

Secondary Career and Technical Education (CTE)

Program Details

Secondary Career and Technical Education (CTE) serves high school-age youth in approximately 238 school districts and 11 Skills Centers throughout the state. CTE is a planned program of courses and learning experiences that begin with the exploration of career options, supports basic academic and life skills, and enables achievement of high academic standards, leadership, options for employment preparation, and advanced and continuing education.

Every two years, 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.

Instructional programs are organized within the following 16 career clusters:

- Agriculture, Food and Natural Resources
- Architecture and Construction
- Arts, AV Technology and Communications
- Business, Management and Administration
- Education and Training
- Finance
- Government and Public Administration
- Health Science
- Hospitality and Tourism
- Human Services
- Information Technology
- Law, Public Safety, Corrections and Security
- Manufacturing
- Marketing
- Science, Technology, Engineering and Mathematics
- Transportation, Distribution and Logistics

Because of data limitations, this program's evaluation was restricted to students identified by their districts as CTE completers. (School districts define a CTE completer as someone who completed a CTE sequence, whether or not the participant earns a diploma).¹

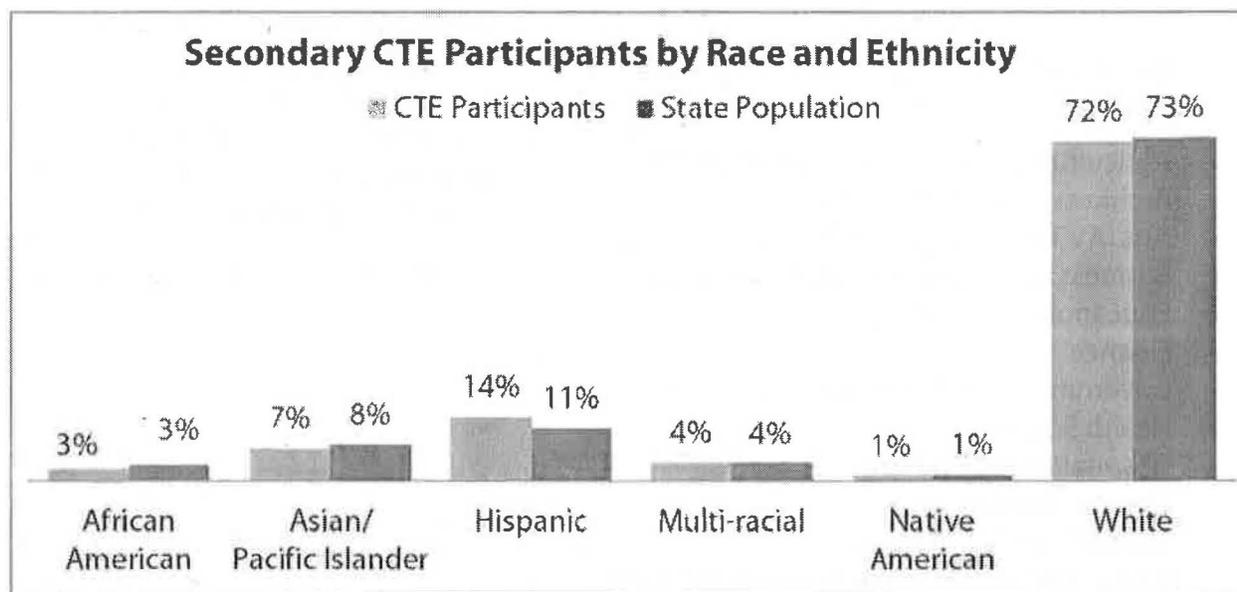
This strategy is different than the other program evaluations included in the Workforce Training Results study, which were not limited to completers only. This study focuses on 10,320 CTE completers who left their senior year during the 2010-11 school year.

¹ The state defines a student who completes 360 hours of instruction in a single CTE program area with grades of D or better as a CTE completer. The designation of who is a completer, however, does vary across some school districts. Smaller schools with fewer resources, for example, will offer the most complete sequence they can, but it may be fewer than 360 hours. These schools may still consider the students who finish the sequence to be completers.

This study includes information from the Office of Superintendent of Public Instruction's student records and Employment Security Department wage files. Enrollment data from Washington community and technical colleges, public four-year institutions, and private career schools were analyzed to examine the extent to which CTE completers continued their education.

Participant Profile

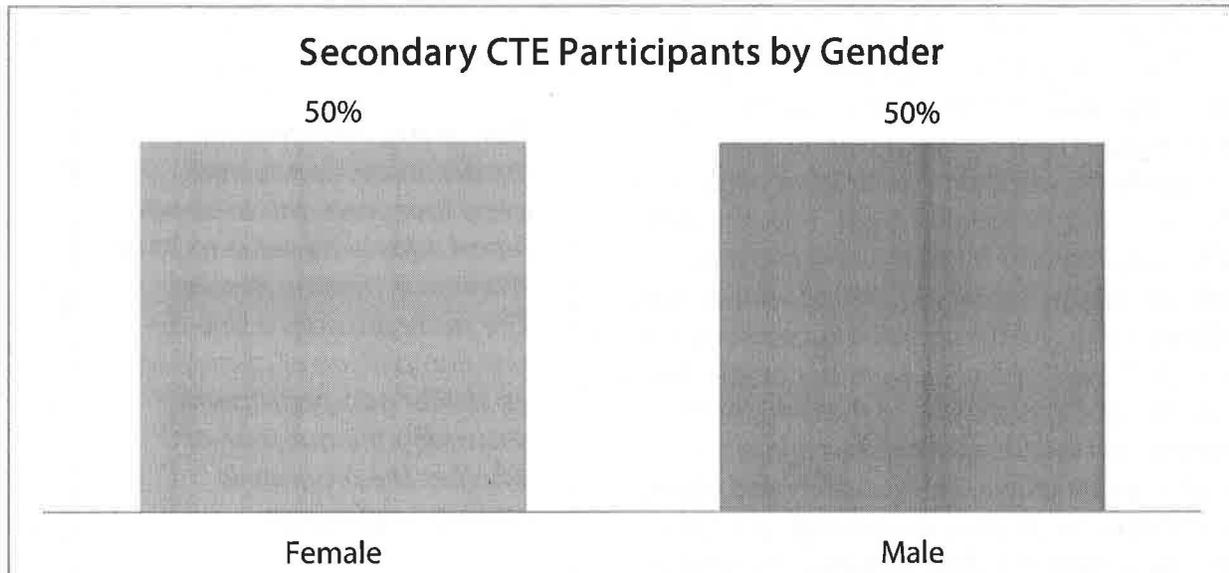
CTE completers have nearly the same racial and ethnic diversity as the state population, with whites comprising 72 percent, Hispanics (14 percent), Asian/Pacific Islanders (7 percent), African Americans (3 percent) and Native Americans (1 percent).²



Source: Office of the Superintendent of Public Instruction.

² In 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/Pacific Islanders (also referred to as Asians/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 2011 U.S. Census Bureau estimates of Washington's population from the American Community Survey, 73 percent are white; 3 percent are African American; 1 percent are Native American; 8 percent are Asian/Pacific Islander; 4 percent are multiracial; and 11 percent are Hispanic.

Among the Secondary CTE completers, females and males are equally represented among the program participants. This is equivalent to what was reported in the last two reports.



Source: Office of the Superintendent of Public Instruction.

State Core Measures: Tracking Secondary CTE 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 or continue their education and training?
- 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 2012 Workforce Training Results includes information obtained from Employment Security Department wage files in Washington, Idaho, and Oregon, and federal employment records. Information on employer satisfaction among firms that hired new employees who recently exited a Secondary CTE program was assessed through the Workforce Board's 2012 Employer Survey.

Net Impact Study adds more insight into program performance

In addition, this year's report includes a comprehensive Net Impact Study. Data used in the Net Impact Study also reached back to 2005-06 employment records, to help assess trends over a slightly longer time frame. 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.

Turn to page 20 for the Net Impact Study. Conducted every four years, this in-depth report adds extra value to 2012 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.

Did Participants Get the Skills They Needed?

This study is limited to students who completed a sequence of CTE courses. While completing a secondary CTE sequence, in itself, provides students with significant skills for the labor market, more importantly, it provides a pathway to postsecondary education and training where students can learn additional skills. Most good paying jobs require some form of postsecondary education or training. During the most recent reporting year, 59 percent of CTE completers continued on with their postsecondary education—14 percentage points higher than the previous reporting year.³

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

As was noted in the previous section, the primary focus of Secondary CTE is to prepare students for employment, postsecondary education or apprenticeship. For some students, employment is the next step after high school. To find out whether participants had jobs and how much they earned, participant records were matched with Employment Security Department wage files from Washington.⁴ In 2012, record matches found 46 percent of CTE completers who were not enrolled in higher education reported employment, and 78 percent

³ Matches are made against enrollments at Washington's community and technical colleges, public four-year institutions, and private career schools. However, in-state private four-year colleges and universities and out-of-state postsecondary enrollments are not included in the match. Therefore, the percentage enrolled in higher education is understated.

⁴ These files contain quarterly earnings and hours-worked information on those individuals with employment reported for unemployment insurance (UI) 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).

were either employed or were enrolled in higher education during the third quarter after leaving.

Among those not enrolled in higher education the median annualized earnings were \$10,734.⁵ Though these earnings seem low, it is important to remember these are young, entry-level workers fresh from high school.

The chart below shows employment and earnings results for CTE completers.

Employment and Earnings for Secondary CTE Completers, 2012

Performance Measure	Results
Postsecondary Education and/or Employment*	78%
Employment Rate* (State Records)	46%
Enrolled in Higher Education	60%
Full Time Employment**	29% ⁶
Median Quarterly Hours	239 hours ⁶
Median Hourly Wage***	\$10.36 ⁶
Median Annualized Earnings***	\$10,734

** 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 of Washington or military service and thus understates total employment by approximately 10 percent. Employment rate (state records) is only those not enrolled in further education.*

*** Full-time employment averages 30 or more hours per week, of those not enrolled in higher education.*

**** Earnings/wages expressed in first quarter 2011 dollars in order to account for inflation. Of those not enrolled in higher education.*

Earnings of Secondary CTE Completers

To better gauge the financial effectiveness of Washington's workforce programs, it helps to frame income levels. One common yardstick is the federal poverty level. In 2011, the federal poverty level for one person was \$10,890 per year.⁷

In 2012, Secondary CTE completers were able to support themselves at the poverty level.⁸ They did not have enough earnings to support themselves, let alone others, at 200 percent of the poverty level (.5 people).

⁵ Annual earnings are calculated as third quarter earnings multiplied by four. All wages and earnings are stated in first quarter 2011 dollars.

⁶ The 2012 WTR uses 2011 data for full time employment, median quarterly hours, and median wage, because this data was not available at time of publication for 2012.

⁷ Poverty levels from 2011 were used in this edition of Workforce Training Results to measure the results of workforce programs on participants observed in 2010-11. The federal poverty level is determined by the Department of Health and Human Services. The level varies according to family size. The number is adjusted for inflation and reported annually in the form of poverty guidelines. Public assistance programs typically define eligibility income limits as some percentage of the federal poverty level.

⁸ This reflects CTE completers who are not in school and working.

Number of People Supported at Poverty Level by Participant Income*

Performance Measure	2004	2006	2008	2010	2011	2012
Number of people supported at poverty level	1.4 people	1.2 people	1.5 people	0.9 people	0.9 people	1.0 people
Number of people supported at 200 percent poverty	0.6 people	0.6 people	0.5 people	0.5 people	0.5 people	0.5 people

**For those not enrolled in higher education.*

Secondary CTE Participants Receiving Benefits from Employers

Performance Measure	2004	2006	2008	2010*	2011	2012*
Percentage Self-Reporting Receipt of Medical Benefits from Employer	35%	36%	38%	N/A	19%	N/A
Percentage Self-Reporting Receipt of Pension Benefits from Employer	16%	13%	15%	N/A	5%	N/A

**Due to budget limitations, the Workforce Board's Participant Survey was not conducted in 2010 or 2012.*

The following table shows employment and earnings information over the course of five study periods.

Employment and Earnings Trends for Secondary CTE Participants

Performance Measure	2006	2008	2010	2011	2012
Postsecondary Education and/or Employment	73%	76%	73%	72%	78%
Employment Rate (Self-Reported)	67%	66%	N/A*	43%	N/A*
Employment Rate** (State Records)	56%	58%	51%	49%	46%
Enrolled in Higher Education	39%	40%	46%	45%	59%
Full Time Employment***	35%	42%	29%	29%	N/A ⁹
Median Quarterly Hours	296	341	280	265	N/A ⁹
Median Hourly Wage****	\$9.92	\$10.10	\$10.36	\$10.36	N/A ⁹
Median Annualized Earnings*****	\$11,576	\$12,756	\$10,504	\$10,583	\$10,734

* Due to budget limitations, the Workforce Board's Participant Survey was not conducted in 2010 or 2012.

**These figures apply to those with employment reported to ESD six to nine months after leaving program. Rate does not include self-employment, employment outside Washington or military service and thus understates total employment by approximately 10 percent. Employment rate (state records) is only those not enrolled in further education.

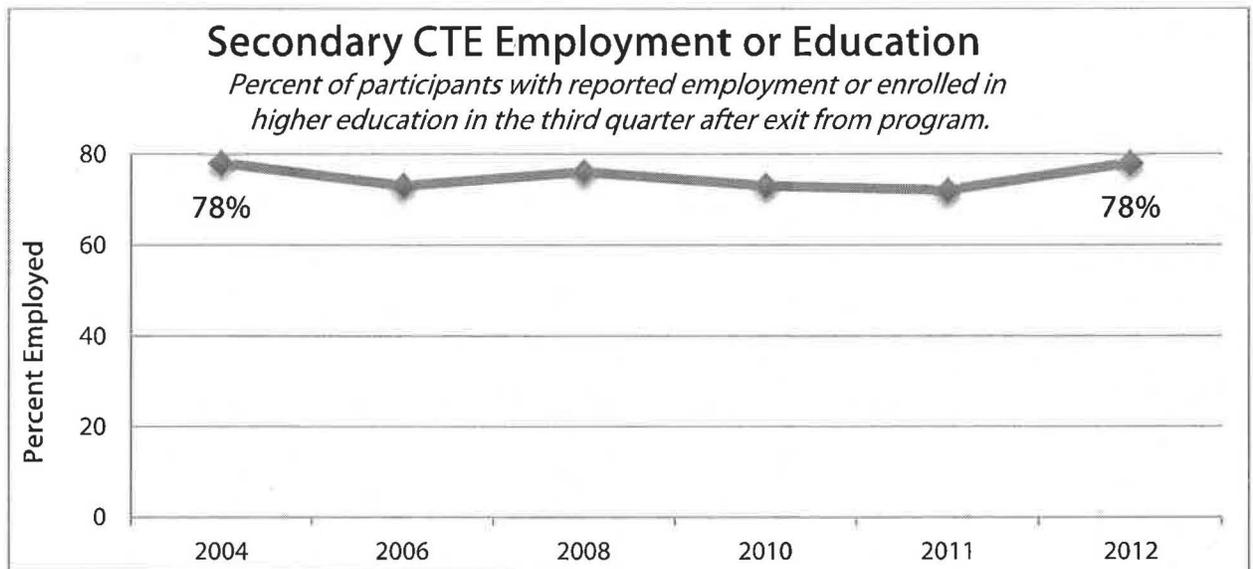
***Full-time employment averages 30 or more hours per week, of those not enrolled in higher education.

****Earnings/wages expressed in first quarter 2011 dollars in order to account for inflation. Those not enrolled in higher education.

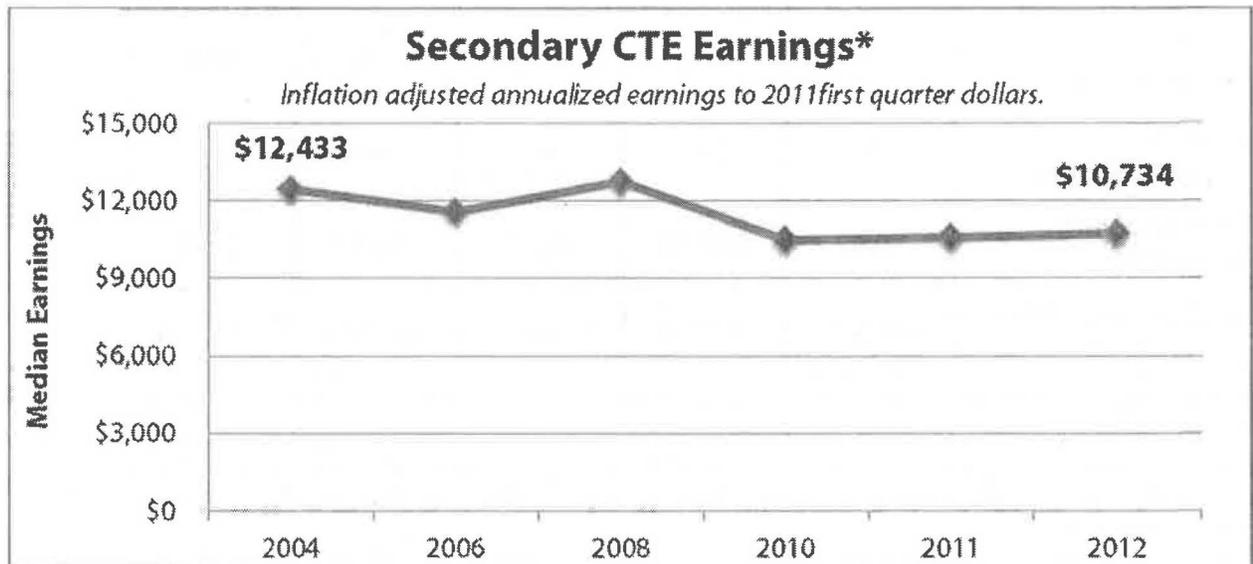
After declining in 2010 and 2011 the percentage of CTE completers who reported employment or enrolled in higher education increased in 2012. The earnings of CTE completers dropped in 2010, and have yet to recover – this may reflect the ongoing impact of the Great Recession. Young people, who suffer unemployment rates higher than the general population, have been especially hard hit by the recent recession.¹⁰

⁹ The 2012 WTR uses 2011 data for full time employment, median quarterly hours, and median hourly wage, because this data was not available at time of publication for 2012.

¹⁰ See "Multiple Pathways for Young Adults," a 2012 report to the Washington Legislature from the Workforce Training and Education Coordinating Board.



Source: Workforce Training Results 2004-2012.



Source: Workforce Training Results 2004-2012. *Does not include those enrolled in higher education.

Secondary CTE Employment by Industry

Employment of CTE completers continued to be heavily concentrated in services (nearly 49 percent) and retail trade (32 percent). Within the service industry, the largest category was accommodation and food services at 24 percent (compared to 21 percent in 2010), followed by health care and social assistance at 8 percent, which reported the same level of employment the prior year.¹¹

Industry Group	
48.5%	Services (see breakout below)
32.1%	Retail Trade (see breakout below)
4.1%	Manufacturing
3.6%	Construction
2.8%	Financial Services
2.3%	Wholesale Trade
1.8%	Information
1.8%	Transportation and Warehousing and Utilities
1.6%	Public Administration
1.5%	Natural Resources and Mining
Breakout of Services Industry	
24.0%	Accommodation and Food Services
8.2%	Health Care and Social Assistance
4.3%	Arts, Entertainment, and Recreation
3.9%	Other Services (except Public Administration)
3.8%	Administrative and Support and Waste Management and Remediation Services
1.9%	Education Services
1.8%	Professional, Scientific, and Technical Services
0.4%	Management of Companies and Enterprises
Breakout of Retail Trade Industry	
9.9%	All Other Retail Trade
8.1%	General Merchandise Stores
6.0%	Food & Beverage
5.9%	Clothing and Clothing Accessories Stores
2.3%	Motor Vehicle and Parts Dealers

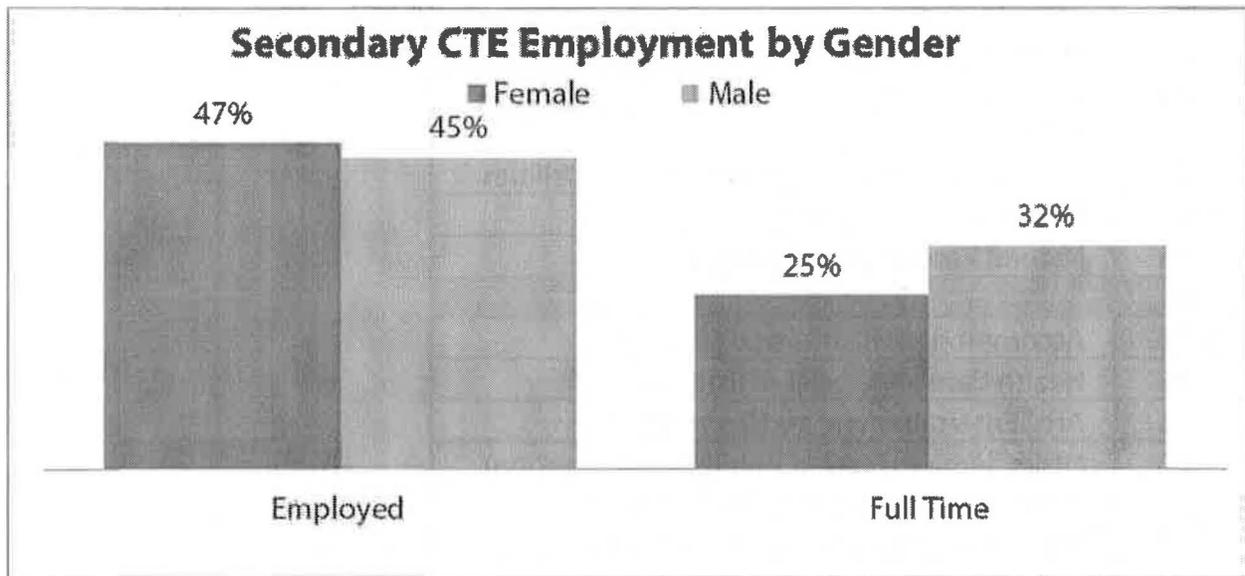
*Source: Matches with Employment Security Department data in third quarter after exiting program.
Note: Industry groups based on North American Industry Classification System codes.*

¹¹ 2011 data is used because more current information regarding industry of employment was not available at time of publication.

Wages and Employment Results Vary by Population

Wages and employment results of CTE completers who are not enrolled in higher education can vary by gender, race and ethnicity, and disability. The following chart depicts the percentage of female (47 percent) and male (45 percent) Secondary CTE completers who were reported to be employed and not enrolled in higher education. These numbers are lower than the previous year, when 51 percent of females and 48 percent of males were employed. Females had a 25 percent full-time employment rate and males had a 32 percent full-time employment rate.¹²

Women continue to have lower annual earnings and women have median annual earnings that are 84 percent of men (\$9,723 versus \$11,537). Women's wages were 94 percent of wages earned by men (\$9.97 versus \$10.57)¹²



Source: Matches with Employment Security Department data.¹²

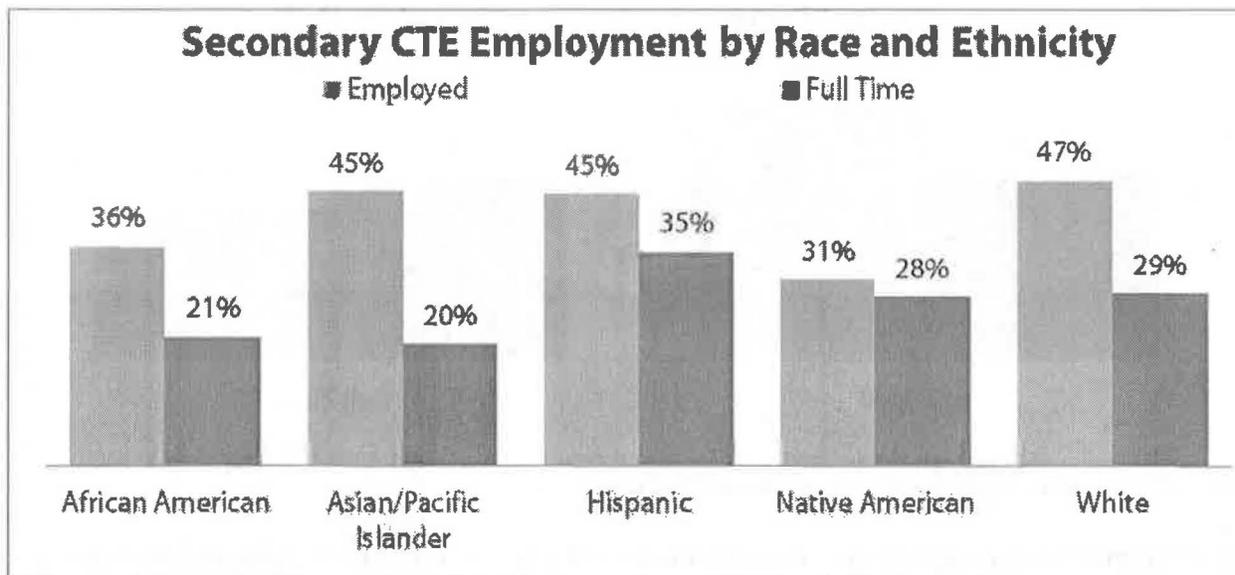
Race/Ethnicity Plays Role

Most racial and ethnic minorities were just as likely to be employed as white CTE completers. Whites had a 47 percent employment rate, Asian/Pacific Islanders and Hispanics had a 45 percent employment. However, African Americans (36 percent) and Native Americans (31 percent) had lower employment rates than other groups.

Asian/Pacific Islanders had the highest median hourly wage at \$10.57, followed by \$10.38 for whites, \$10.16 for Hispanics, \$10.07 for African Americans, and \$10.05 for Native Americans. The breakdown for annual earnings among different racial and ethnic groups was distributed slightly differently from that of median hourly wages. Typically, differences between hourly wages and annual earnings occur because of variances in the number of hours worked. Among those not in school, Native Americans had the highest earnings (\$12,865), followed by

¹²The 2012 WTR uses 2011 data for full time employment, median quarterly hours, and median wage, because this data was not available at time of publication for 2012.

whites (\$11,129), Hispanics (\$9,987), Asian/Pacific Islanders (\$9,361), and African Americans (\$5,596).¹²



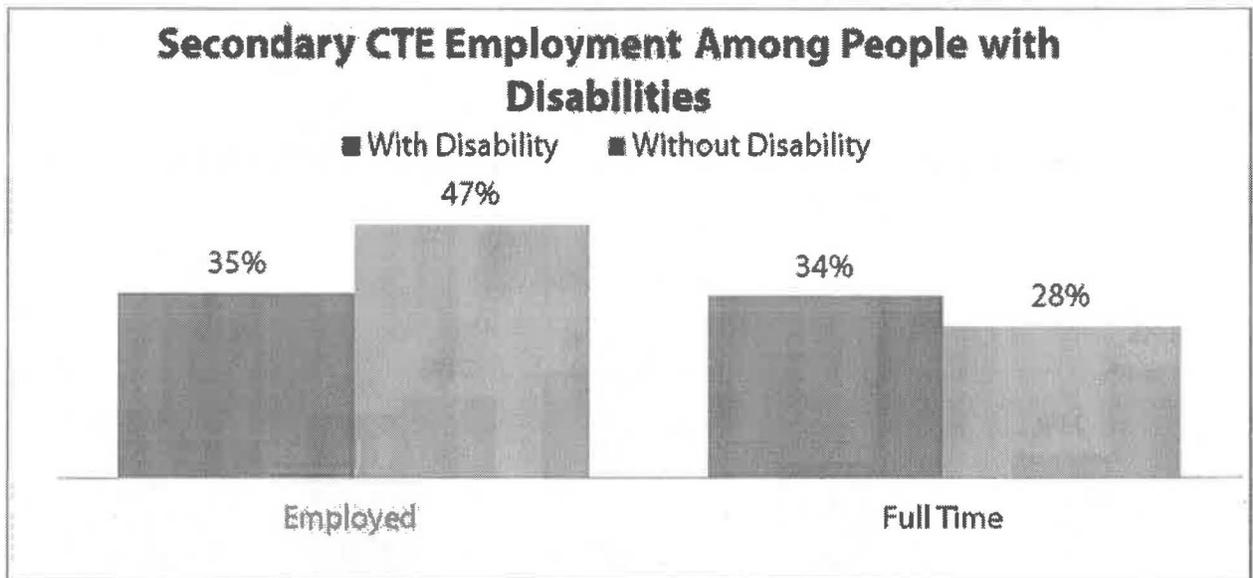
Source: Matches with Employment Security Department data.¹³

Disability Impacts Employment, Earnings

Earnings and employment outcomes also varied by disability status. Records from the Office of the Superintendent of Public Instruction indicate 6 percent of the Secondary CTE completers included in this study had a disability. Students with a disability were less likely to have employment compared to students without a disability (35 percent versus 47 percent). However, the annual earnings of those with a disability (\$10,907) were slightly higher without a disability (\$10,689).

Students with a disability were more likely to be employed full time (34 percent versus 28 percent) than students without a disability and they had a higher median hourly wage (\$10.54 versus \$10.34).¹³

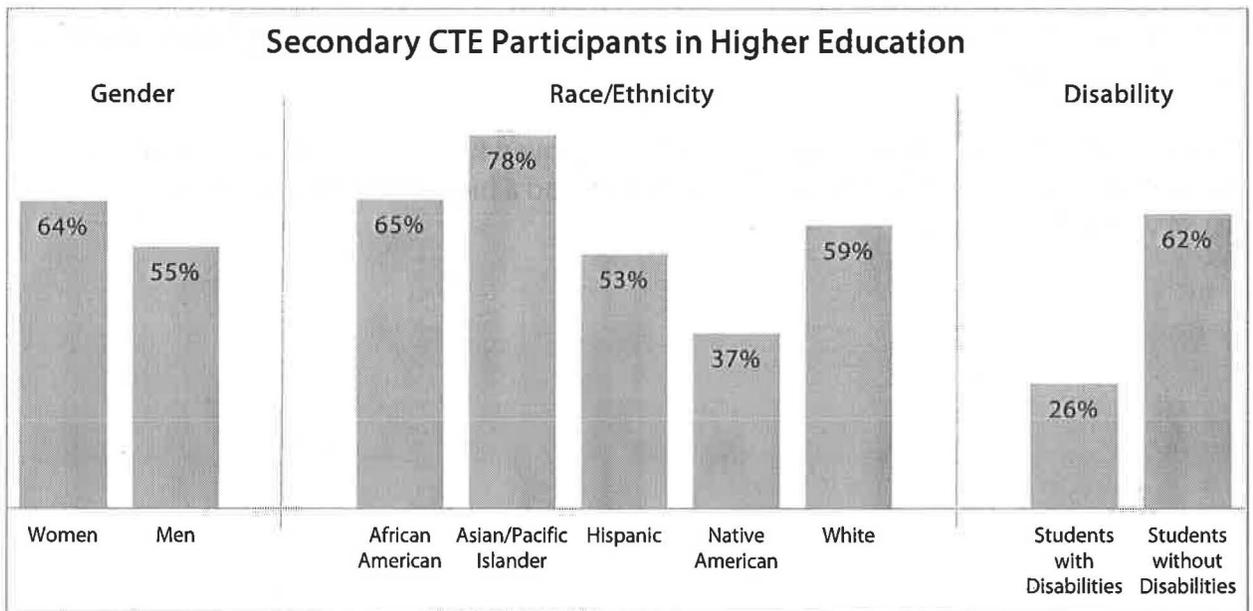
¹³The 2012 WTR uses 2011 data for full time employment, median quarterly hours, and median wage, because this data was not available at time of publication for 2012.



Source: Matches with Employment Security Department data.¹⁴

CTE completers also progressed to postsecondary education at different rates, depending on ethnicity and gender.

Of the CTE completers, the following percentages of each group were enrolled in higher education: Females, 64 percent; males, 55 percent; students with disabilities, 26 percent; students without disabilities, 62 percent; whites, 59 percent; African Americans, 65 percent; Asian/Pacific Islanders, 78 percent; Hispanics, 53 percent; and Native Americans, 37 percent.



Source: Matches with State Board for Community and Technical Colleges' postsecondary data.

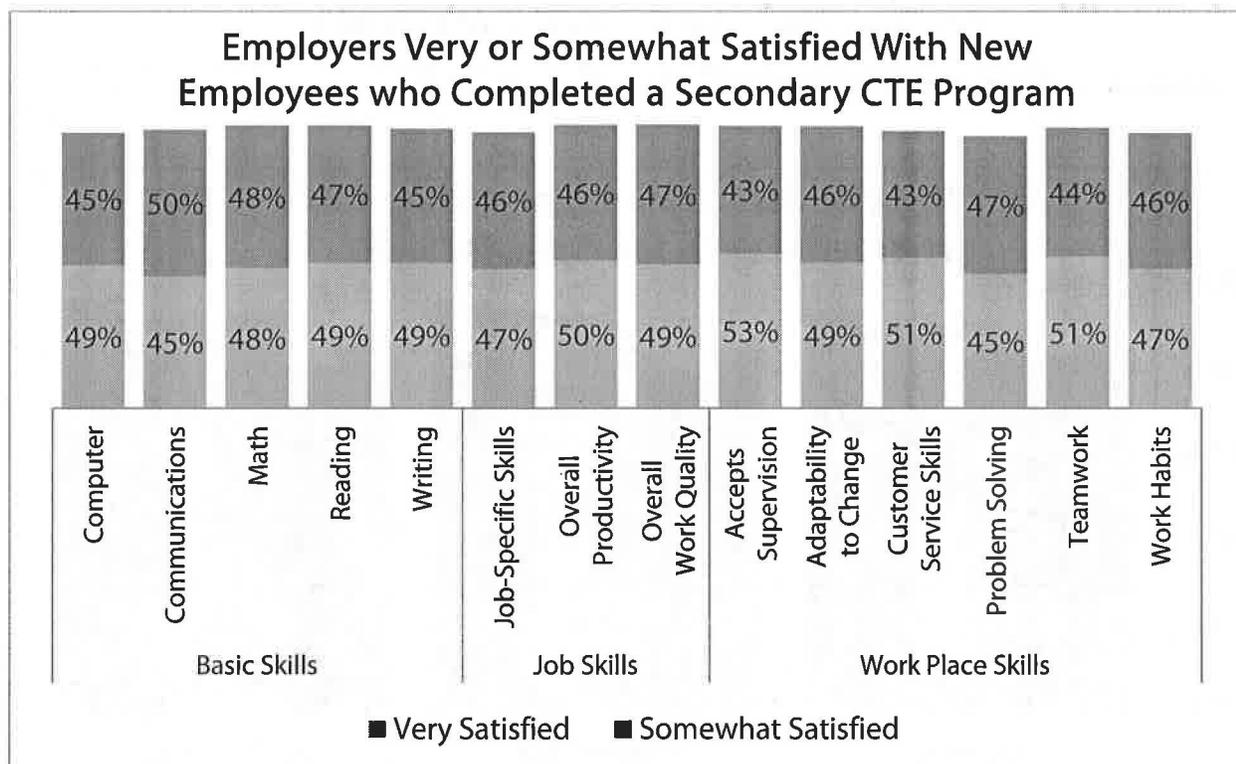
¹⁴ The 2012 WTR uses 2011 data for full time employment, median quarterly hours, and median wage, because this data was not available at time of publication for 2012.

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 Secondary CTE program. Some 96 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.

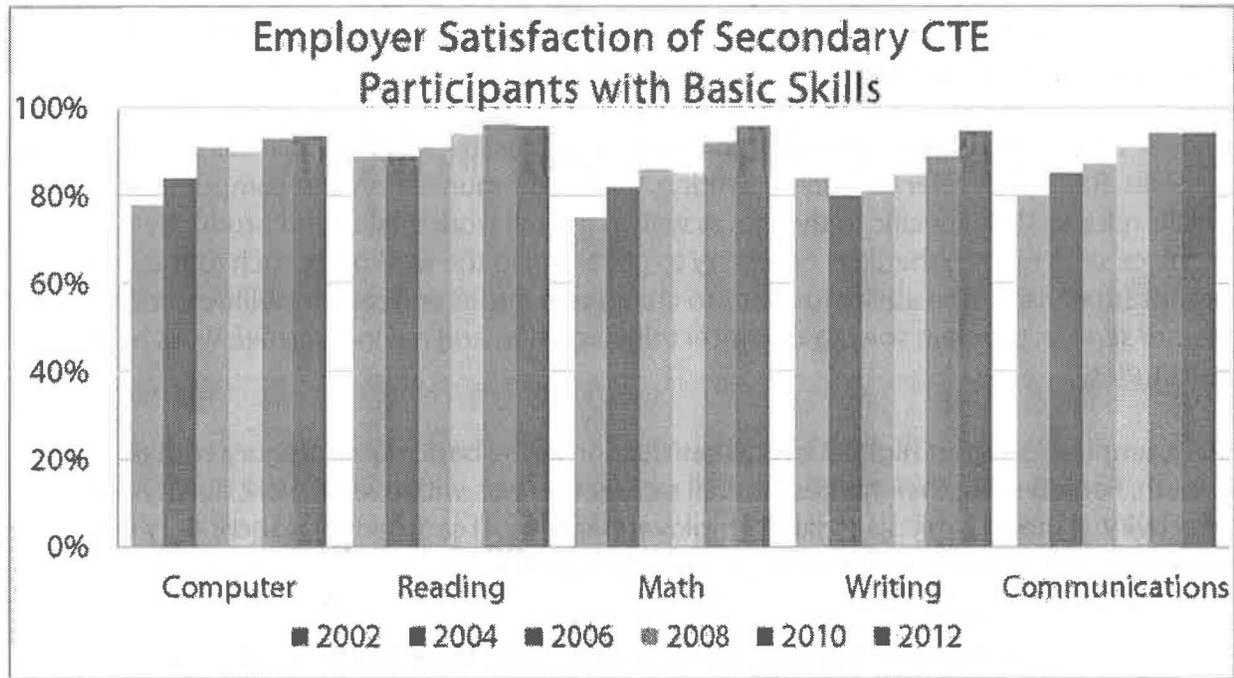
In 2012, employers report highest overall satisfaction in the basic skills category with reading and math. For job skills, their highest overall satisfaction was with overall work quality and productivity. Among work place skills, employers were most satisfied with Secondary CTE participant’s ability to accept supervision and adapt to change.



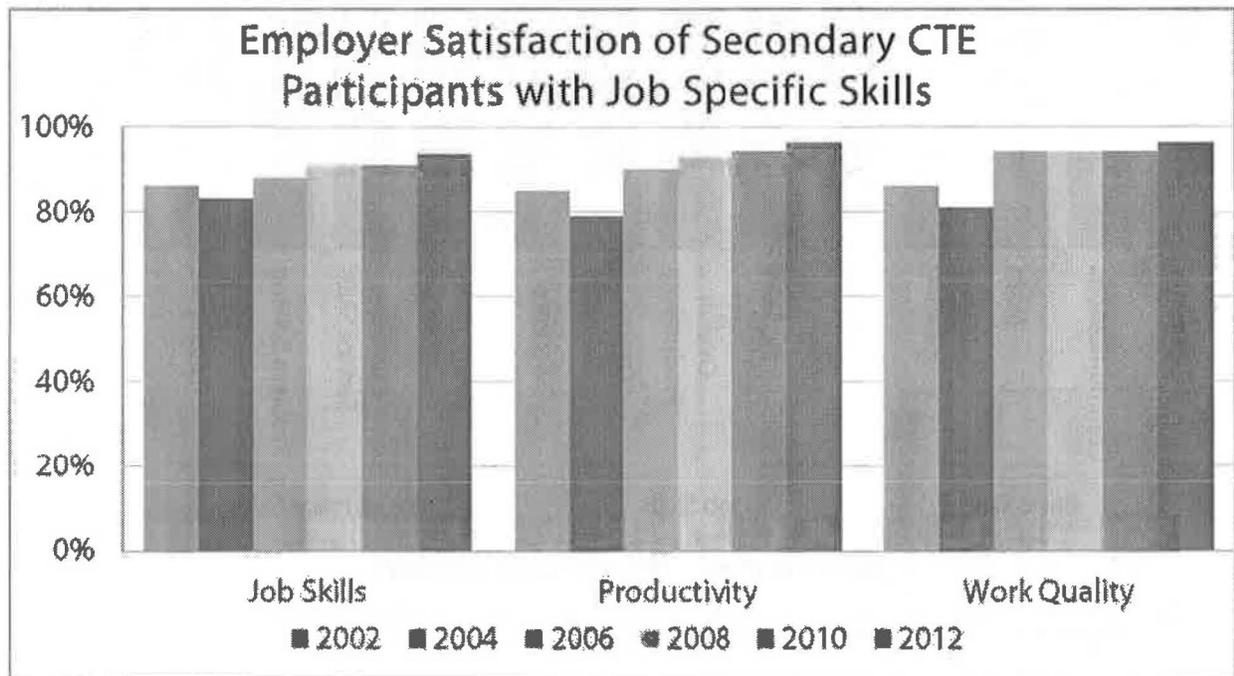
Source: Workforce Board Employer Survey conducted in 2012.

Overall, the levels of employer satisfaction reported in the Workforce Board’s 2012 Employer Survey are higher than on the previous survey, conducted in 2010. There is also a clear upward trend in employer satisfaction over the last decade. The following three charts show

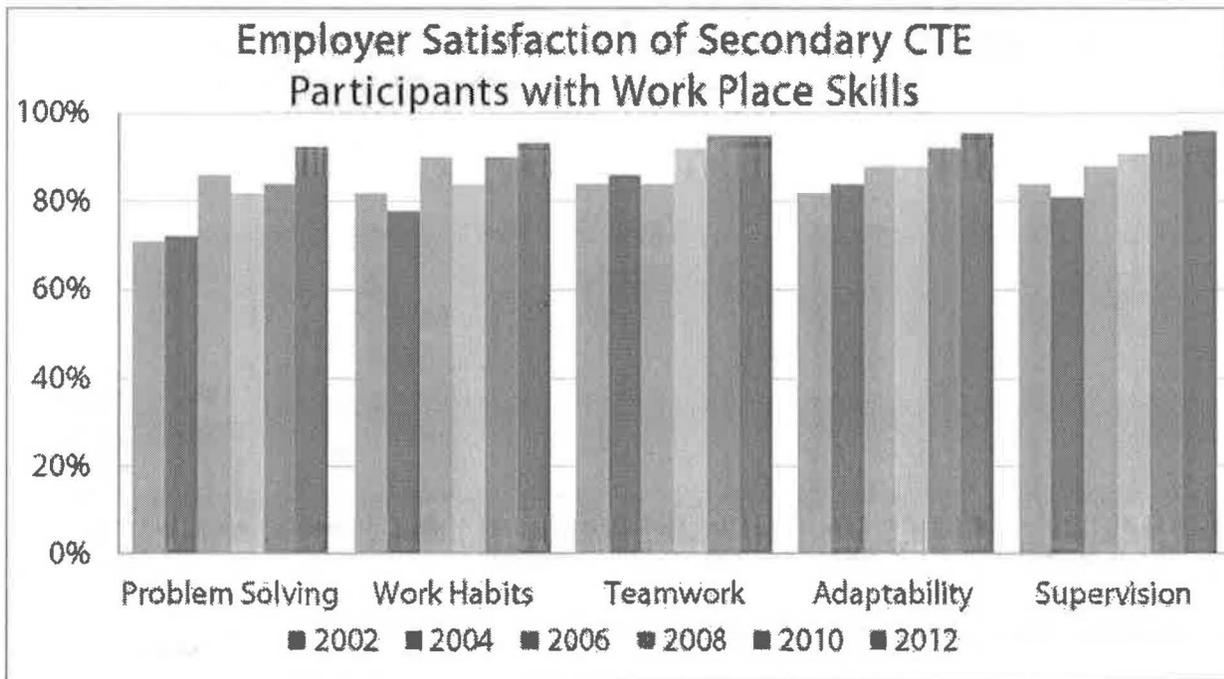
the overall satisfaction of employers with new employees who recently completed a Secondary CTE program.



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



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



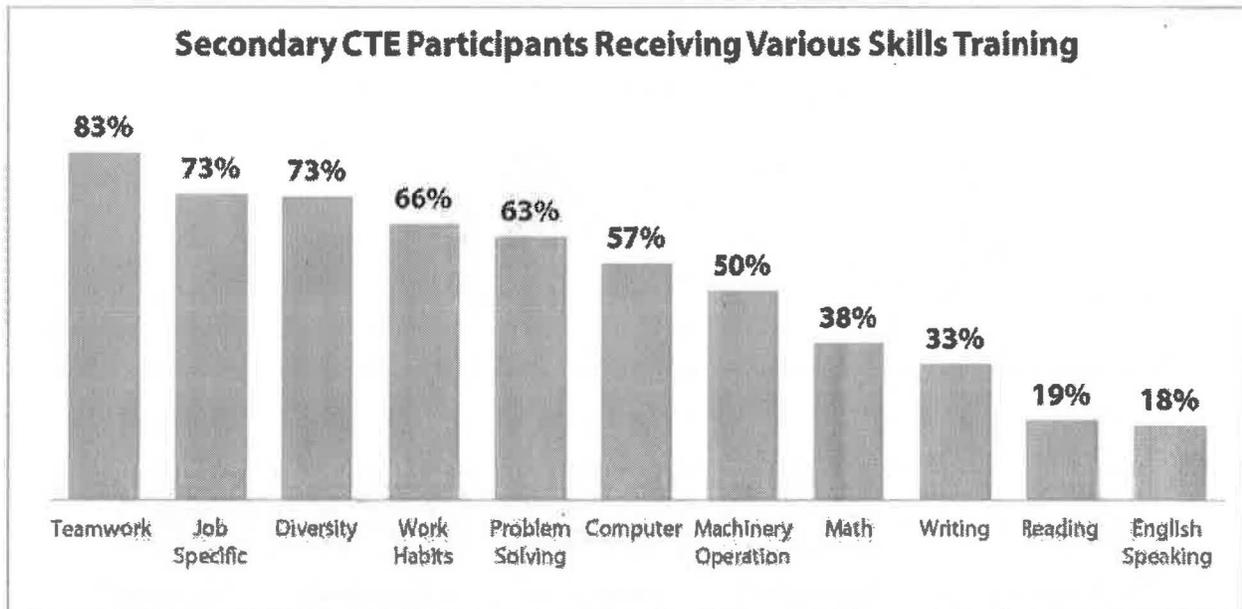
Source: Workforce Board's biennial Employer Surveys from 2002 through 2012.

Competency Gains

In 2011, the Workforce Board surveyed Secondary CTE participants who had left their program in 2008-09. The Participant Satisfaction Survey provided data on employment and documented how satisfied participants were with training. The survey was conducted by telephone and was completed by 334 participants.

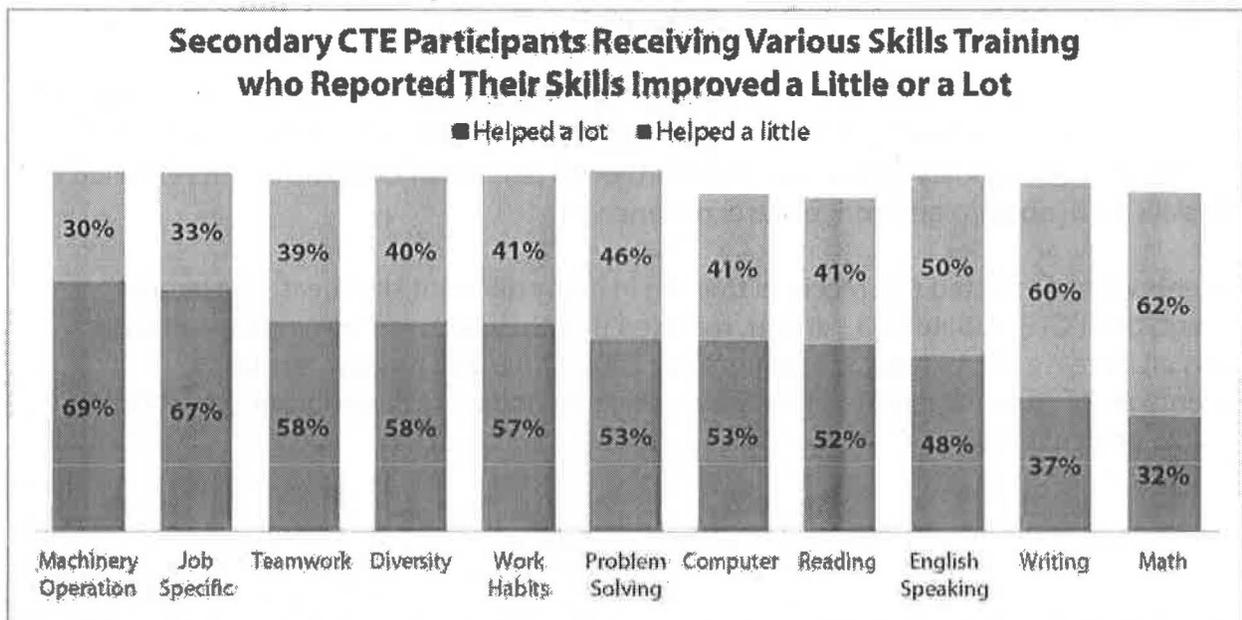
According to the survey, the highest percentage of CTE students indicated that they enrolled for personal enjoyment and improvement (96 percent). In addition, 72 percent enrolled to prepare for postsecondary education, and a further 68 percent of CTE participants enrolled to gain skills for a job or to get work place experience.

Students who completed CTE received training in many different skill areas. The largest percentage of CTE students, 83 percent, reported that they received training in teamwork. This is an increase of 6 percentage points since 2008. Other skill areas where large percentages of students reported that they received training are diversity and job-specific skills (73 percent each).



Source: Workforce Board's Participant Satisfaction Survey 2011.

Most participants said their skills improved as a result of taking CTE classes. Similar to participants from both 2006 and 2008, higher percentages indicated "a lot" of improvement in technical and general workplace skills than in basic skills. However, the percentage of CTE students who indicated that their reading skills improved "a lot" went up 17 percentage points.



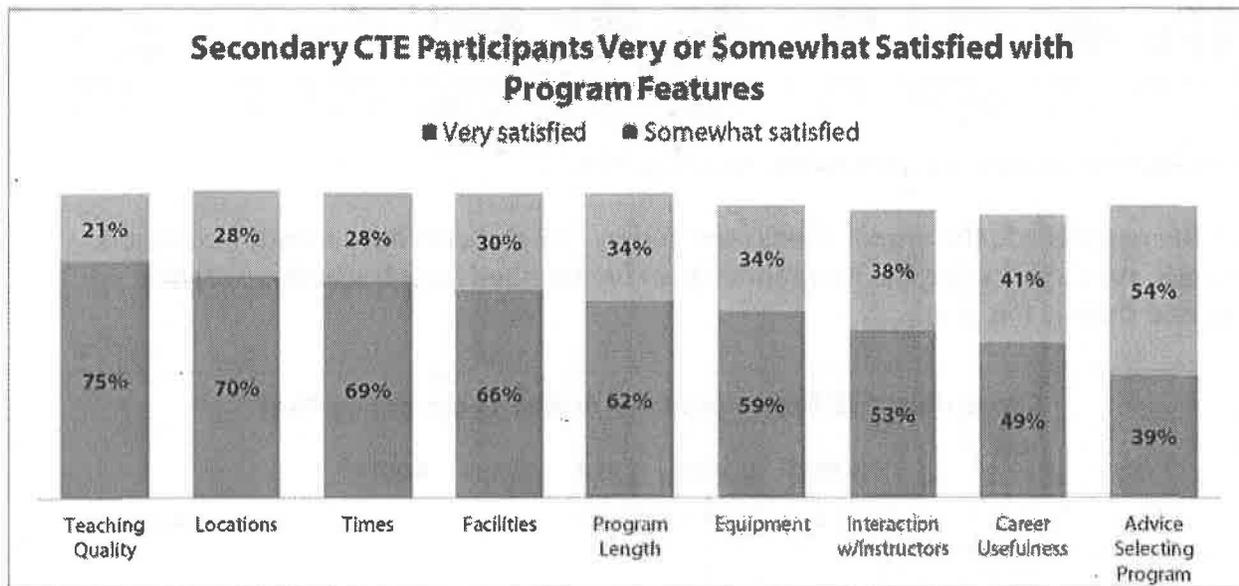
Source: Workforce Board's Participant Satisfaction Survey 2011.

Many of the participants continued their education at a community or technical college or public four-year university. In the third quarter after completing their program, 45 percent of the completers were enrolled in postsecondary education.

Participant Satisfaction

According to the Workforce Board's 2011 Participant Satisfaction Survey, participants were very satisfied with their CTE programs. Some 98 percent said the program met their objectives and 99 percent were satisfied with the program overall. These high levels of satisfaction are slightly higher than those reported two years earlier.

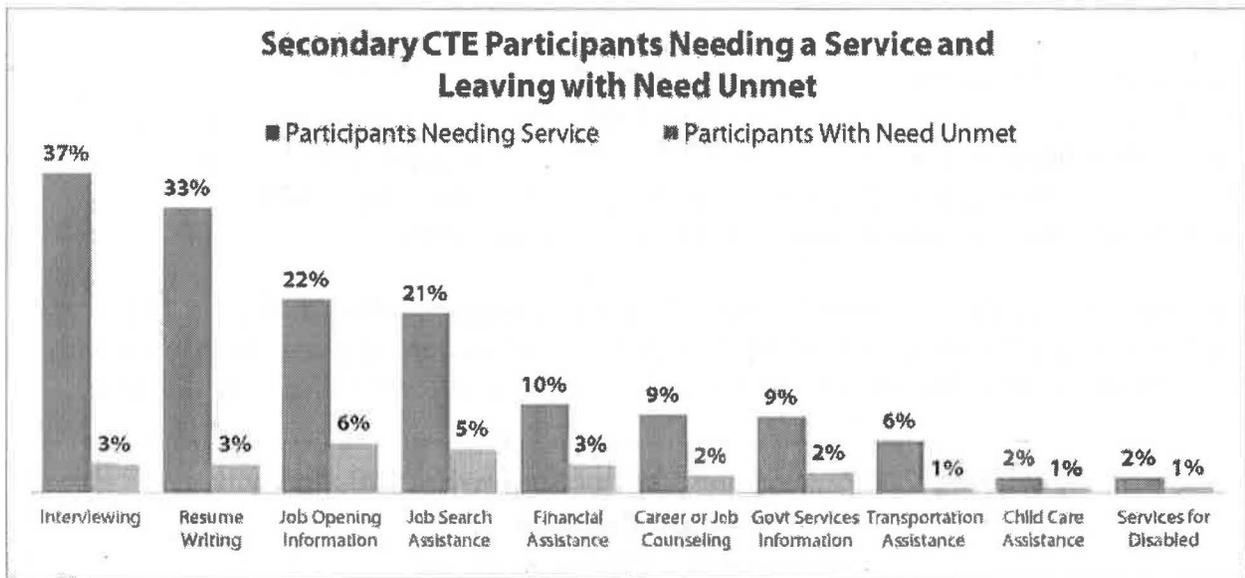
Three-fourths of participants were "very satisfied" with the quality of teaching, and 70 percent were "very satisfied" with the location of classes. Their satisfaction level was much lower with respect to advice on selecting a program, with just under 40 percent being "very satisfied."



Source: Workforce Board's Participant Satisfaction Survey 2011.

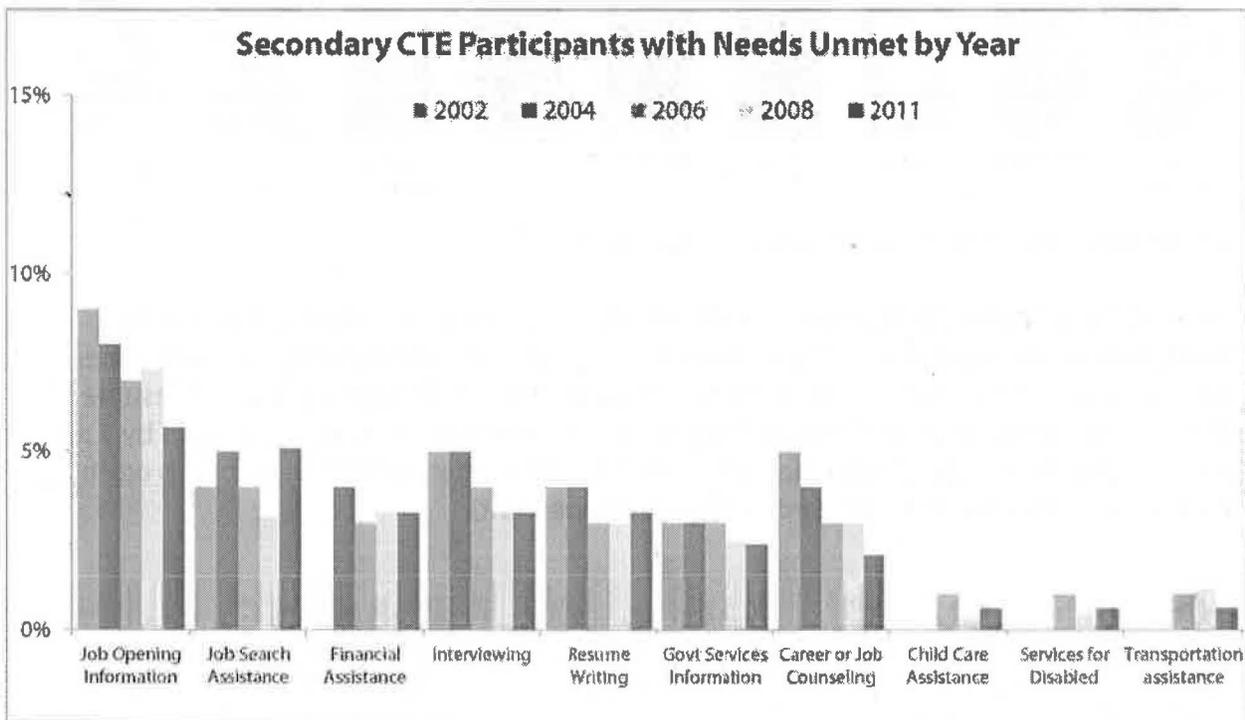
In general, CTE participants reported needing fewer support services than other groups studied, and when they did need these services, they generally received them. The services most frequently needed by participants were assistance with job interviewing and resume writing. The percentage of students indicating they needed these services increased by 7 and 4 percentage points respectively since 2008. The highest unmet needs¹⁵ were for job opening information (6 percent) and job search assistance (5 percent).

¹⁵ 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.



Source: Workforce Board's Participant Satisfaction Survey 2011.

Over the past decade the unmet needs reported by CTE students have mostly decreased. However, students leaving the program with an unmet need for job search assistance increased sharply this year.



Source: Participant Satisfaction Surveys 2002-11.

Relationship of Training to Employment

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.

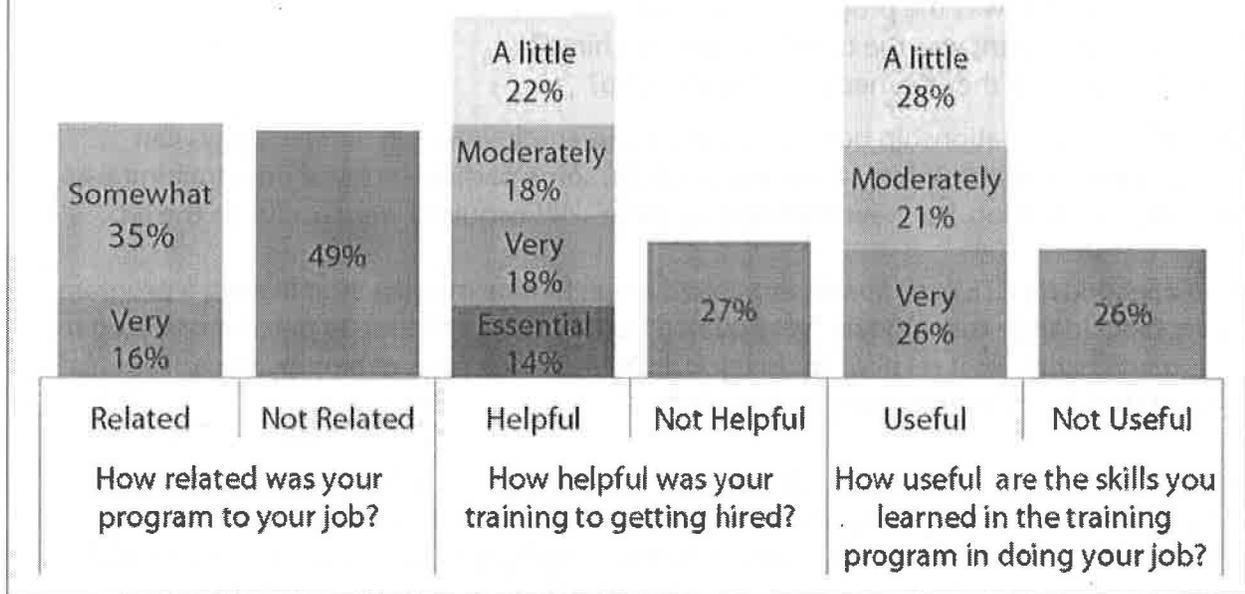
Among Secondary CTE participants employed seven to nine months after leaving a program, 16 percent said their training was "very related" to their job. A further 35 percent reported the training was "somewhat related" to their job. In 2008, similar rates of employed participants reported their training was related to their job.

Participants interviewed in 2011 also indicated the training was helpful to them in getting their job. Of those participants, 14 percent indicated their training was an "essential requirement," another 18 percent indicated it was "very important," 18 percent reported it was "moderately important," and 22 percent reported it was "a little helpful." The remaining 27 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 26 percent of participants indicated the skills were "very useful," 21 percent said "moderately useful," and 28 percent "a little useful." Some 26 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 22 percent 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.

Secondary CTE Relationship of Training to Employment



Source: Workforce Board's Participant Satisfaction Survey 2011.

Net Impact -Did the Program Make a Difference in Participant Success

Every four years the Workforce Training and Education Coordinating Board conducts net impact and cost-benefit analyses 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.

The net impact and the return on investment (next section) analyses were conducted by the W.E. Upjohn Institute for Employment Research (Upjohn), a national leader in evaluating training programs. To do the analyses, Upjohn studied program participants to see what results they achieved and compared these results with a control group. Individuals who completed a Secondary CTE program were compared to similar secondary students who were not CTE completers.

The most recent analyses examined the experience of participants who left Secondary CTE programs, including the short term impacts on participants leaving in 2007-08 and the long term impacts on those who left in 2005-06.

Impact on Employment and Earnings: Participants vs. Control Group

Secondary CTE	Short-term [^]	Long-term [^]
Net Employment Impact*	6 percentage points	8.4 percentage points
Net Hourly Wage Impact**	No significant positive impact	No significant positive impact
Net Hours Employed per Quarter Impact	19.2	32.2
Net Annualized Earnings Impact**	\$721	\$2,060

[^]Short-term is 3 quarters after program exit; Long-term is average across 3 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 2011 dollars, represent the average difference between Secondary CTE participants who got jobs and those in the control group who were employed.

As can be seen above, Secondary CTE participants experienced positive net impacts in employment, hours worked, and net annualized earnings, particularly over the long-term, when compared with the control group. Net hourly wages weren't boosted significantly by the program, however.

Benefits and Costs

The cost-benefit analysis examines the value of the net impact on earnings, employee benefits (estimated at 25 percent of earnings), and certain taxes. Program costs include both direct program costs and support payments borne by taxpayers and the tuition and foregone earnings borne by program participants. The program cost is the *difference* in the cost of a student completing CTE compared to the cost of a student completing another type of high school program. (The difference is primarily due to smaller student/teacher ratios in CTE.) The intent of the cost-benefit evaluation is to analyze the net value of exiting high school having completed a CTE program, rather than exiting high school not having completed a CTE program.

Benefits and costs are evaluated for both the observed period of time and based upon a statistical model that estimated the benefits and costs out to the age of 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 2011 Q1 dollars to control for inflation. The benefits and costs presented here are based on impacts estimated for participants leaving programs in 2005-2006, because a longer-term follow-up is required for this analysis.

Participant and Public Benefits and Costs per Participant in Secondary CTE

Benefit/Cost	First 2.5 years		Lifetime (until 65)		Sum of Costs and Benefits
	Participant	Public	Participant	Public	
Benefits					
Earnings	\$4,913	\$0	\$68,241	\$0	
Fringe Benefits	\$1,228	\$0	\$17,060	\$0	
Taxes	-\$639	\$639	-\$8,878	\$8,878	
Transfers					
UI	-\$6	\$6	\$594	-\$594	
Costs					
Foregone net earnings	-\$747	-\$87	-\$747	-\$87	
Program costs	\$0	-\$880	\$0	-\$880	
Benefits	\$5,497	\$644	\$77,017	\$8,284	
Costs	-\$747	-\$967	-\$747	-\$967	
Total (Net)	\$4,749	-\$323	\$76,269	\$7,317	\$83,587

Note: Benefits and costs are expressed in 2011 first quarter dollars.

Secondary CTE enhances the lifetime earnings of program completers. Gains in earnings and employee benefits outweigh the costs of CTE to the public. For each CTE completer, the marginal cost to the public (taxpayer) is roughly \$880 over the length of their enrollment. During the first two and one-half years after leaving school, the average completer will gain \$4,913 in earnings. During the course of their working life to age 65, they will gain about \$67,494 in net earnings (earnings minus foregone earnings) and \$8,878 in employee benefits. These are net gains compared to the earnings of similar individuals who were not CTE completers. Including program costs and the net impacts on taxes and unemployment insurance benefits, the total net benefit per participant is \$76,269.

Projected participant net benefits to age 65 outweigh public costs invested in college training by a ratio of \$87 to 1, or \$76,269 to \$880.

From the time of leaving the senior year in high school to age 65, the public is forecast to gain about \$8,878 in net additional Social Security, Medicare, federal income, and state sales taxes and to save \$594 per participant in total UI benefits and other social welfare costs—greater than the cost of CTE completion. The estimated lifetime net benefit to taxpayers is \$7,317 per completer.

Projected taxpayer net benefits to age 65 outweigh public costs invested in Secondary CTE by a ratio of \$9 to 1, or \$8,284 to \$880.