



Workforce Training and Education Coordinating Board

2015 Workforce Training Results

Community and Technical Colleges Professional-Technical Education

Program Details

Washington's 34 community and technical colleges offer professional technical training that provides participants with skills required for specific occupations. Community and Technical Colleges (CTC) Professional-Technical Education training covers a broad range of occupational fields and credentials, from one-year certificates to two-year technical degrees. However, it does not include participants who intend to transfer to a four-year college or university; participants who enroll in a program to raise their basic skills to a high school level; or working adults who take a few classes to improve skills for their current jobs.¹

Every year, the Workforce Board measures the performance of key workforce programs. In this report, you'll find out more about the program and who is served, the metrics used to measure performance, and how the program performed.

Participant Profile

For this 2015 report, researchers examined 31,182 CTC Professional-Technical participants who completed or left the community and technical college system.² These participants comprise the Professional-Technical cohort included in this study.³ The median length of enrollment for these participants was 16 months.

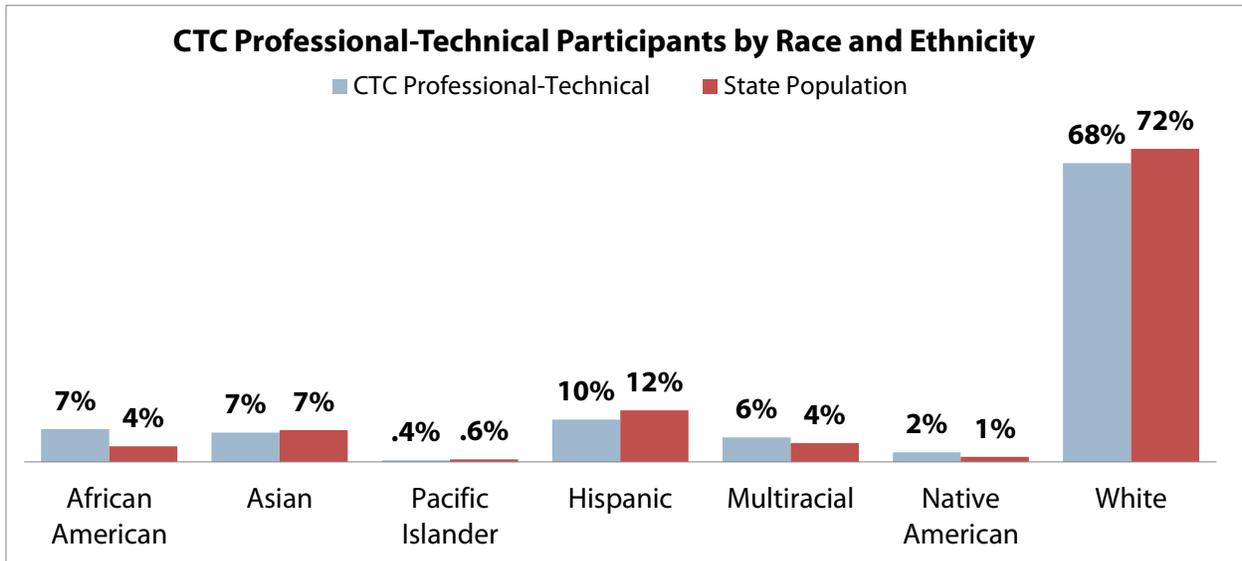
¹ While the Worker Retraining program at the community and technical colleges also provides occupational training, the results for participants who participated in this program are evaluated separately.

² CTC Professional-Technical Education participants identified themselves as vocational participants and have either enrolled for six or more vocational credits or have completed three or more vocational credits. Additionally, the participants included in this study exited their program during the academic year and did not enroll in a community or technical college for a period of one full year.

³ The 2015 Workforce Training Results reports are based on data observed as recently as 2013-2014 for individuals exiting programs during 2012-13.



Participants from racial and ethnic minority backgrounds continue to be well represented among CTC Professional-Technical participants, especially among African Americans whose participation rate was almost double their representation in the state population. Native Americans are also slightly overrepresented in comparison to their share of the state population.⁴

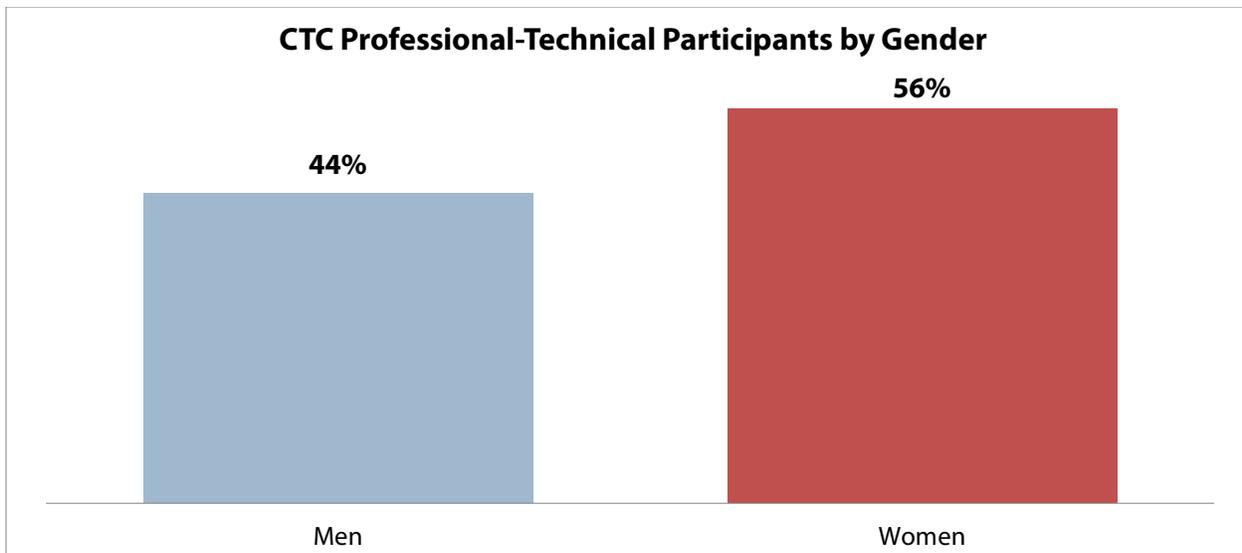


Source: Community and Technical Colleges Administrative Data. Data Linking for Outcomes Assessment (DLOA) and 2012 U.S. Census Data from the American Community Survey.

Gender differences were also examined. Among CTC Professional-Technical participants, 44 percent were men. Men and women completed their programs at nearly the same rate, 62 percent for women and 61 percent for men.

⁴In this report, unless otherwise stated, racial and ethnic minority groups are mutually exclusive; that is, an individual belongs to one group only. The groups include the following: Hispanics of any race (also referred to as Hispanics); non-Hispanic African Americans (also referred to as African Americans); non-Hispanic Asians (also referred to as Asians); non-Hispanic Pacific Islanders (also referred to as Pacific Islanders); non-Hispanic Native Americans and Alaskan Natives (also referred to as Native Americans); non-Hispanic multiracial (also referred to as multiracial); and non-Hispanic whites (also referred to as whites). According to the 2012 U.S. Census Bureau estimates for Washington from the American Community Survey, 72 percent are white; 4 percent are African American; 1 percent are Native American; 7 percent are Asian, less than 1 percent are Pacific Islander; 4 percent are multiracial; and 12 percent are Hispanic.





Source: Community and Technical Colleges Administrative Data. (DLOA)

When they enrolled, 53 percent of the participants had not previously attended college; 21 percent had attended college without receiving a credential; 12 percent had a certificate or associate’s degree; 10 percent had a baccalaureate or higher degree; and 5 percent had some other credential.

The median age in the last quarter of training was 29, with one quarter of the participants under age 23, and another quarter of the participants over age 39.

Tracking CTC Professional-Technical Progress

The Workforce Board routinely measures the performance of our state’s largest workforce programs. As a customer-focused advocate for Washington’s workers and employers, the Workforce Board strives to provide performance accountability, verifying whether worker education and training programs provide a return on investment for participants and taxpayers.

The Workforce Training Results report seeks to answer five core questions:

- Did participants get the skills they needed?
- Did participants get a job and how much were they paid?
- Were employers satisfied with the preparation workers received?
- Has the program made a difference in the participant’s success?
- Did participants and the public receive a return on their investment?



Data Comes From State Wage Files & Employer Survey

The 2015 Workforce Training Results includes information obtained from Employment Security Department wage files in Washington, Idaho, and Oregon, and federal employment records for 2013-14. Information on employer satisfaction among firms that hired new employees who recently completed a CTC Professional-Technical program was assessed through the Workforce Board's 2012 Employer Survey.

Net Impact Study Adds More Insight into Program Performance

In addition, the report includes a comprehensive Net Impact Study. Conducted every four years, this study provides a head-to-head comparison of participants and non-participants to help answer a central question: How much of a workforce participant's success in obtaining a job, or a higher wage, is due to the workforce program? By comparing program participants with similar individuals who did not participate in a workforce training program, the Net Impact Study indicates whether employment and earnings gains are due to the workforce program, or if workers could have made this progress on their own. This research also allows for a more detailed analysis as to whether the participant and the public received a return on their investment in the program.

Did Participants Get the Skills They Needed?

As a measure of whether participants received the skills they needed, this study tracks the credentials and degrees earned by participants.

Among CTC Professional-Technical participants leaving programs:

- 24 percent received an associate's degree.
- 22 percent received a vocational certificate.
- 13 percent were deemed ready for work because they completed 45 or more credits.
- 1 percent completed a non-credit vocational program that led to a certificate.

Taken together, 61 percent of participants earned a credential.⁵

Turn to page 20 for the Net Impact Study. Conducted every four years, this in-depth report adds extra value to 2015 Workforce Training Results. The study provides a side-by-side comparison of participants vs. similar non-participants, answering the question of whether the program is making a difference.

⁵ Upon exiting a college, the system determines whether the participant is considered to have completed the program. The percentages do not sum to 59 percent due to rounding.



Did Participants Have a Job and How Much Were They Paid?

To find out whether participants obtained jobs and how much they earned, participant records were matched with Employment Security Department wage files from Washington and neighboring states.⁶ The study looks at employment and earnings three calendar quarters (seven to nine months) after the participant left the CTC Professional-Technical program. The table below displays the employment and earnings of participants who exited the program during the prior year. Over 65 percent of the CTC Professional-Technical participants were employed. Of those who were working, 61 percent were employed full time. The median hourly wage was \$15.80; this is \$6.48 per hour more than Washington's minimum wage of \$9.32 an hour in 2014. However, there is considerable variation in wages. While one quarter earned \$22.51 an hour, another quarter had jobs that paid less than \$11.98 an hour. Median annualized earnings are \$27,220, up a bit over the 2014 report.

2014 Employment and Earnings for Community and Technical College Professional-Technical Education Participants

Performance Measure	Results
Employment Rate* (State Records)	66%
Employment Rate (Completers)	71%
Full-Time Employment **	61%
Median Hours Worked Quarterly	442 hours
Median Hourly Wage***	\$15.80
Median Annualized Earnings***	\$27,220
Median Annualized Earnings (Completers)	\$29,817

* These figures apply to those with employment reported to state employment agencies six to nine months after leaving the program. Rate does not include self-employment, employment outside the Northwest or military service and thus understates total employment by approximately 10 percent.

** Full-time employment averages 30 or more hours per week.

*** Earnings/wages expressed in first quarter 2014 dollars in order to account for inflation.

⁶ These files contain quarterly earnings and hours-worked information on those individuals with employment reported for unemployment insurance (UI) benefits purposes (approximately 90 percent of in-state employment, with self-employment, active duty military, and those working for religious nonprofit organizations being the major groups of employers not included).



Earnings of CTC Professional-Technical Participants

The following table shows employment and earnings information over the course of five study periods. Performance results are shown for *all* CTC Professional-Technical participants and broken down further to focus on program completers.

Employment and Earnings Trends for Community and Technical College Professional-Technical Education Participants

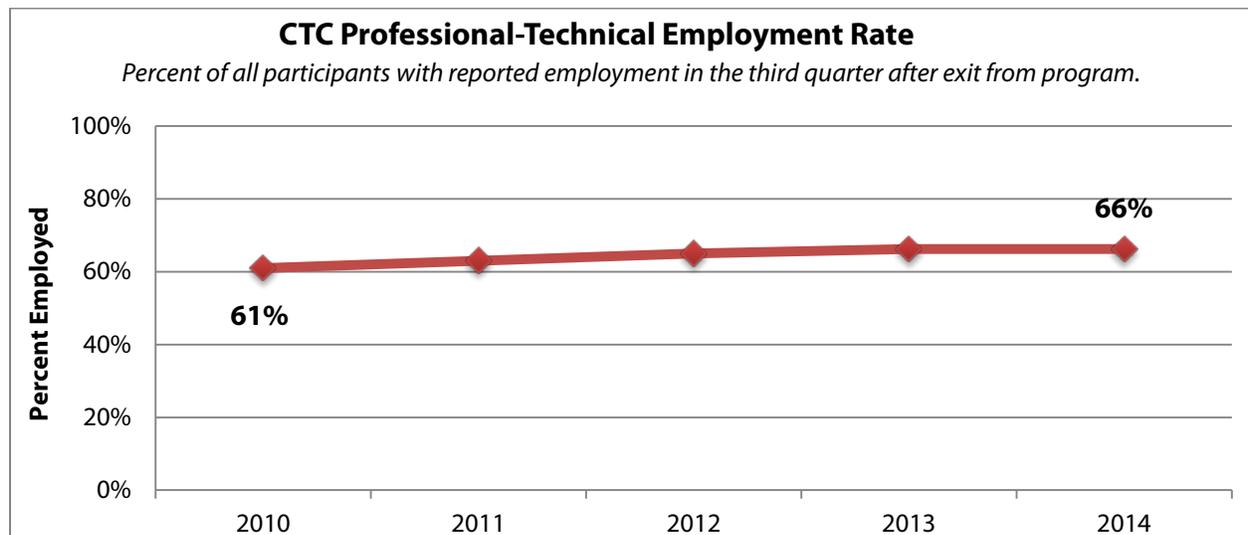
Performance Measure	2010		2011		2012		2013		2014	
	All	Comp.								
Employment Rate* (State Records)	61%	65%	63%	69%	65%	70%	66%	70%	66%	71%
Full-Time Employment**	59%	60%	54%	56%	62%	64%	60%	66%	61%	69%
Median Quarterly Hours	429	442	416	429	429	442	416	442	442	442
Median Hourly Wage***	\$15.75	\$16.64	\$15.45	\$16.25	\$15.23	\$16.12	\$15.67	\$16.45	\$15.80	\$16.59
Median Annualized Earnings***	\$26,580	\$28,785	\$25,269	\$27,663	\$26,448	\$29,219	\$26,360	\$28,812	\$27,220	\$29,817

Source: Matches of Community and Technical College Administrative data with employment wage files.

*These figures apply to those with employment reported to the state's Employment Security Department six to nine months after leaving program for all CTC Professional-Technical participants, and are not limited to those who completed a program. Rate does not include self-employment, employment outside the Northwest or military service and thus understates total employment by approximately 10 percent.

**Full-time employment averages 30 or more hours per week.

***Earnings/wages expressed in first quarter 2014 dollars in order to account for inflation.

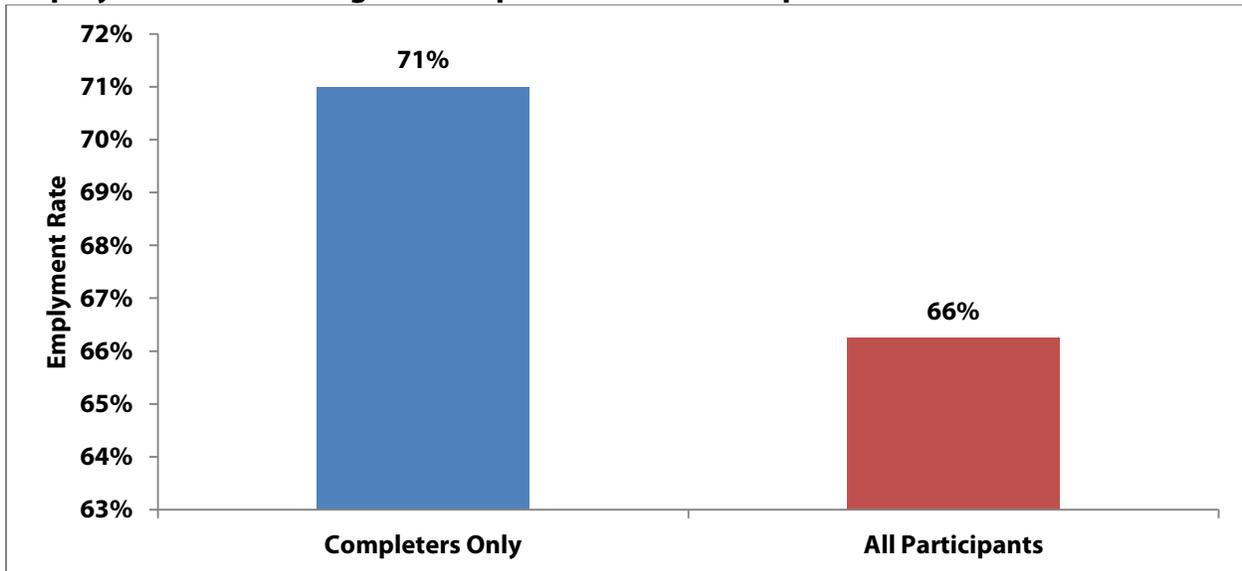


Note: Rate does not include self-employment, employment outside the Northwest or military service and thus understates total employment by approximately 10 percent.

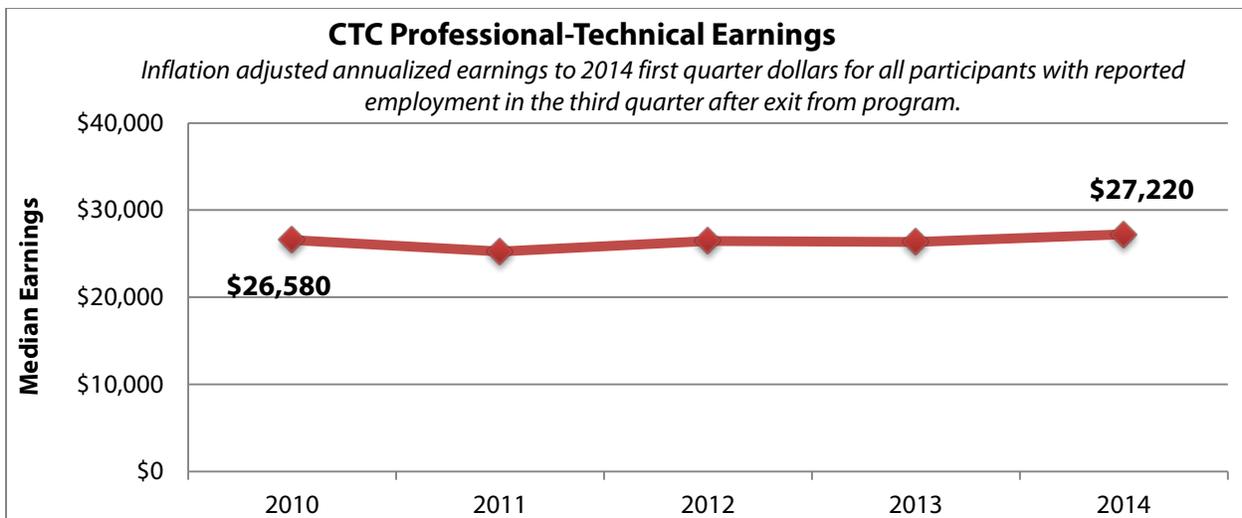


As can be seen in the table above, employment among all CTC Professional-Technical participants has increased at a moderate pace since 2011. Program completers fared better than participants as a whole. Completers were five percent more likely to be employed (71 percent vs. 66 percent).

Employment Rate of Program Completers vs. All Participants



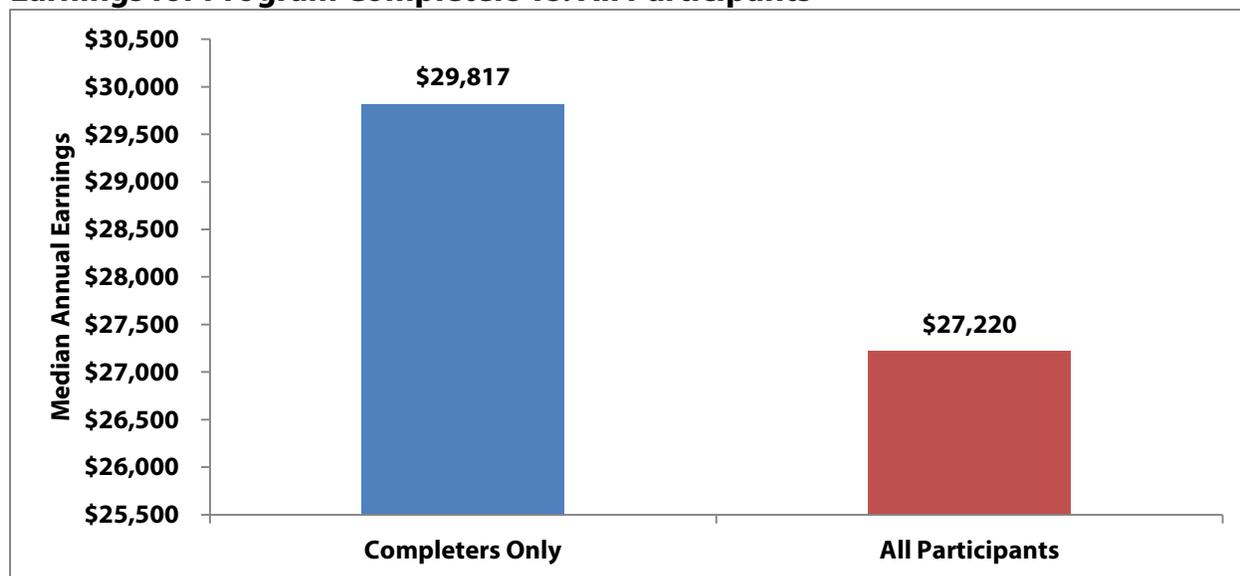
In terms of earnings, CTC Professional-Technical participants have seen slight increases from \$26,580 in 2011 to \$27,220 in 2014. This amounts to an annual average growth rate of less than one percent. However, earnings were 10 percent higher for those that completed the program, compared to the overall participant earnings.



Note: This chart shows annualized earnings in 2014 first quarter dollars to account for inflation.



Earnings for Program Completers vs. All Participants



Source: 2015 Workforce Training Results

Completion is goal of Student Achievement Initiative

Between 2007 and 2012, Washington's community and technical colleges saw a 46 percent increase in the number of degrees and certificates awarded. This boost in completed credentials was accomplished in the midst of historic budget cuts to higher education, and is due in part because of the Student Achievement Initiative. Launched in 2007, the initiative rewards community and technical colleges for moving students further and faster in college. Colleges earn a portion of their funding based on results, not just enrollments. They earn points and funding when students reach key academic momentum points, such as finishing college-level math, completing a first year of college, and earning a degree or certificate.

In the 2013-14 school year, the Student Achievement Initiative began a new approach that awards more points for basic skills students who reach academic milestones (by recognizing their more challenging educational journey); provides points when students reach the highest level of pre-college (remedial classes); adds another momentum point for 45 credits in a professional-technical field or university transfer, and rewards schools when students show steady progress from year to year.

CTC Professional-Technical Participant Employment by Industry

Employment is concentrated in the services industry followed by retail trade, manufacturing, and public administration. About 60 percent of CTC employment was found in the services industry, where healthcare accounted for the largest share.



Industries	
59.6%	Services (see breakout)
11.6%	Retail Trade (see breakout)
7.7%	Manufacturing (see breakout)
6.4%	Public Administration
3.8%	Construction
2.9%	Financial Services
2.5%	Wholesale Trade
2.4%	Transportation and Warehousing and Utilities
1.1%	Information
0.9%	Natural Resources and Mining
Breakout of Services Industry	
21.7%	Health Care
8.7%	Accommodation and Food Services
8.5%	Admin., Support, Waste Management, and Remediation Services
6.4%	Social Assistance
4.7%	Education Services
4.4%	Professional, Scientific, and Technical Services
3.4%	All Other Services
2.0%	Arts, Entertainment, and Recreation
Breakout of Retail Trades Industry	
3.0%	Department and Warehouse Stores
1.8%	Vehicle Sales
1.8%	Food and Liquor Stores
1.3%	Clothing and Accessories Stores
1.1%	Hardware, Garden and Farm Supplies
0.7%	Books, Music and Hobbies Sales
0.7%	Health Care and Beauty Products
0.5%	Gasoline Stations
0.4%	Electronics and Appliance Stores
0.3%	Home Furnishings Sales
1.0%	Miscellaneous Store Retailers
Breakout of Manufacturing Industry	
2.8%	All Other Manufacturing
2.7%	Aerospace
0.9%	Fabricated Metal Products
0.9%	Food & Beverage
0.4%	Wood & Paper Products

Source: Matches with Employment Security Department data in third quarter after exiting program. Industry groups based on North American Industry Classification System (NAICS) codes.



Relationship of Training to Employment

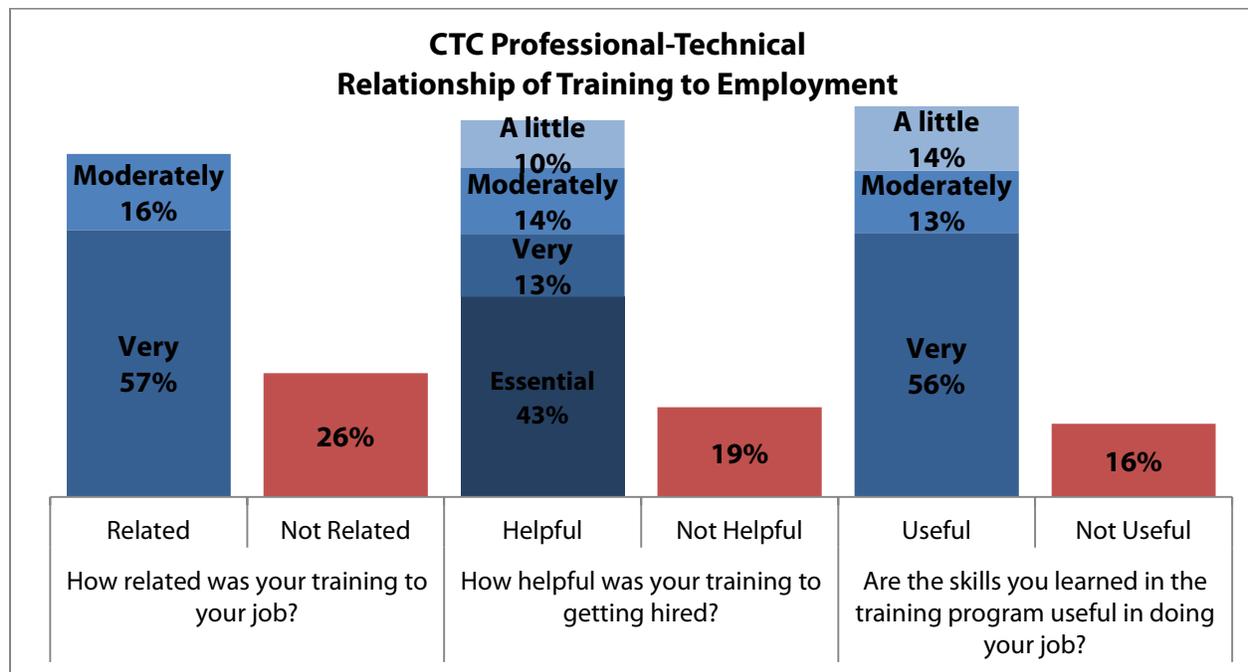
In 2013, the Workforce Board surveyed CTC Professional-Technical Education Participants who had left their program in 2011-12. The survey provided data on employment and participant satisfaction with the training. The survey was conducted by telephone and was completed by 225 participants.

To measure the extent to which a participant’s education program and training related to employment, we asked participants three questions:

1. How related was the program to their job?
2. How important was the training in getting hired?
3. Are the skills they learned useful in their job?

Asking about the relationship between training and employment in different ways can produce more complete information. For example, some participants said their training was not related to their job, but nevertheless, found the skills acquired were useful on the job.

Among Community and Technical College Professional-Technical participants employed six to nine months after leaving a program, 57 percent said their training was “very related” to their job. A further 16 percent reported the training was “somewhat related” to their job. Only 26 percent said that the training was “not related at all” to their job. In 2011, employed participants reported slightly higher rates of training related to employment (75 percent reported training was related to their job versus 73 percent this year).



Source: Workforce Board’s Participant Satisfaction Survey 2013.

Participants interviewed in 2011 also indicated the training was helpful to them in getting their job. Of those participants, 43 percent indicated their training was an “essential



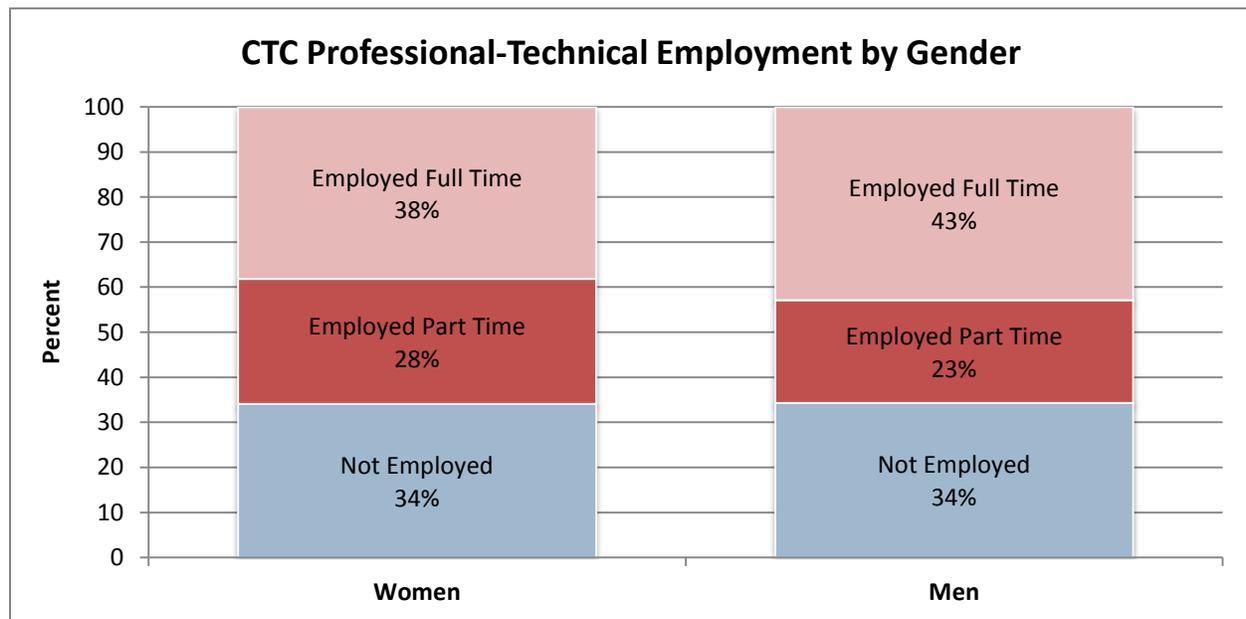
requirement,” another 13 percent indicated it was “very important,” and 14 percent reported it was “moderately important.” Ten percent said it was “a little helpful.” Only 19 percent indicated their training was “not important at all” to getting their job.

Most participants said the skills they learned in their training program were useful in doing their job. Some 56 percent of participants indicated the skills were “very useful,” 13 percent said “moderately useful,” and 14 percent “a little useful.” The remaining 16 percent of participants who were employed indicated the skills were “not useful at all.”

When combining two of the questions about the program’s relationship to the job and about whether the skills acquired were helpful, a small percentage of participants answer negatively to both. Just 11 percent (down from 14 percent in 2011) of participants employed the third quarter after exit said the training they received was *neither* helpful in their job nor related to the job they obtained.

Wages and Employment Results Vary by Population

Wage and employment results may vary by gender, race and ethnicity, and disability. Female participants had an overall employment rate of 66 percent (38 percent full time and 28 percent part time), and were employed at the same overall rate as men. However, men were more likely to be employed full time than women (43 percent vs. 38 percent).



Source: Matches with Community and Technical Colleges Administrative Data and Employment Security Department data.

Among employed participants, women’s median annual earnings were \$25,486, or 85 percent of men’s (\$29,833). Women’s median hourly wages were \$15.45, or 96 percent of men’s hourly wages (\$16.12). An earnings gap persists; one possible reason is that women and men tend to enroll in different types of programs, which lead to jobs that pay different amounts.

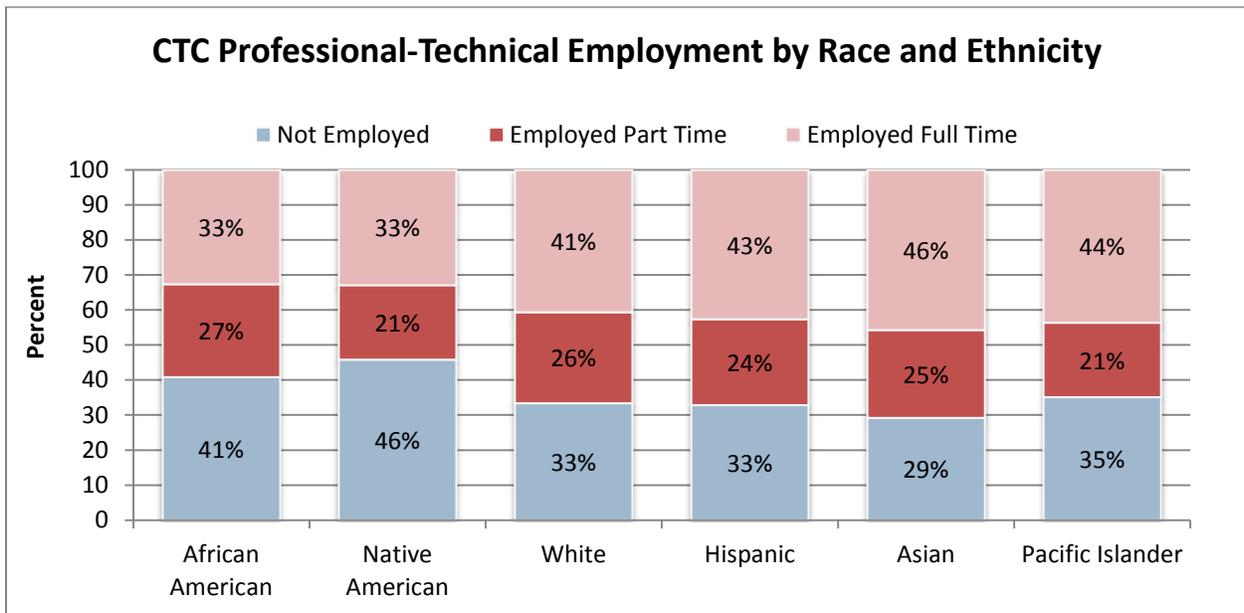


The service industry, for example, has a heavily female workforce. Some 72 percent of women CTC Professional-Technical participants obtained work in the service industry compared to 43 percent of men. Conversely, 13 percent of men obtained work in manufacturing while two percent of women obtained manufacturing jobs. A higher percentage of male workers than female workers were found in retail trades. Within retail, men were more likely to work in such jobs as vehicle sales while women were more likely to work in clothing and health care and beauty products stores.

Race and Ethnicity Play Roles

Native Americans were the least likely racial/ethnic group to be employed in the third quarter after leaving their programs with an overall employment rate of 54 percent (33 percent worked full time and 21 percent part time). This compares to employment rates of 71 percent for Asians, 67 percent for Hispanics and whites, 65 percent for Pacific Islanders, and 60 percent for African Americans. Those employed full time was highest for Asians (46 percent), followed by Pacific Islanders (44 percent), then Hispanics (43 percent), and whites (41 percent). The lowest full-time employment was true for both African Americans and Native Americans at 33 percent.

Of those employed, the median hourly wages were highest Asians at \$16.75, followed by Native Americans (\$16.19), whites (\$16.00), Pacific Islanders (\$14.71), Hispanics (\$14.03) and African Americans (\$13.78). Asians had the highest median annual earnings (\$30,487), followed by whites (\$27,850) and Pacific Islanders (\$27,014). Native Americans (\$26,720), Hispanics (\$25,011), and African Americans (\$22,888), all had lower median annual earnings.

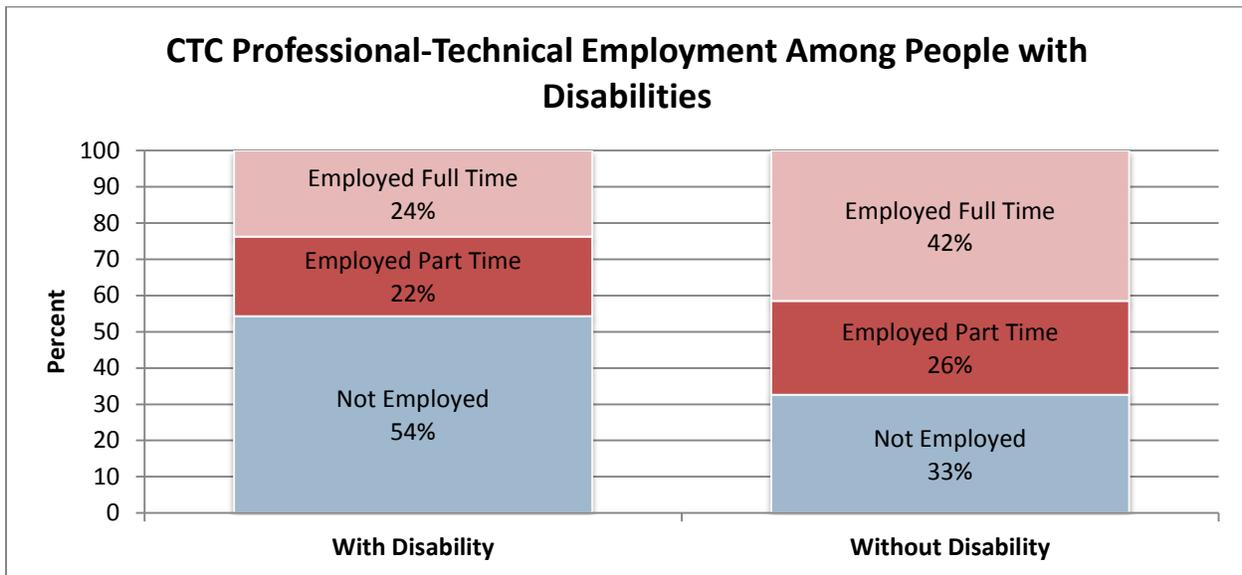


Source: Matches with Community and Technical Colleges Administrative Data and Employment Security Department data.



Disability Impacts Employment and Earnings

Employment outcomes and earnings also varied by disability status. College records indicate that 7 percent of the participants included in this study had a disability. Participants with a disability were employed at an overall rate of 46 percent (24 percent full time and 22 percent part time), which was a much lower rate of employment than those without a disability (68 percent). This is slightly higher than the prior year, in which 44 percent of disabled participants were employed, compared to 67 percent of the non-disabled. Disabled participants were also less likely to work full time (24 percent versus 42 percent for non-disabled). Among those working, the median hourly wage rate of those with a disability (\$14.05) was 89 percent of those without a disability (\$15.86), and their median annual earnings (\$21,518) were 78 percent of those with no reported disability (\$27,575).



Source: Matches with Community and Technical Colleges Administrative Data and Employment Security Department data.

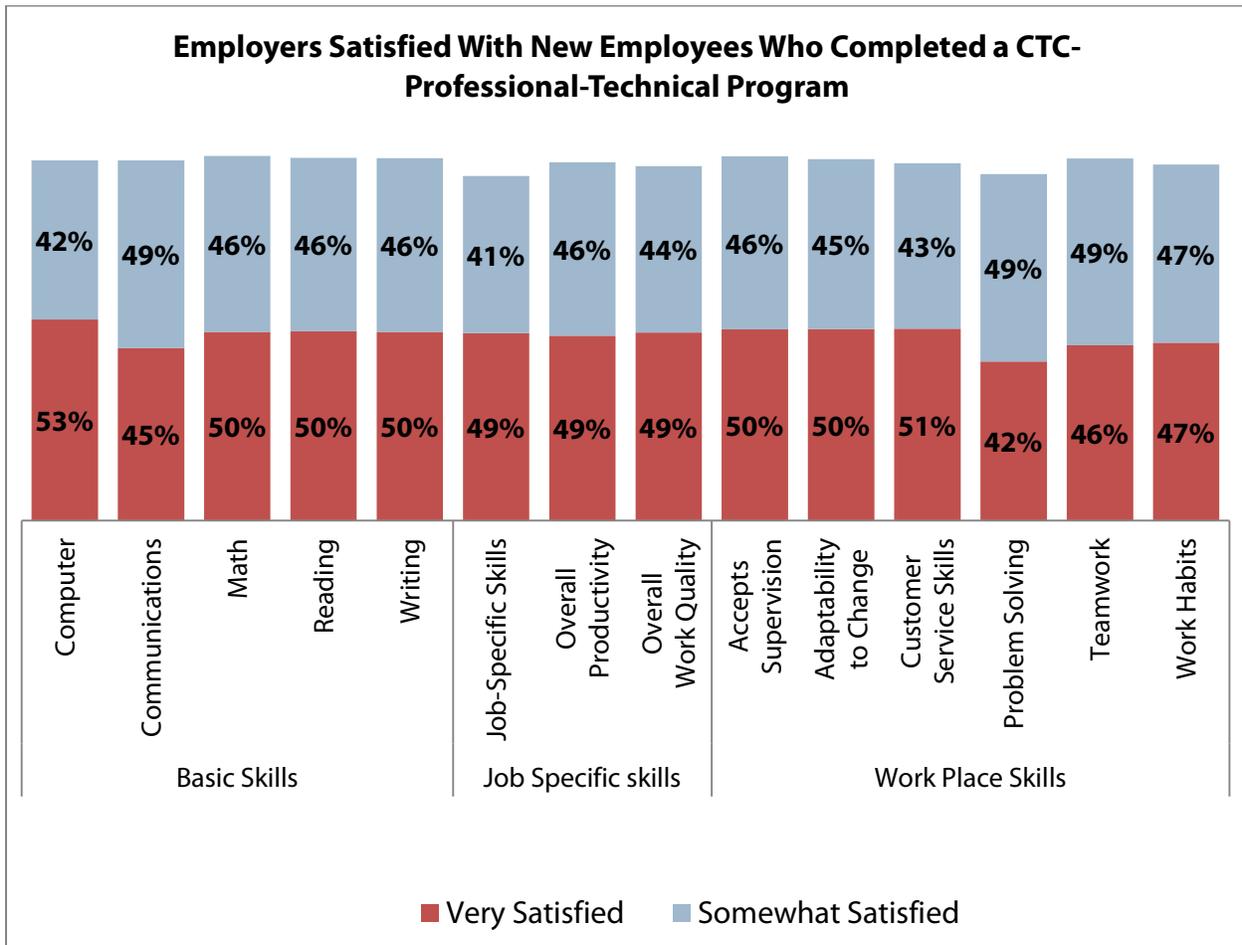
Were Employers Satisfied with the Preparation Workers Received?

The Workforce Board’s Employer Survey, administered during 2012, asked firms to evaluate new employees who had recently completed a CTC Professional-Technical program. Some 93 percent of employers said they were either “somewhat satisfied” or “very satisfied” with the overall work quality of these new employees.

Employer satisfaction is broken down into three categories: Basic Skills, Job Skills, and Work Place Skills. Basic skills refer to reading, writing, math, communication and computer skills. Job skills refer to skills specific to the job, as well as overall work quality and productivity. Work place skills refer to the skills necessary to get along in the workplace such as the ability to accept supervision, the ability to adapt to changes in duties and responsibilities, teamwork, customer service, problem solving or critical thinking skills, and having positive work habits and attitudes.



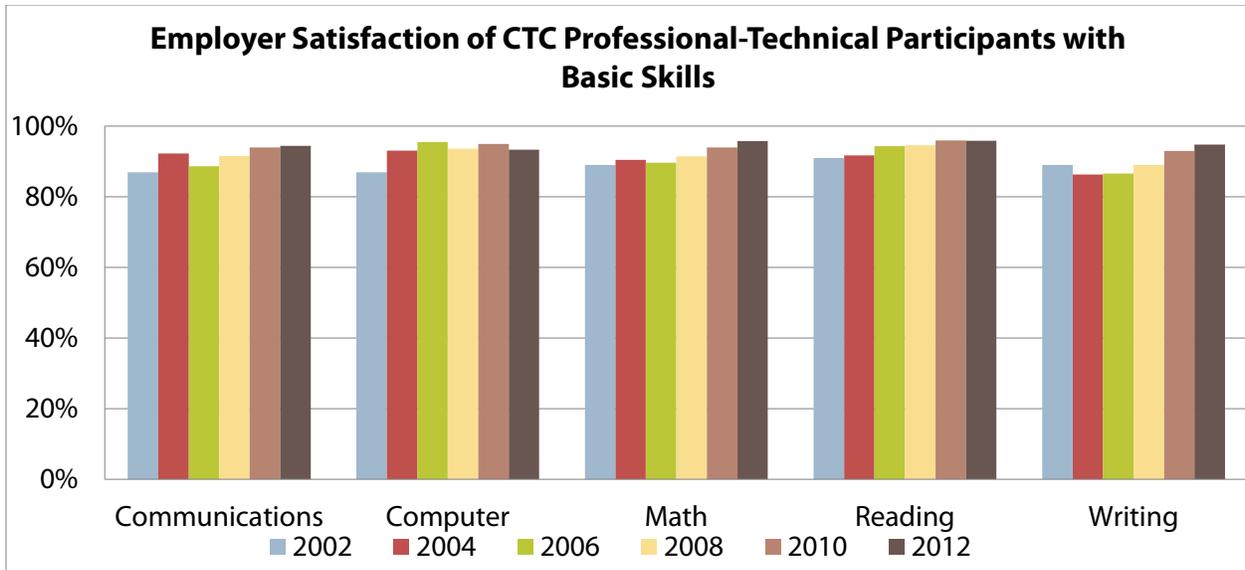
In 2012, employer satisfaction was consistently high across skill types, with just slightly lower satisfaction with new employees' problem-solving and communication skills.



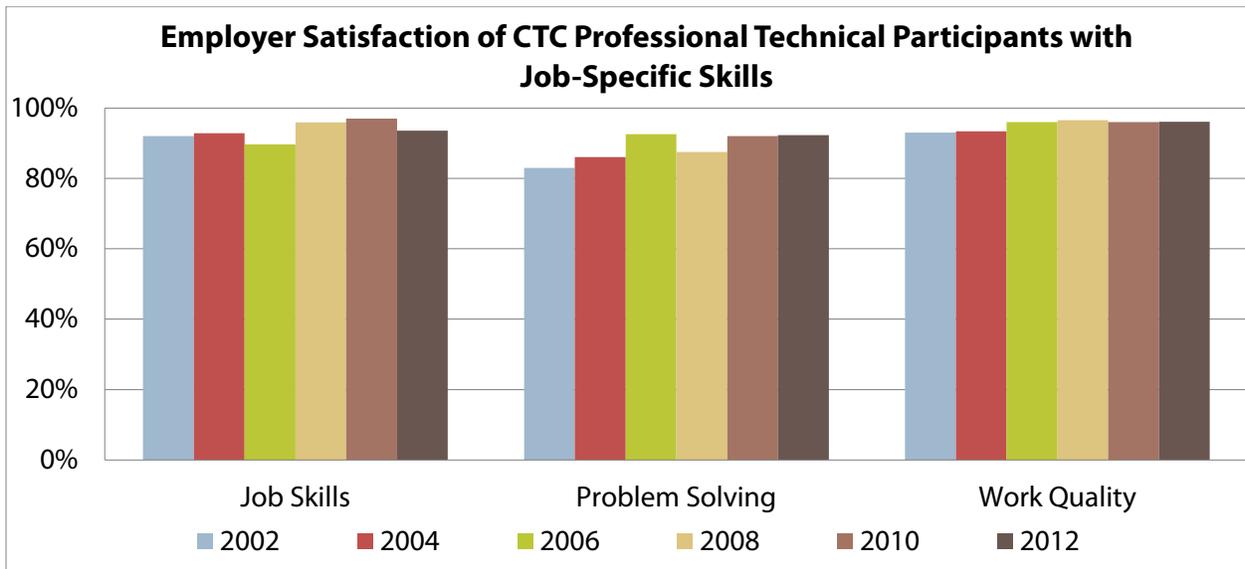
Source: Workforce Board Employer Survey conducted in 2012.

Overall, employer satisfaction has increased in most categories over the last decade, and has remained stable since the last survey. The following three charts show the trends in satisfaction of employers with new employees who recently completed a CTC Professional-Technical program.



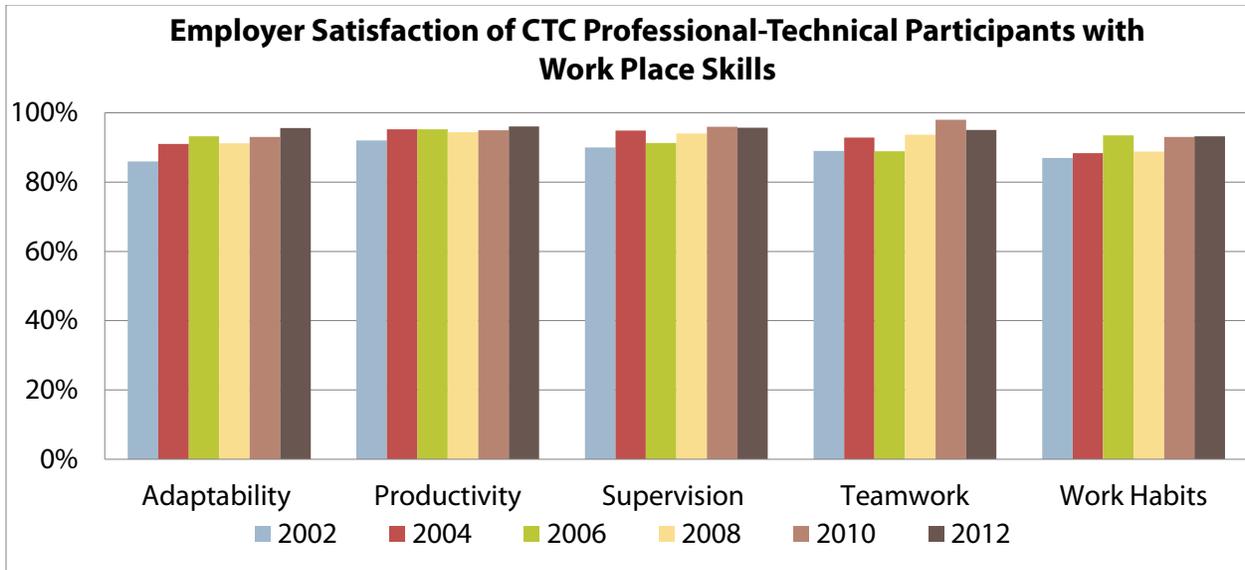


Source: Workforce Board's biennial Employer Surveys from 2002 through 2012.



Source: Workforce Board's biennial Employer Surveys from 2002 through 2012.



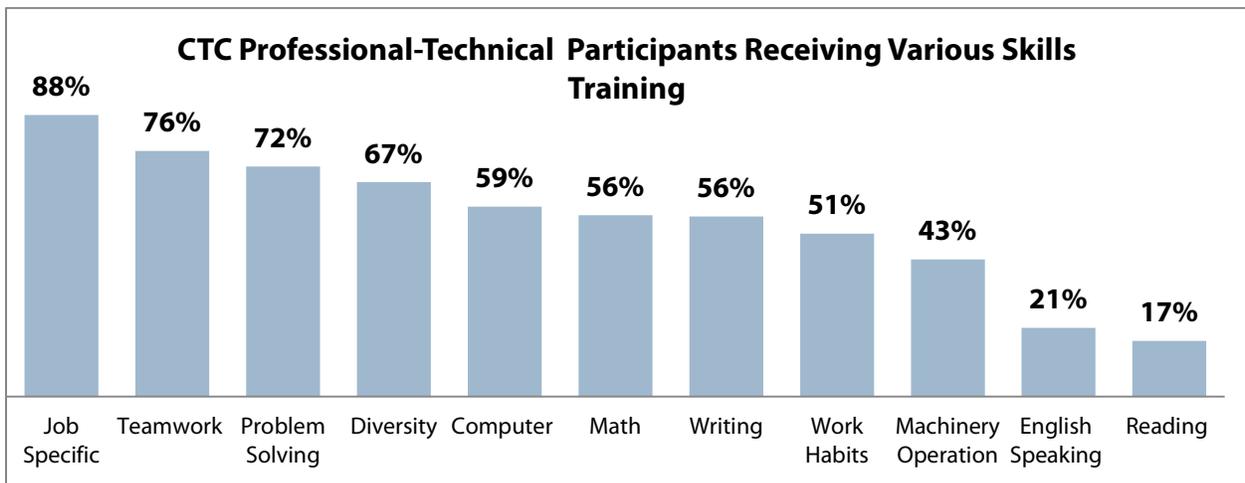


Source: Workforce Board's biennial Employer Surveys from 2002 through 2012.

Competency Gains

The primary goal of workforce training and education is to provide individuals with the skills and abilities required in the workplace. CTC Professional-Technical participants appear to agree: 89 percent of the participants surveyed for the 2013 Workforce Board Participant Survey indicated that they enrolled in college to learn skills for a new job, which is slightly higher than participants in the previous study. The second most common reason (86 percent) for a participant's decision to enroll was to either obtain or finish a degree or certificate.

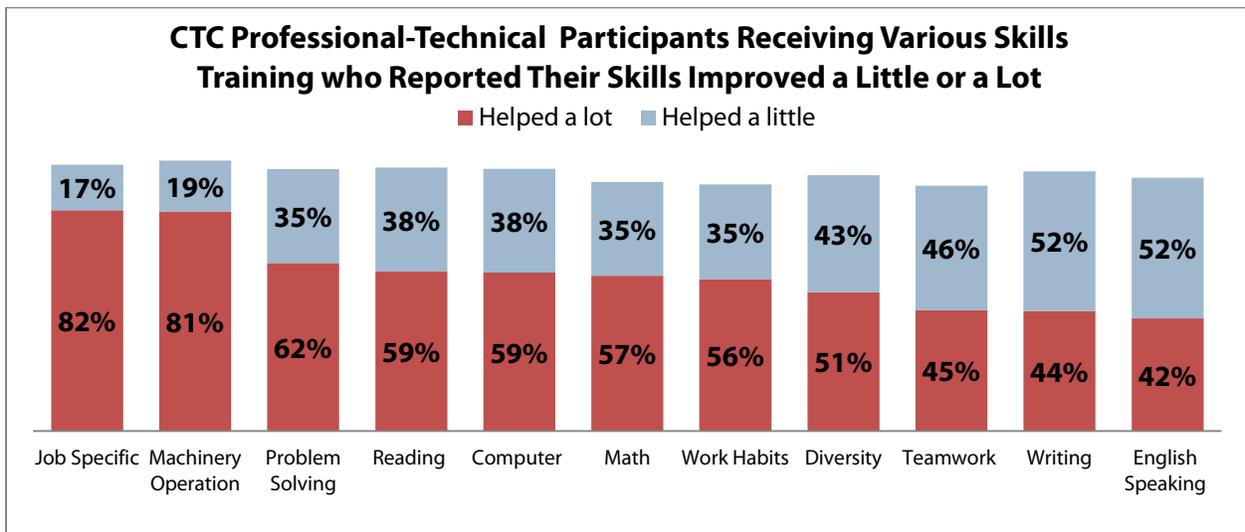
In addition to learning job-specific skills, CTC Professional-Technical participants also receive other types of training. Over 76 percent received training in teamwork, and 72 percent received training in problem solving. Job-specific (92 percent in 2011) and reading (20 percent in 2011) were the only skills that saw a decrease in numbers between the 2013 and 2011 surveys.



Source: Workforce Board's Participant Satisfaction Survey 2013.



As in the previous study, most participants reported their skills improved as a result of training, and higher percentages reported substantial improvements in their job-specific skills than in their workplace or basic skills. The percentage of participants receiving various skills showed little change for the most part between 2001 and 2013. The only strong deviations between surveys were teamwork (decreased 5 percentage points), English speaking (decreased 6 percentage points), reading (increased 6 percentage points), and math (increased 7 percentage points).

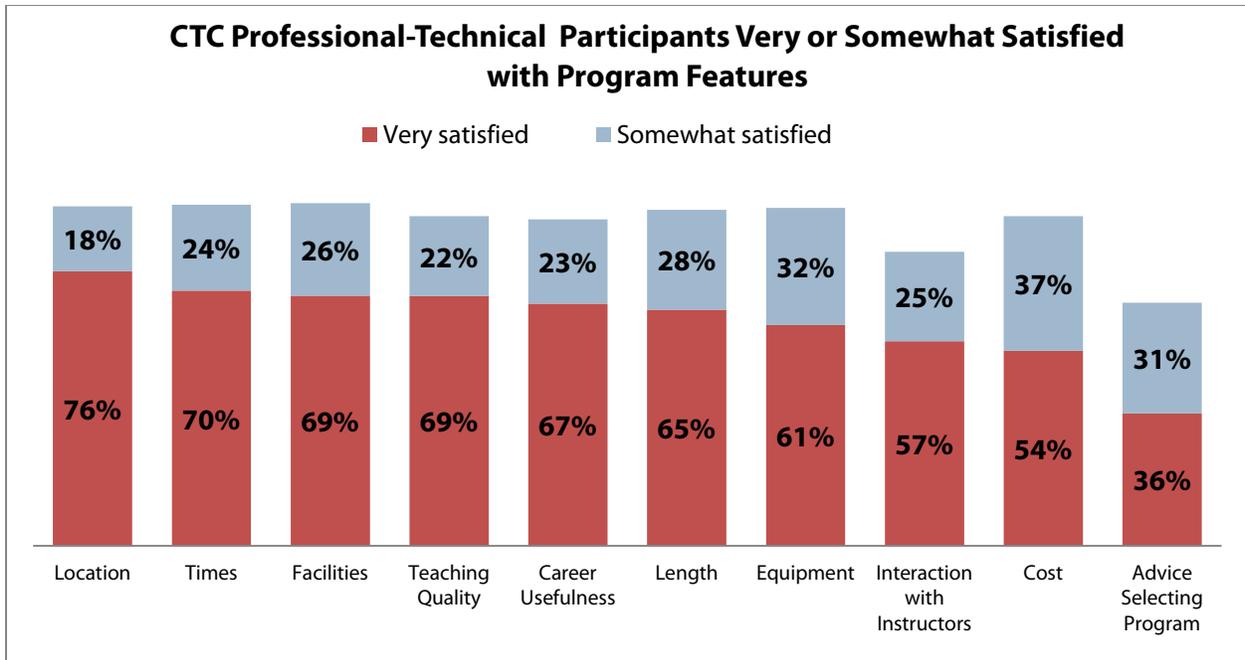


Source: Workforce Board's Participant Satisfaction Survey 2013.

Participant Satisfaction

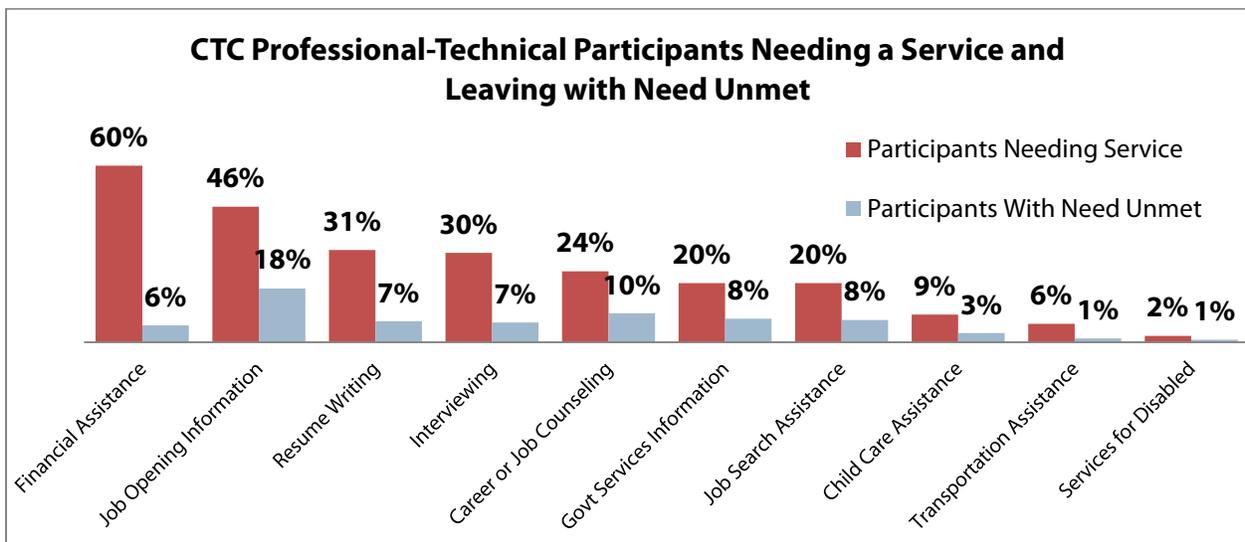
In the 2013 Workforce Board Participant Satisfaction Survey, participants expressed high levels of satisfaction, similar to previous studies. Some 94 percent of participants reported they had met their educational objectives, and 93 percent reported they were “very satisfied” or “somewhat satisfied” with the program as a whole. Participants tended to be “very satisfied” with various features of their programs including location, times, facilities, quality of teaching, and usefulness of the program to their career. They were less satisfied with advice on selecting a training program.





Source: Workforce Board's Participant Satisfaction Survey 2013.

Similar to previous studies, participants indicated financial assistance and information about job openings as the support services they most needed while enrolled. Fewer participants needed transportation or child care assistance. Participants tended to receive the support services they needed; the exception continues to be information about job openings. The past two surveys have shown similarly high levels reporting leaving the program with an unmet need in this area.⁷

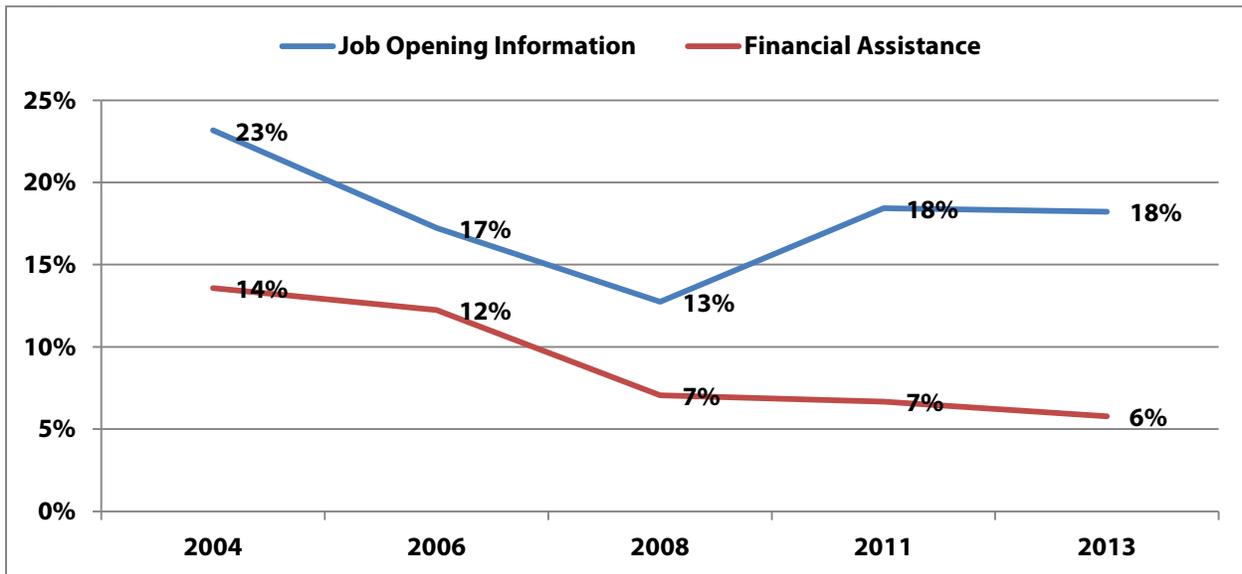


Source: Workforce Board's Participant Satisfaction Survey 2013.

⁷ Unmet need refers to cases where the student reports that either they did not receive the required service or what was provided did not meet their needs.

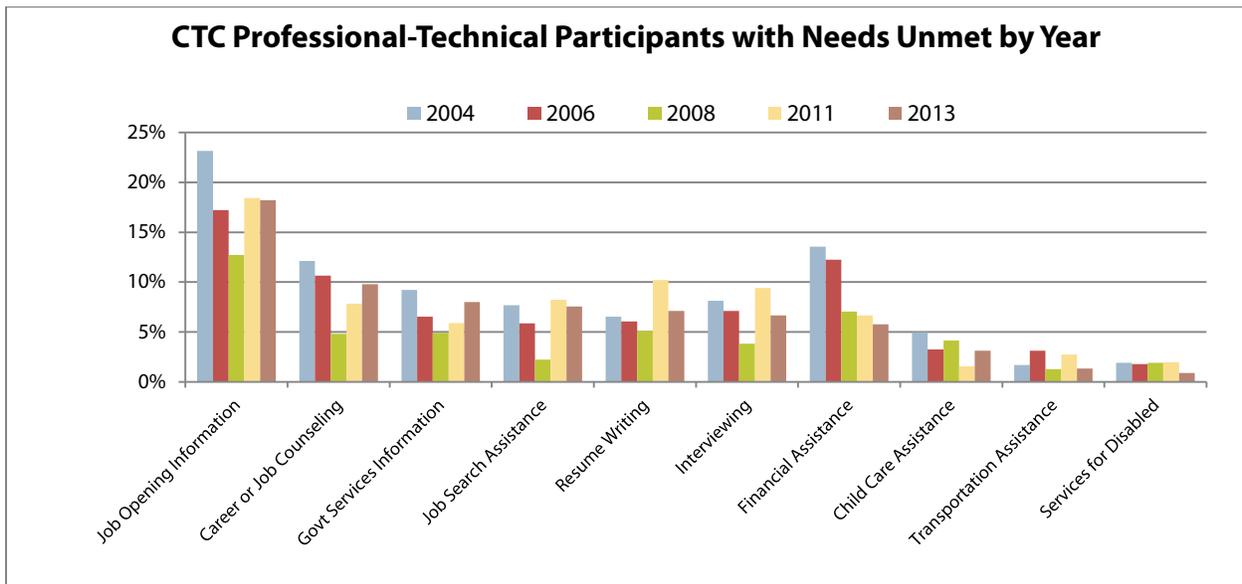


Unmet Need for Job Opening Information and Financial Assistance 2004-2013



Source: Workforce Board's Participant Satisfaction Survey 2004-2013.

After a nearly a decade of declines in unmet needs, the percentage of participants reporting that they left the program with an unmet need has increased in about half the categories. The largest jumps in unmet need were in job opening information, which fell 6 percentage points between 2004 and 2008 before rising 5 points by 2011. The financial assistance unmet need fell by 8 percentage points between 2004 and 2013.



Source: Workforce Board's Participant Satisfaction Surveys 2004-2013.



Net Impact – Did the Program Make a Difference in Participant Success?

Every four years, the Workforce Training and Education Coordinating Board conducts a net impact analysis of workforce development programs. This detailed study compares participants and non-participants. The net impact part of this study attempts to measure whether the program made a difference in the participant’s success. Washington is the only state to periodically conduct rigorous net impact evaluations of its workforce programs.

CTC Professional-Technical training has strong positive net impacts on employment, wages, hours worked, and earnings. Training substantially increases the lifetime earnings of participants.

The net impact analysis was conducted by the W.E. Upjohn Institute for Employment Research (Upjohn), a national leader in evaluating training programs. To do the analysis, Upjohn studied program participants to see what results they achieved and compared these results with a control group. Individuals who participated in a Community or Technical College Professional-Technical Education program were compared to individuals who had similar demographic characteristics, but who did not participate in any of the programs included in the study. The comparison group members were selected from among those who registered with WorkSource, Washington’s one-stop career center system.

The most recent net impact analyses examined experiences of participants who left the CTC Professional-Technical Training program through 2009. The short-term impact (Program Year 2007-08) was observed in 2008-09, while the long-term impact (Program Year 2005-06) was observed from 2006-07 through 2008-09.

Impact on Employment and Earnings: Participants vs. Control Group

Community and Technical College Professional-Technical Education	Short-term [^]	Long-term [^]
Net Employment Impact*	6.6 percentage points	10.1 percentage points
Net Hourly Wage Impact**	\$3.30	\$3.49
Net Quarterly Hours Impact	59.8	59.5
Net Annualized Earnings Impact**	\$8,892	\$9,467

[^]Short-term is three quarters after program exit; Long-term is average across three years since program exit.

*Percentages listed are employment percentage points above those of the control group of non-participants.

**Wages and earnings, expressed in first quarter 2014 dollars, represent the average difference between CTC Professional-Technical participants who got jobs and those in the control group who were employed.



As can be seen above, Community and Technical College Professional-Technical Education participants fared better in both the short- and long-term in employment, hourly wages, hours worked and annualized earnings than those with similar demographic characteristics who did not participate in a workforce program. These net gains hold up and even increased over time.

Costs and Benefits

The cost-benefit analysis estimates the value of the net impact on earnings, employee benefits (estimated at 25 percent of earnings), UI benefits, and certain taxes.⁸ Program costs include both direct program costs and support payments borne by taxpayers and the tuition and foregone earnings borne by program participants.

Benefits and costs are calculated for both the observed period of time and based upon a statistical model that estimated the benefits and costs out to age 65. In order to compare benefits and costs in terms of net present values, post-program benefits and costs are discounted by 3 percent per year and all figures are stated in 2014 Q1 dollars to control for inflation. The benefits and costs presented here are based on impacts estimated for students leaving programs in 2005-2006 (observed from 2006-07 through 2008-09), because a longer-term follow-up is required for this analysis.

⁸ Upjohn estimated the impact of the net change in earnings on Social Security, Medicare, federal income, and state sales taxes.



Participant and Public Benefits and Costs per Participant in Community and Technical Colleges Professional-Technical Programs

Benefit/Cost	First 2.5 years		Lifetime (until 65)		Sum of Costs and Benefits
	Participant	Public	Participant	Public	
Benefits					
Earnings	\$16,125	\$0	\$147,390	\$0	
Fringe Benefits	\$4,031	\$0	\$36,847	\$0	
Taxes	-\$3,330	\$3,330	-\$30,436	\$30,436	
Transfers					
UI	-\$1,042	\$1,042	-\$942	\$942	
Costs					
Foregone net earnings	-\$3,395	-\$671	-\$3,395	-\$671	
Program costs	-\$5,565	-\$11,150	-\$5,565	-\$11,150	
Benefits	\$15,783	\$4,372	\$152,859	\$31,378	
Costs	-\$8,960	-\$11,821	-\$8,960	-\$11,821	
Total (Net)	\$6,823	-\$7,448	\$143,899	\$19,557	\$163,456

Note: Benefits and costs are expressed in 2014 first quarter dollars.

For each student in CTC Professional-Technical Education, the public (taxpayer) cost is \$11,150 over the length of their enrollment, and the student cost is \$5,565 in tuition and \$3,395 in foregone earnings while training. During the first two and one-half years after leaving college, the average student will gain \$16,125 in earnings. During the course of working life to age 65, the average student will gain about \$143,995 in net earnings (earnings minus foregone earnings) and about \$36,847 in employee benefits. These are net gains compared to the earnings of similar individuals who did not receive the training. Including program costs and the net impacts on taxes and unemployment insurance benefits, the total net benefit per participant is \$143,899.

Projected participant net benefits to age 65 outweigh public costs invested in college training by a ratio of about \$13 to 1, or \$143,899 to \$11,150.

From the time of leaving training to age 65, the public is forecasted to gain about \$30,436 per participant in net additional Social Security, Medicare, federal income, and state sales taxes and to save \$1,042 in UI benefits—far greater than the direct cost of college training. The estimated lifetime net benefit to taxpayers is \$19,557 per participant.

Projected taxpayer net benefits to age 65 outweigh public costs invested in college training by a ratio of \$3 to 1, or \$31,378 to \$11,150.



Summary, Areas for Improvement, and Further Research

Community and Technical Colleges (CTC) Professional-Technical Education training covers a broad range of occupational fields and credentials, from one-year certificates to two-year technical degrees.

While the length of time spent in the program (the median was 16 months) was relatively short, nearly two-thirds of participants earned a credential. In addition, it was found that Professional-Technical education has substantial positive net impacts on participant employment and earnings and returns more revenue to taxpayers than the program costs (by a ratio of about 3 to 1). Employer and participant satisfaction are very high. Participant employment rates are up by 5 percentage points from the low point in 2010. Annual earnings however, have been relatively flat over the last several years. However, those earnings were 10 percent higher for those that completed training compared to the group as a whole.

There are some areas to focus on for improvement. Participant support services needs in some cases were not met, especially information on job openings, career counseling, and job search assistance. This likely reflects reductions in these services due to budget cuts. Also, the breakdown of results by subpopulations reveals the greatest disparities in labor market outcomes for students with disabilities. The employment rate for people with a disability is 22 percentage points lower than for people without a disability. The annual earnings for people with a disability are 78 percent of the earnings of those with no reported disability. Enhancing support services, especially services related to post-program employment and services for students with a disability are areas for improvement.

