan
Diagnostic Medical Sonography (109)
Health and Information Management (141)
Emergency Medical Services (146)
Nursing (156)
Practical Nursing (157)
Surgical Technology (159)
Radiography (172)
Management (212)
Emergency Medical Services - Intermediate (221-146-03)
Emergency Medical Services - Paramedic (221-146-05)
Emergency Medical Services - Advanced (221-146-08)
Medical Administrative Support Assistant (221-152-10)
Pharmacy Technician (221-190-08)
Professional Cooking (221-242-06)
Central Services Technician (221-285-88)
Administrative Support (221-298-55)
Horticulture (221-335-01)
Web Technologies (221-352-04)
Criminal Justice (221-400-45)
Graphic Design (221-514-35)
Early Childhood Development - Infant and Toddler (221-636-05)
Early Childhood Development – Preschool (221-636-06)
Computer and Network Support Technologies (221-732-07)
Cybersecurity (221-732-09)
Culinary Arts (242)
Information Systems Technology (299)
Information Systems Cybersecurity (299-06)
Police Science (464)
Electronics and Computer Technology (981)