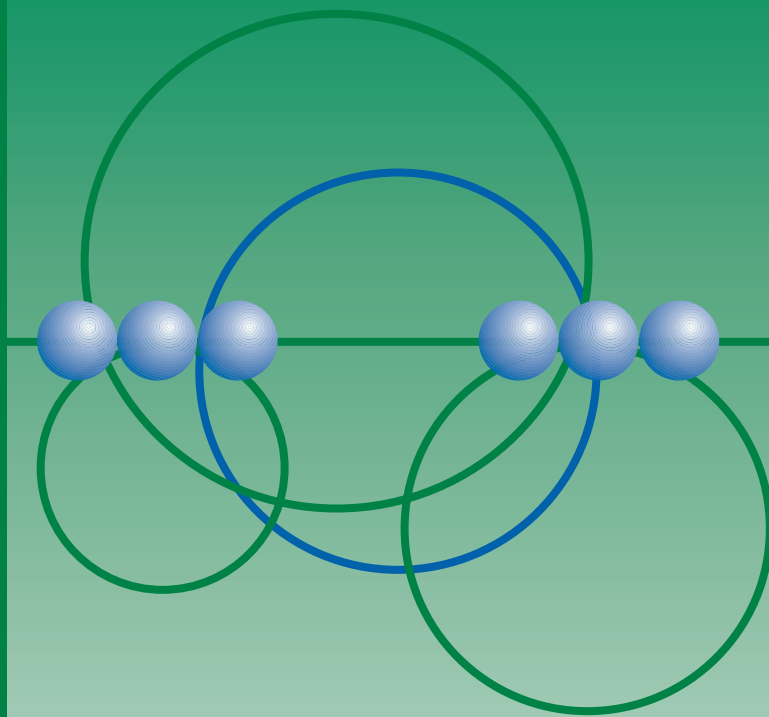


WORKFORCE

training results

2004



WASHINGTON STATE
Workforce Training and
Education Coordinating Board

WASHINGTON STATE
Workforce Training and Education Coordinating Board

Our Vision

Washington’s Workforce Training and Education Coordinating Board is an active and effective partnership of labor, business, and government leaders guiding the best workforce development system in the world.

Our Mission

We shape strategies to create and sustain a high-skill, high-wage economy.

To fulfill this Mission, the Board will:

- Advise the Governor, Legislature, and other policymakers on workforce development policy and innovative practice.
- Promote a seamless workforce development system that anticipates and meets the lifelong learning and employment needs of our current and future workforce.
- Advocate for the training and education needed for success in the 75–80 percent of jobs that do not require a baccalaureate degree
- Ensure quality and accountability by evaluating results, and supporting high standards and continuous improvement.

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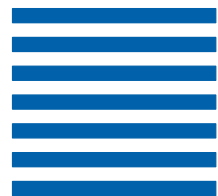
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WORKFORCE TRAINING RESULTS 2004



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EXECUTIVE SUMMARY

Introduction

This is the fifth biennial outcome evaluation of Washington State's workforce development system. It analyzes the results of eleven of the state's largest workforce programs. These programs account for over 90 percent of public expenditures in the workforce development system.

The purpose of this evaluation is to report the results of workforce development and to recommend areas for improvement. The report discusses program results in terms of the seven desired outcomes for the state workforce development system established by the Workforce Training and Education Coordinating Board (Workforce Board). These desired outcomes are not static targets, but are conditions that should be increasingly true for all people.

Key Findings

During the follow-up period used in this evaluation the state's unemployment rate was between 7 and 8 percent. For the 2002 evaluation, the state's unemployment rate was about 5 percent. This economic downturn contributed to a decline in employment and earnings results for many programs.

Participant satisfaction remains high, although satisfaction declined slightly in some programs from its levels of two years ago.

Participants in workforce development programs generally reflect the diversity of the state population, or are more diverse.

As in previous evaluations, the wage outcomes for women continue to be substantially lower than for men.

Also, as in previous evaluations, a substantial number of participants reported that their need for information on job openings was not met.

Seven Desired Outcomes for the State Workforce Development System

Competencies: Washington's workforce possesses the skills and abilities required in the workplace.

Employment: Washington's workforce finds employment opportunities.

Earnings: Washington's workforce achieves a family-wage standard of living from earned income.

Productivity: Washington's workforce is productive.

Reduced Poverty: Washington's workforce lives above poverty.

Customer Satisfaction: Workforce development participants and their employers are satisfied with workforce development services and results.

Return on Investment: Workforce development programs provide returns that exceed program costs.

Finally, there were some major programmatic changes since the last evaluation that should be noted. The Workforce Investment Act (WIA) emphasizes services other than occupational skills training, and fewer disadvantaged adults have received such training than under the Job Training Partnership Act (JTPA). Also, due to budget constraints, the Division of Vocational Rehabilitation (DVR) entered an Order of Selection limiting service to individuals with the most severe disabilities.

The Programs

The programs included in this evaluation are grouped into three categories based on participant characteristics. Five programs serve adults, four serve adults with barriers to employment, and two serve youth.

Programs for Adults

Community and Technical College Job Preparatory Training: Training and education for a vocational associate of arts degree or a vocational certificate. This training does not include retraining of unemployed workers and classes taken by current workers to upgrade skills for their current jobs, nor does it include the other two mission areas of the colleges—academic transfer education and basic skills instruction.

Private Career Schools: Training provided by private businesses for students intending to complete vocational certificates or degrees. The schools are licensed by the Workforce Board or, if they grant a degree, by the Higher Education Coordinating Board.

Apprenticeship: Training that combines classroom instruction with paid on-the-job training under the supervision of a journey-level craft person or trade professional. Apprenticeships are governed by the Washington State Apprenticeship and Training Council and administered by the Department of Labor and Industries.

Worker Retraining at Community and Technical Colleges: Provides dislocated workers and the long-term unemployed with access to job retraining for a new career. About 5 percent of worker retraining participants receive their training at private career schools. This evaluation, however, is limited to the colleges.

WIA Title I-B Dislocated Worker Program: Federal employment and training program for dislocated workers. The Employment Security Department (ESD) administers the program at the state level. Twelve local workforce development councils, in consultation with chief local elected officials, oversee WIA activities in local areas. On July 1, 2000, WIA replaced JTPA.

Programs Serving Adults With Barriers to Employment

Adult Basic Skills Education (ABE/ESL): Literacy and math instruction for adults who are at a high school level or below. Includes courses in four categories: Adult Basic Education for adults whose skills are at or below the eighth grade level; English as a Second Language (ESL); GED Test Preparation; and High School Completion for adults who want to earn a high school diploma. Students receiving both basic skills instruction and job training are

included in the evaluation of the job preparatory training or worker retraining programs, and not the evaluation of basic skills instruction. Community and technical colleges and other organizations such as libraries and community-based organizations provide basic skills instruction.

WIA Title I-B Adult Program: Federal employment and training program for adults who experience significant barriers to employment. ESD administers the program at the state level. Twelve local workforce development councils, in consultation with chief local elected officials, oversee WIA activities in local areas.

DVR: DVR offers services to help eligible individuals with disabilities become employed. Eligibility requires that the individual have a physical, mental, or sensory impairment that constitutes or results in a substantial impediment to employment, and that they require DVR services to enter or retain employment.

Department of Services for the Blind (DSB): DSB provides vocational rehabilitation services, counseling, training, and assistive technology to help participants achieve successful employment outcomes. In order to receive services, an individual must be legally blind or have a visual disability that causes an impediment to employment, and vocational rehabilitation services are required for the individual to prepare for, enter, engage in, or retain employment.

Programs Serving Youth

Secondary Career and Technical Education: Training and vocational education in high schools and vocational skills centers in agriculture, business, marketing, family and consumer sciences, technology, trade and industry, and health occupations.

WIA Title I-B Youth Program: The program prepares youth for academic and employment success. In order to receive services, youth must be 14 through 21 years old, low income, and meet other criteria such as needing additional assistance to complete an educational program or to secure and hold employment. ESD administers the program at the state level. Twelve local workforce development councils, in consultation with chief local elected officials, oversee WIA activities in local areas. Local youth councils assist the councils with the Title I-B Youth Program.

We caution against making improper comparisons among these programs—the populations served, the types of services provided, and the lengths of training vary substantially from program to program.

Data

Findings are based on the following sources of data:

- Program records on over 96,600 individuals who left one of these programs during the 2001-02 program year. These records include information on all or most participants leaving these programs.

- Mail survey responses from 1,839 firms that hired new employees who had recently completed one of the programs.
- Telephone survey responses from approximately 8,000 participants who left one of these programs during 2001-02.¹
- For employment and earnings results, computer matches with Washington State ESD employment records and those of four other states (Idaho, Montana, Alaska, and Oregon), federal, and military personnel records. The data are incomplete, however, and employment rates among participants are underestimated. Such ESD records do not contain information on self-employment, and employment in states outside the Pacific Northwest is not included in this analysis.
- For postprogram enrollment in postsecondary education, computer matches with enrollment data from community and technical colleges and all public four-year institutions in the state. These data underestimate postprogram enrollment rates; private four-year colleges and out-of-state schools are not included in the record matches.

¹The sample sizes for the telephone survey vary by program. Samples are larger for programs that required a regional component to the analysis. As a result, the precision of reported statistics vary. For example, the 95 percent confidence interval for overall satisfaction with the program is about plus/minus 1 percentage point for community and technical college job preparatory training and plus/minus 5 percentage points for apprenticeship.

Note that, except for secondary career and technical education, the participant results presented in this report are for all participants, not just those who completed their program. Participants are defined as individuals who entered a program and demonstrated the intent to complete a sequence of program activities. The number of participants who leave their program before completion affects program results.

Summary of Findings

Participant Characteristics

The demographic characteristics of program participants are an important factor in determining program results. Programs serving participants with significant work experience and basic skills can be expected to have higher labor market outcomes than those serving participants with little work experience, low levels of literacy, and other barriers to employment.

Twenty-one percent of Washington residents, according to the 2000 Census, were people of color (i.e., non-White or Hispanic). The racial and ethnic composition of participants in six of the programs was more diverse than the state's general population (see Figure 1). The composition of the other five programs are roughly comparable to the general population in the state. Diversity was greatest in the ABE/ESL and WIA Youth programs.

Competency Gains

Desired Outcome: Washington State's workforce possesses the skills and abilities required in the workplace.

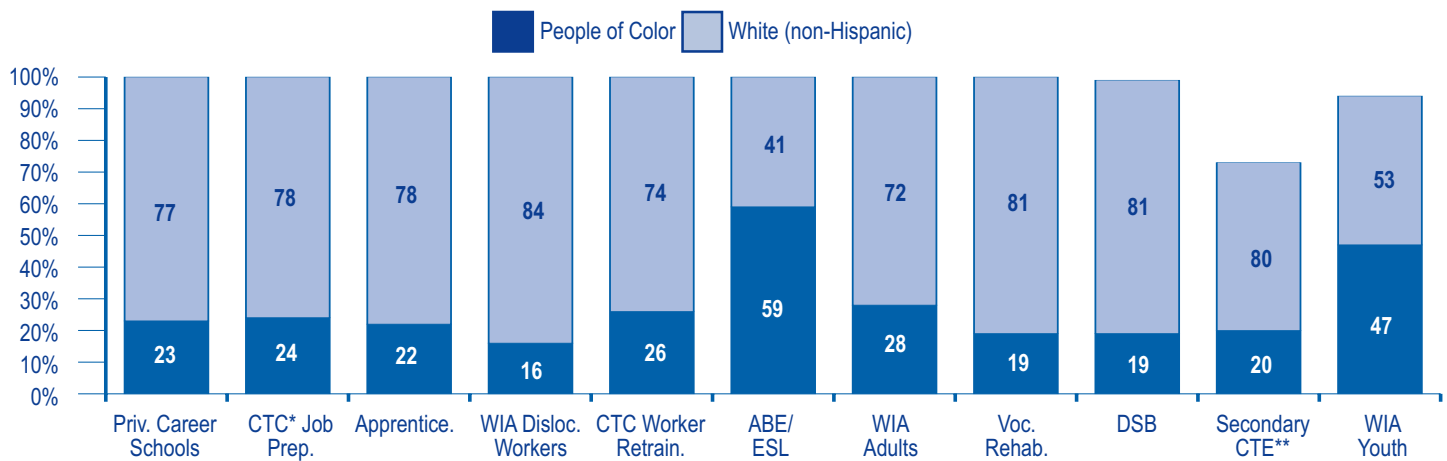
In four programs² all participants, by definition, received job-specific skills training. At the other extreme, none of the ABE/ESL students included in this study received vocational training.³ In the remaining six programs, survey results suggest that the proportion receiving job-specific skills training varied substantially (see Figure 2).

²These include Community and Technical College Job Preparatory Training, Private Career Schools, Apprenticeship, and Worker Retraining.

³This report is limited to adults who identified employment-related reasons for enrolling in ABE/ESL courses and who proceeded to take only basic skills courses. Individuals who took vocational courses in addition to basic skills are included in the analysis of Community and Technical College Job Preparatory Training.

FIGURE 1

Racial and Ethnic Composition of Program Participants in Percentages

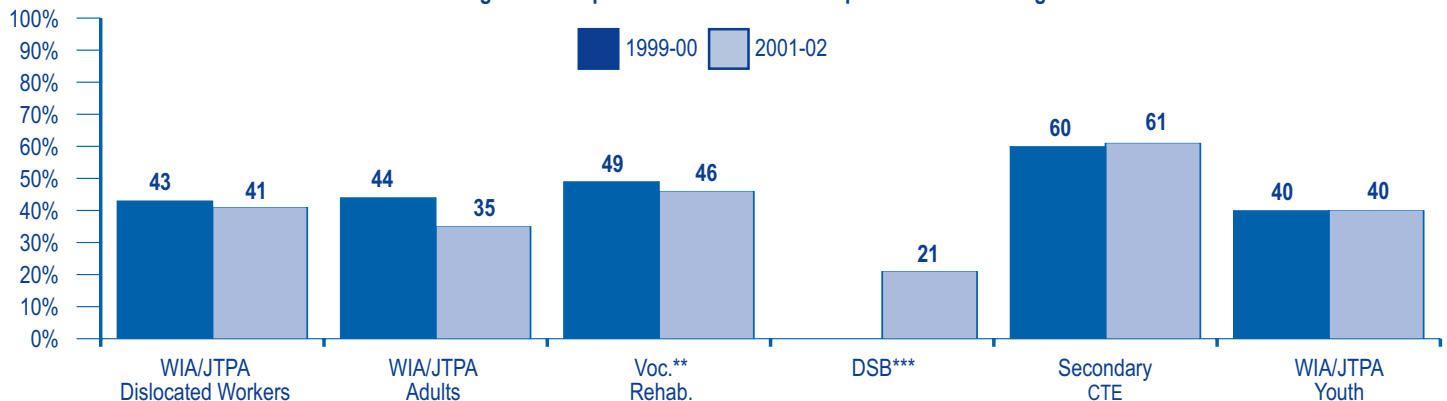


*Community and Technical Colleges (CTC)

**Secondary Career and Technical Education (CTE)

FIGURE 2

Percentage of Participants Who Received Job-Specific Skills Training*



* In some programs, such as CTC job preparation, all participants by definition receive job-specific skills training.

** Refers to receipt of job-specific skills training for new job; some also receive training to adapt previous skills to their disability.

*** First year measured for DSB.

Among those leaving programs in 2001-02, 46 percent of DVR clients and 21 percent of DSB clients said they received job-specific skills training for a new job. Note that many clients in these two programs also received training to adapt their previous job skills to their disabilities.⁴ Moreover, DVR and DSB offer other work-related services in addition to training; for example, some clients receive physical and mental restoration services, assistive technology, and communication services.

According to survey responses, 41 percent of WIA dislocated workers and 35 percent of WIA adults received job-specific skills training. (Administrative data suggest that more received training.)⁵ Figure 2 also includes information from survey responses for those leaving JTPA programs during 1999-00. The reported incidence of job-specific training for WIA dislocated workers and for youth are similar to those reported in 1999-00 for the JTPA, predecessor to WIA. Survey data suggest, however, that the percentage of adult

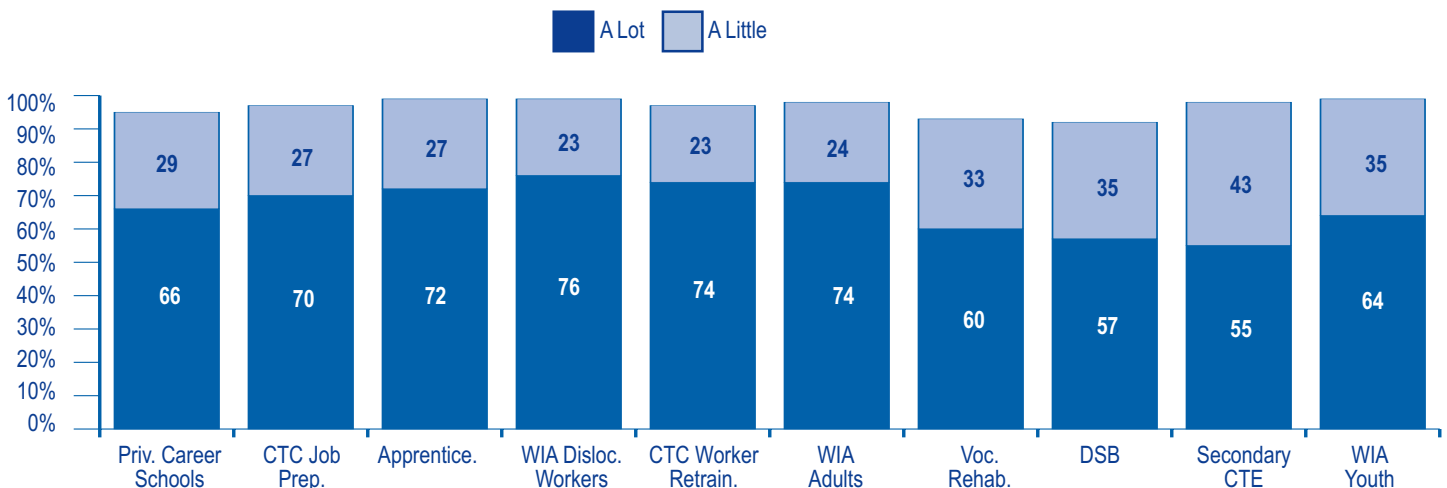
program participants receiving this training is lower under WIA. Under WIA, core services, such as skill assessment and job search assistance, are available to all adults. Intensive services and job-specific skills training are available for eligible adults unable to obtain jobs through core services alone.

Among program participants who received job-specific skills training, almost all said their job-specific skills improved, and in most cases, the participants said their skills improved a lot (see Figure 3).

⁴Among those leaving programs in 2001-02, 27 percent of DVR clients and 31 percent of DSB clients reported receiving training in how to adapt previous skills to a disability.

⁵According to administrative data, collected in the SKIES reporting system, 59 percent of dislocated workers and 46 percent of WIA adults received “occupational skills training.” Occupational skills training in the administrative records data could include a wide range of services—occupational skills training, programs that combine workplace training with related instruction, training programs operated by the private sector, skill upgrading and retraining, entrepreneurship training, job readiness training, and customized training.

FIGURE 3 Percentage of Participants Who Said Their Job-Specific Skills Improved a Little or a Lot (among those receiving training)

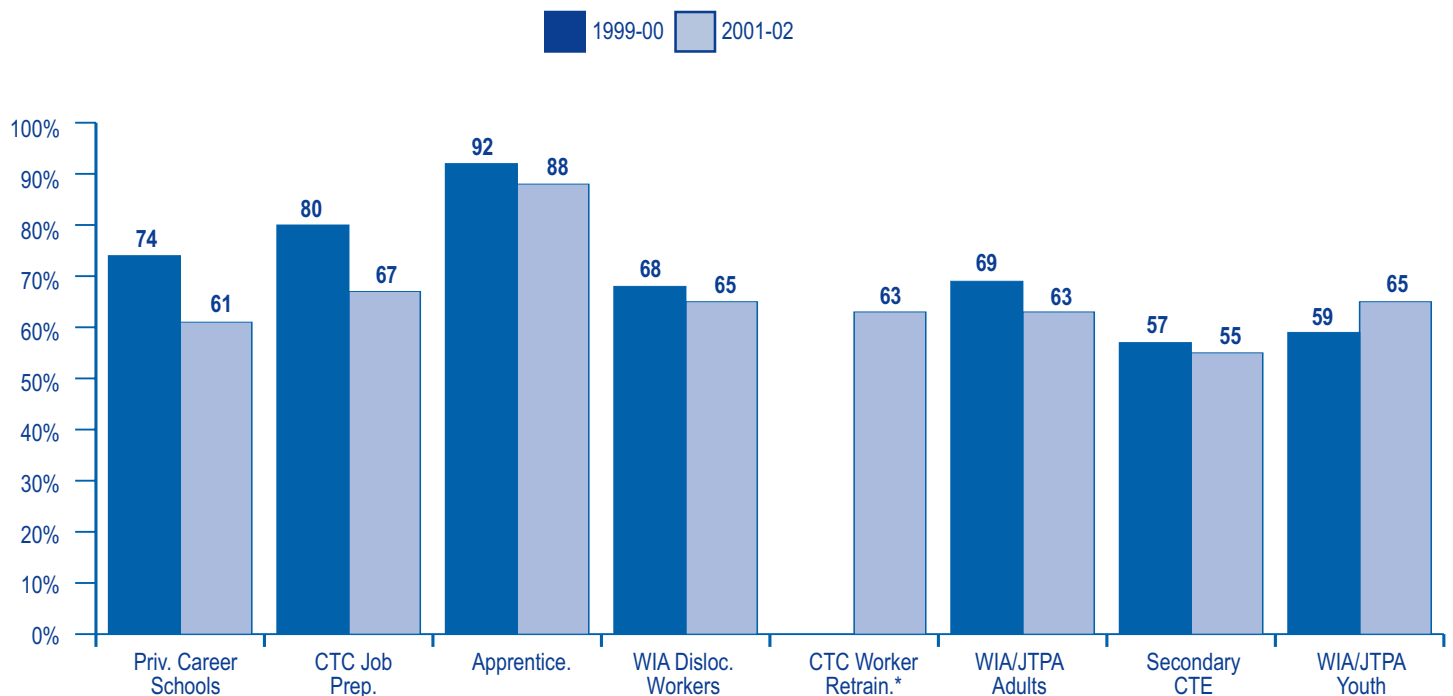


Another measure of whether training provided participants with the right skills is whether the former participants believed their training was related to their postprogram employment (see Figure 4). In all cases, a majority of program participants indicated their training was related to the job that they held nine months after leaving the program. In several programs, the percentages of former participants who said that their

training was related to their jobs decreased from the levels reported two years ago. This is especially true among private career school students, community and technical college job preparatory students, and WIA/JTPA adults. Economic conditions probably contributed to this decline. Participants leaving programs during 2001-02 faced a much weaker labor market than those leaving during 1999-00. The economic downturn may have made it more difficult to find employment in chosen fields, especially in occupations related to information technology (IT).

FIGURE 4

Training Related to Employment
 Percentage of Employed Former Participants Who Said Training Was Related to Job Held Nine Months After Leaving Program



*Estimate for 1999-00 not available.

Employment

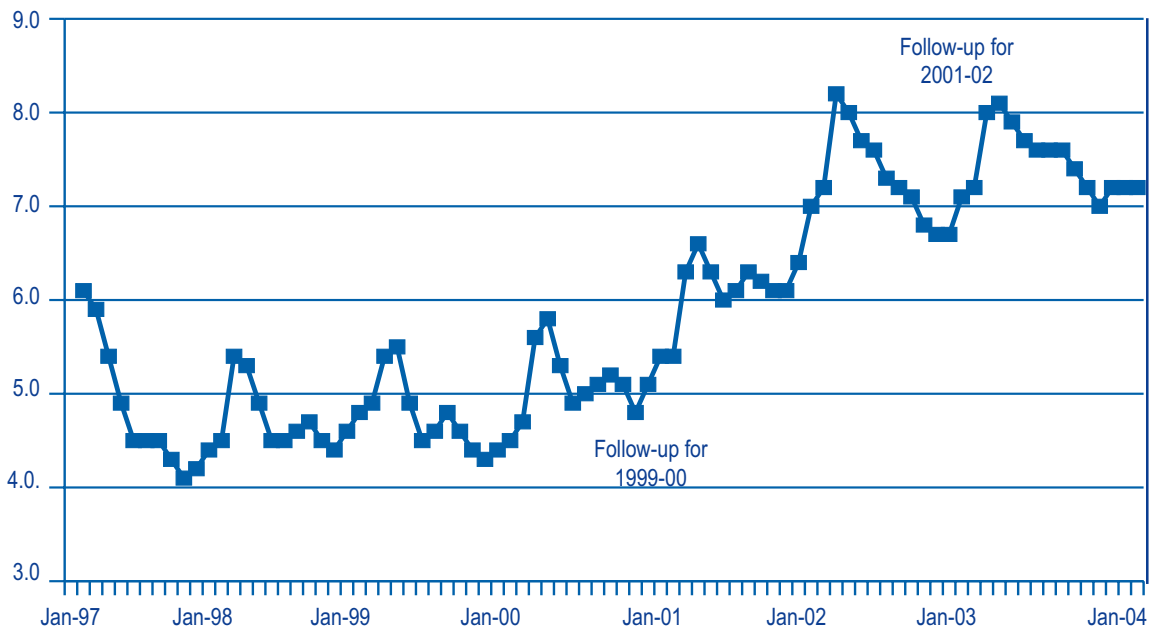
Desired Outcome: Washington's workforce finds employment opportunities.

We evaluated the labor market outcomes of program participants by examining their employment and earnings during the third quarter after leaving a program. Again, when considering outcomes over time, please note that those who left programs during 2001-02 encountered a much weaker labor market than those leaving two years

earlier. The unemployment rate was substantially higher (see Figure 5). In addition to the general weakening of the labor market, the downturn in the IT sector had a large impact on outcomes for several programs. Many participants in community and technical college job preparatory training, private career schools, and the Worker Retraining program received training in IT-related fields.

FIGURE 5

Unemployment Rate in Washington State (not seasonally adjusted)



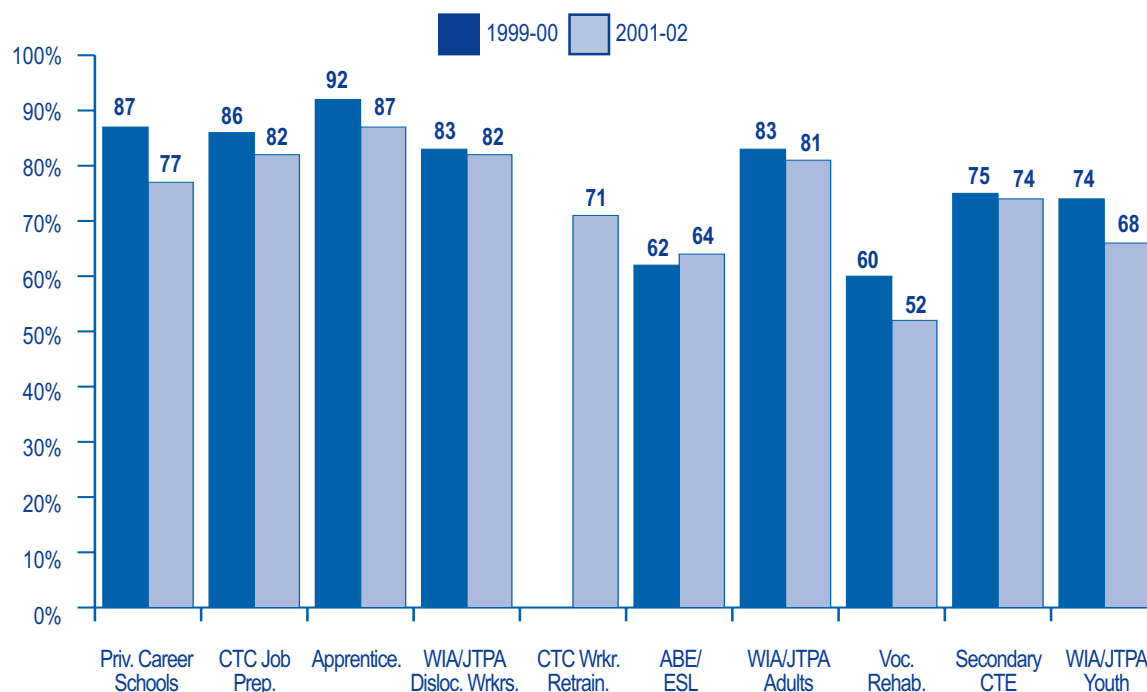
Most former program participants we surveyed reported having a job during the third quarter (six to nine months) after they left their program (see Figure 6). Employment rates vary across programs. They are highest for programs serving adults and, as expected, lower for programs serving youth.

We used ESD wage records to examine changes in employment rates between participants who left programs during the 1999-00 and 2001-02 program years.⁶ Employment rates in most programs declined due to the economic downturn. Programmatic changes also affected some outcomes.

DVR’s entering an Order of Selection contributed to the decline in reported employment among those clients. Since the end of 2000, due to insufficient staff and financial resources, federal regulations require that those with the most significant disabilities be served first. As a result, DVR clients leaving the program during 2001-02 tended to have more significant disabilities than did those in earlier cohorts.

⁶Employment rates based on matches are lower than those based on survey results. ESD records do not contain information on self-employment. The estimates also exclude employment in states that are not included in our matching process.

FIGURE 6
Percentage of Participants Self-Reporting Employment Six to Nine Months After Leaving Their Program



There were also significant changes in the WIA program for disadvantaged youth. WIA replaced JTPA on July 1, 2000; the results for 1999-00 in Figure 7 are for JTPA Title II-C. The characteristics of youth participants changed. Especially important is the greater enrollment of younger youth under WIA than was the case during the last year of JTPA. Younger youth are less likely to be employed than older youth.

Earnings

Desired Outcome: Washington’s workforce achieves a family-wage standard of living from earned income.

Research has shown that postprogram earnings are very much affected by the characteristics of the participants who entered the program. Youth had the lowest postprogram hourly wages and quarterly earnings, and adults the highest (see Figure 8). Earnings and hourly wages were

FIGURE 7
Percentage of Participants With Employment Reported to ESD Six to Nine Months After Leaving Their Program

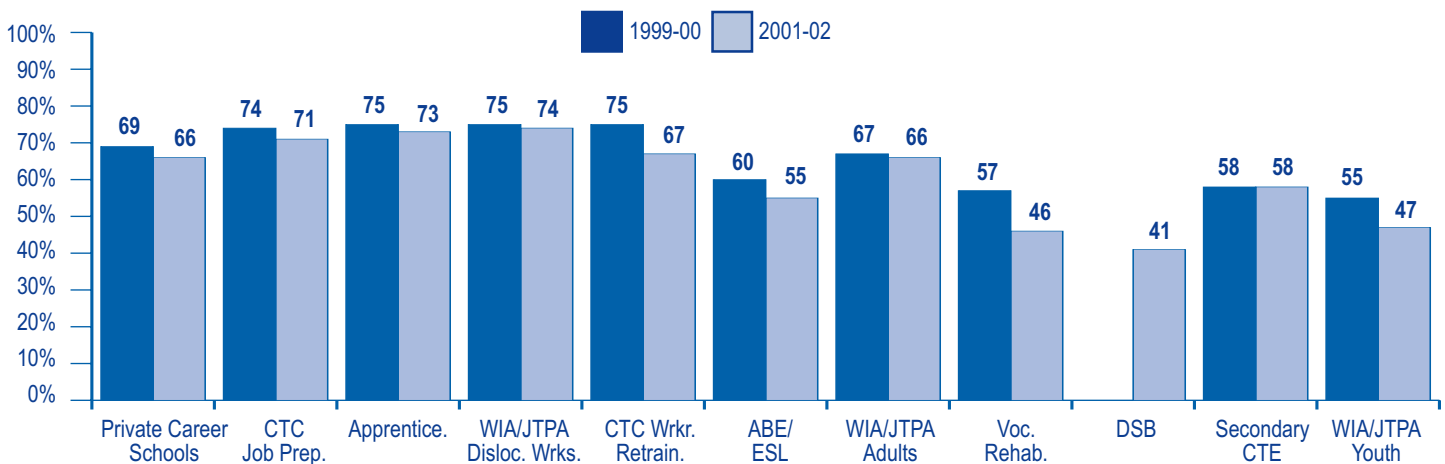


FIGURE 8
Median Hourly Wages and Annualized Earnings Six to Nine Months After Leaving the Program

		Hourly Wages of 2001-02 Participants	Annualized Earnings of 2001-02 Participants	Percentage Change From 1999-00* Hourly Wages	Percentage Change From 1999-00* Earnings
PROGRAMS FOR ADULTS	CTC Job Preparatory Training	\$12.50	\$21,436	-1%	-5%
	Private Career Schools	\$11.72	\$19,453	1%	-3%
	Apprenticeship	\$20.91	\$31,380	5%	-6%
	WIA Dislocated Workers	\$13.84	\$26,297	4%	6%
	CTC Worker Retraining	\$12.75	\$21,648	-5%	-13%
PROGRAMS FOR ADULTS WITH BARRIERS	ABE/ESL	\$9.20	\$15,104	-4%	-4%
	WIA Adults	\$10.35	\$16,937	3%	6%
	Vocational Rehabilitation	\$9.91	\$12,446	5%	-8%
	DSB	\$13.55	\$20,006	na	na
PROGRAMS FOR YOUTH	Secondary CTE	\$8.25	\$10,354	-3%	-2%
	WIA Youth**	\$7.97	\$8,213	na**	na**

*All wages and earnings are reported in 2003 Quarter One dollars.

**Wages and earnings for 2001-02 WIA Youth are for those not enrolled in high school. Comparable estimates are not available for 1999-00 JTPA Youth.

particularly high for individuals who participated in apprenticeship. In addition to the quality of the program, this finding reflects the length of the training and the labor market in their occupations and industries. In most programs, due to the weaker labor market, earnings were lower than reported two years ago.

For most programs, postprogram earnings and hourly wages were lower for women than for men who participated in the same program (see Figure 9). The especially large wage gap in apprenticeship is due to the concentration of women in relatively new apprenticeship programs that provide training outside the construction and machinist trades. Among those leaving apprenticeships during 2001-02, 44 percent of women (and virtually no men) left programs in cosmetology, early childhood education, and teaching/library

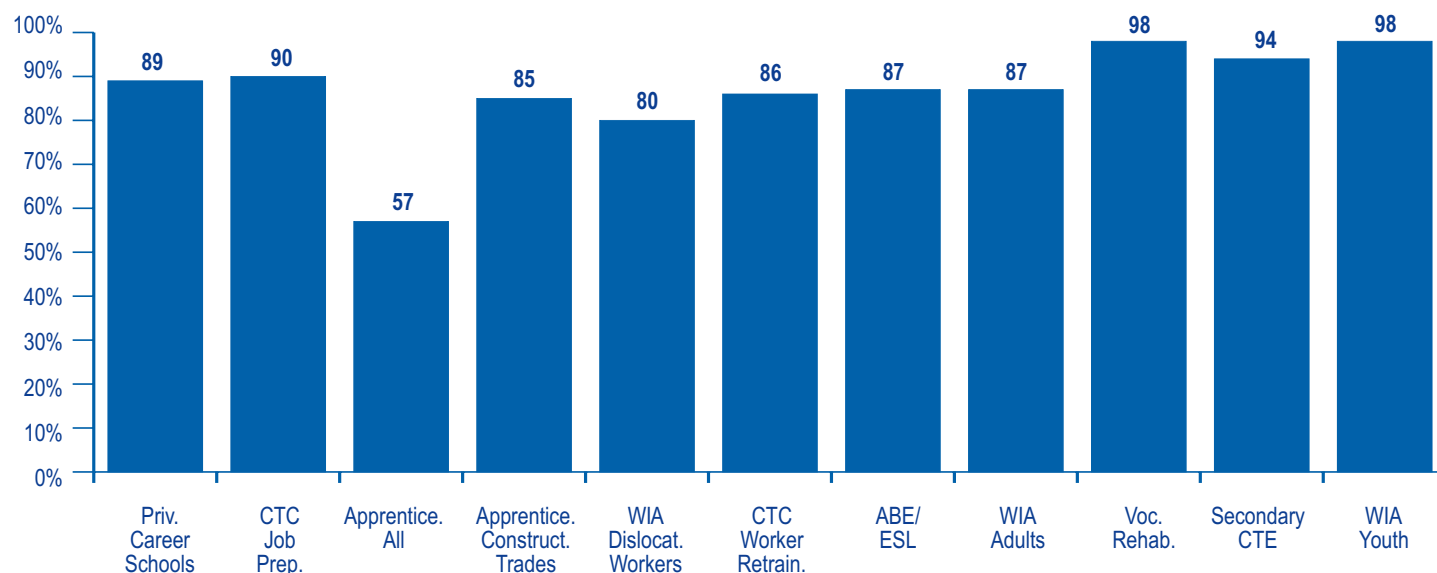
assistantship. Within the construction trades, especially among those who completed their apprenticeships, male and female journey level workers earned closer to the same wage.

Earnings were also lower for people with disabilities. Earnings were lower for people of color than for whites in eight of the eleven programs.⁷ These differences in postprogram wages and earnings by gender, disability status, and race/ethnicity generally reflect differences observed in the overall labor market and may be due to some combination of occupational choice, as seen above in apprenticeship, and labor market discrimination.

⁷No substantial racial/ethnic earnings differentials were observed for ABE/ESL and the WIA Youth program. There were too few cases to examine racial differences in outcomes among DSB clients.

FIGURE 9

Median Hourly Wages of Women Relative to Men During Third Quarter After Training in Percentages



Participant Satisfaction

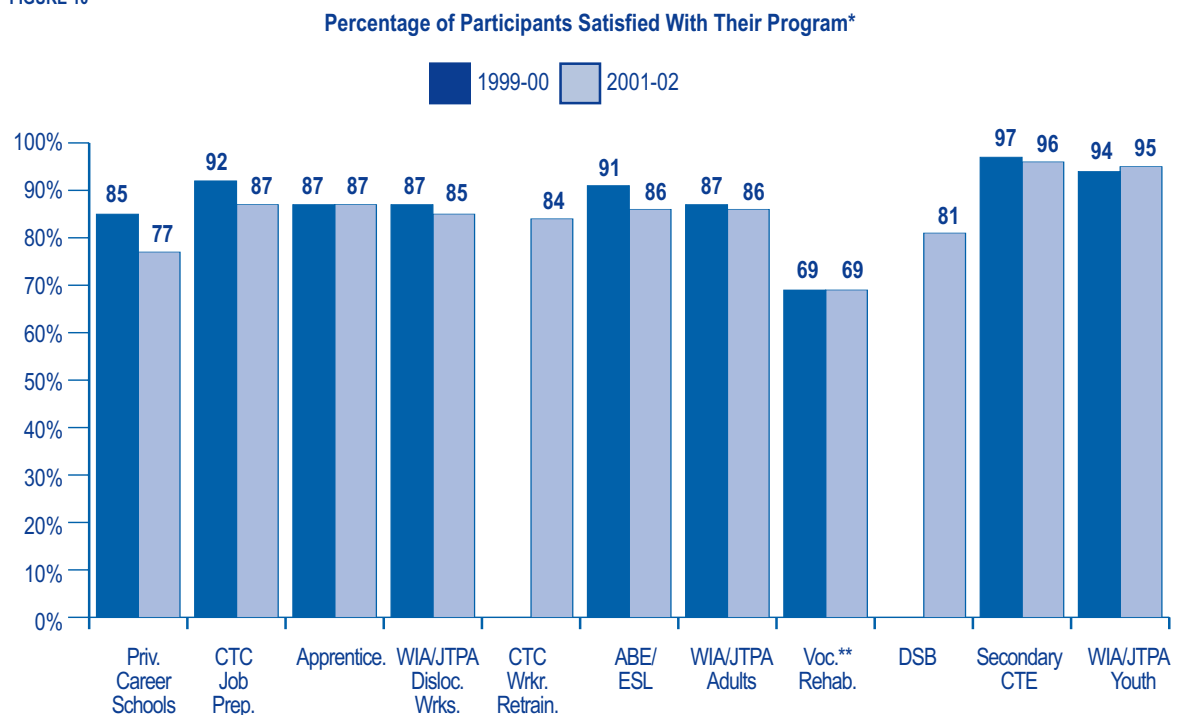
Desired Outcome: Workforce development participants and their employers are satisfied with workforce development services and results.

The vast majority of participants were satisfied with their program (see Figure 10). Satisfaction levels, measured by averaging the percentage reporting that they met their educational objectives and the percentage satisfied with the overall quality of their programs, are high for all programs. Reported levels of satisfaction decreased somewhat among private career school, community and technical college job preparatory, and ABE/ESL participants.

Satisfaction levels for other programs are similar to those reported by 1999-00 participants.

Although results vary by program, the aspects of programs that tend to have the lowest participant satisfaction were support services. Most participants reported receiving the services they required. Many participants in several programs, however, reported an unmet need for information on job openings. Cohorts of program participants reported this unmet need in previous evaluations.

FIGURE 10



*Average of percentage meeting educational objectives and percentage satisfied with overall quality of their program.

**Figure is the percentage reporting overall satisfaction with the program.

Employer Satisfaction

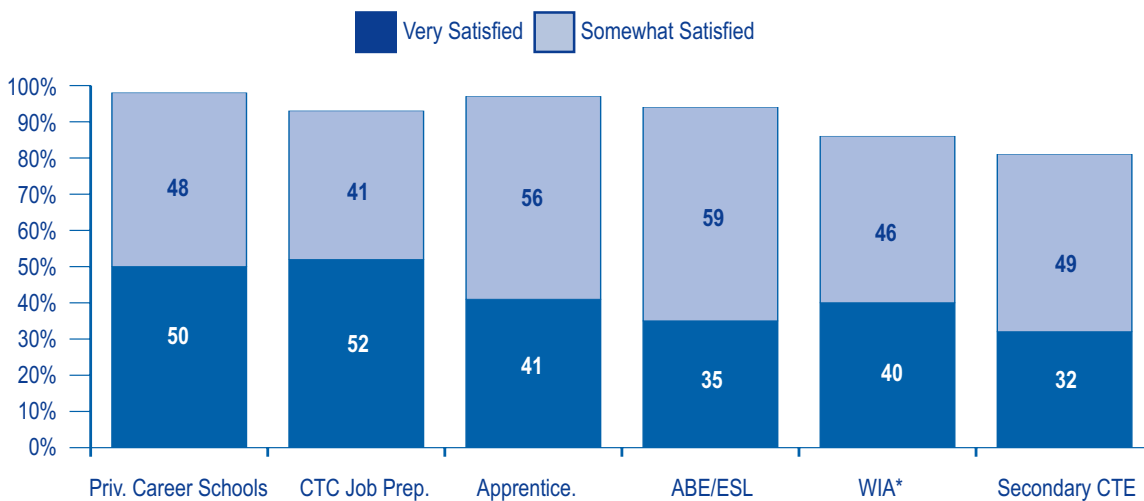
Desired Outcome: Workforce development participants and their employers are satisfied with workforce development services and results.

Employers were generally satisfied with the overall work quality of new employees who recently completed one of these programs

(see Figure 11). Still, there is substantial room for improvement in the percentages of employers reporting they are very satisfied with the quality of new hires.

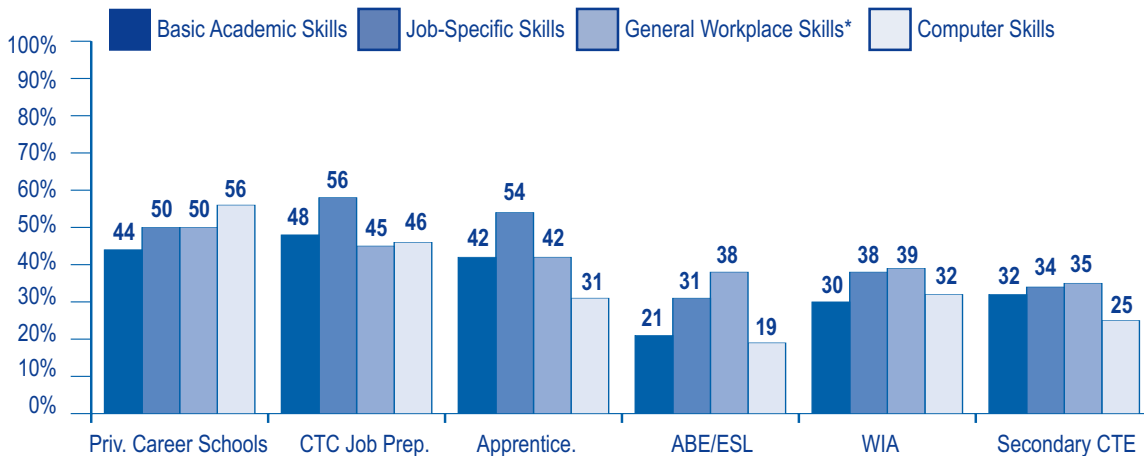
Figure 12 shows the percentage of employers reporting they are very satisfied with employees mastery of each type of skill.

FIGURE 11
Percentage of Employers Satisfied With the Overall Work Quality of New Employees Who Recently Completed a Program



*Refers to all WIA participants (adult, dislocated worker, and youth).

FIGURE 12
Percentage of Employers Very Satisfied With Skills of New Employees (average across skills in the selected categories)



*General workplace skills include team work, problem-solving, communication, work habits, accepting supervision, and adaptability to change.

Net Impact and Cost-Benefit Evaluation

Return on Investment

Desired Outcome: Workforce development programs provide returns that exceed program costs.

Every four years the Workforce Board conducts net impact and cost-benefit analyses of workforce development programs. The last net impact study, which was conducted in 2002, examined the experience of participants who left programs during the 1999-00 and 1997-98 program years. Study results were presented in the last edition of *Workforce Training Results*, and these results are reproduced here for informational purposes. (The next such study will occur in 2006 and will examine the experience of participants leaving programs in 2003-04 and 2001-02.)

Net impact and cost-benefit evaluations attempt to estimate what happens to program participants compared to what would have happened if they had not participated in a workforce development program. The objective is to determine the difference that the program makes for the participant. The Workforce Board contracted with the W.E. Upjohn Institute for Employment Research⁸ to conduct the net impact and cost-benefit evaluations. Upjohn performed these evaluations for nine of the ten programs.⁹

Individuals who participated in these workforce development programs were compared to similar individuals who didn't. The comparison groups were selected from

people who registered for services with the state's Employment Service.¹⁰ An empirical approach, called statistical matching, was used to find Employment Service registrants who most closely matched each program's participants in terms of a long list of characteristics.¹¹

For the cost-benefit analyses, Upjohn calculated the value of the net impacts on participant earnings, employee benefits, social welfare benefits, Unemployment Insurance (UI) benefits, and taxes.¹² Benefits and costs were estimated for both the observed postprogram period and out to the age of 65,¹³ the normal age for labor force withdrawal.

⁸Dr. Kevin Hollenbeck headed the team.

⁹Net impacts were not estimated for the DVR Program, because no statistically viable comparison group was available for DVR clients.

¹⁰A different source of data was used for the comparison group for secondary CTE. The Office of Superintendent of Public Instruction collects data on high school seniors. This Graduate Follow-Up Study was used to identify both students completing CTE as well as comparable students who had not.

¹¹These include demographics (e.g., race, ethnicity, gender, disability status, prior education, age, region, or the state), preprogram earnings and employment history, UI benefit receipt history, and preprogram receipt of public assistance.

¹²Upjohn estimated the impact of the net change in earnings on social security, Medicare, federal income, and state sales taxes.

¹³In order to compare benefits and costs in terms of net present values, postprogram benefits and costs are discounted by 3 percent per year and all figures are stated in 2001 dollars.

Upjohn found that during the third year after program participation, the payoffs to education and training are strong and pervasive (see Figure 13). The employment impacts for all programs are positive against those of the comparison group. For example, CTC program completers had, on average, an employment rate 7 percent above that of the comparison group. Seven of the nine programs increased the average earnings of participants. JTPA Title II-C for disadvantaged youth and adult basic education, however, have earning impacts that are essentially zero. While no effect was found for these two programs on the average earnings among those working, total earnings among participants of these two programs increased because more participants had found employment than the comparison group. All other programs show sizeable earnings impacts among those working that, in percentage terms, are approximately 20 percent. The combined effects on average earnings and employment rates are associated with sizable impacts on total lifetime earnings.

Figure 14 compares lifetime participant benefits to public costs. For example, during the course of working life (to age 65), the average community and technical college job preparatory student will gain about \$151,000 in net earnings (earnings minus foregone earnings while in training) and employee benefits. These are net gains compared to the earnings of similar individuals who did not receive training (discounted at 3 percent and expressed in 2001 dollars).

The ratio of participant benefits to program costs, not considering impacts on social welfare benefits or taxes, is \$151,365 to \$6,916, or almost 22 to 1. Lifetime participant benefits far exceed public costs for each of the programs presented in

FIGURE 13
Long-Term Employment and Earnings Net Impacts

	Employment Rate Impact	Quarterly Earnings Impact (among those working)	Lifetime Earnings Impact**
CTC Job Preparatory Training	7.0%	\$1,185	\$127,283
Apprenticeship	5.3%	\$1,908	\$162,443
JTPA III Dislocated Workers	7.3%	\$466	\$75,293
CTC Worker Retraining	6.3%	\$423	\$66,268
JTPA II-A Adults	7.4%	\$543	\$61,565
Adult Basic Skills	1.6%	*	\$5,263 ¹⁴
Secondary CTE	5.7%	\$451	\$59,363
JTPA II-C Youth	5.3%	*	\$30,510 ¹⁵

Long-term refers to impacts observed 8 to 11 quarters after leaving the program.

** Not statistically significant at the 0.10 level.*

***This is the increase in earnings (above that of the comparison group) projected to age 65 and discounted at 3 percent. Includes effects from increased employment and increased earnings among those employed.*

Long-term impacts were not estimated for private career school programs because of data constraints.

¹⁴Increases in employment more than offset the small negative earnings impacts among the employed.

¹⁵Increases in employment more than offset the small negative earnings impacts among the employed.

Figure 14. Cost-benefit comparisons were not calculated for apprenticeship and private career school programs because of data constraints. However, the participant benefits from these programs, discussed in the full report, were achieved with little taxpayer expense.

Tax revenues are also affected by the change in participant earnings (see Figure 14). For example, during the entire post-training period to age 65, the public gains an estimated \$18,936 in tax revenues for each JTPA Title III participant. Estimated increases in tax receipts alone outweigh public costs for each program. Moreover, several of the programs were found to reduce reliance on social welfare (Temporary Assistance for Needy Families, food stamps, and medical benefits). The JTPA programs for disadvantaged adults and youth, in particular, were estimated to substantially reduce social welfare receipts during participant’s lifetime.

FIGURE 14
Participant Benefits, Public Costs, and
Increases in Tax Receipts to Age 65

	Participant Benefits*	Public Costs**	Increased Tax Receipts***
CTC Job Preparatory Training	\$151,365	\$6,916	\$32,012
JTPA III Dislocated Workers	\$78,177	\$2,575	\$18,936
CTC Worker Retraining	\$65,025	\$4,692	\$16,666
JTPA II-A Adults	\$73,518	\$3,384	\$15,484
Adult Basic Skills	\$6,038	\$983	\$1,324
Secondary CTE	\$71,236	\$870	\$14,930
JTPA II-C Youth	\$36,269	\$2,325	\$7,673

* Present value of the additional lifetime earnings and employee benefits less foregone earnings during program participation.

**State and federal program costs per participant.

***Present value of additional social security, Medicare, federal income, and state sales taxes generated by increased participant earnings to age 65.

Community and Technical Colleges Job Preparatory Training

Thirty-four community and technical colleges provide job preparatory training throughout the state. This training provides students with the skills required for specific occupations. Job preparatory training does not include students who intend to transfer to a four-year college or university, students 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. Worker Retraining students are also excluded from the analysis presented below; the Worker Retraining program is evaluated separately.

Information was obtained on 31,722 job preparatory students who completed or otherwise left a community or technical college during the 2001-02 school year.¹ Of these former students, 58 percent completed their programs prior to leaving the colleges: 15 percent received an associate degree, 14 percent received a vocational certificate, 15 percent were deemed ready for work because they completed 45 or more credits, and 14 percent completed a noncredit vocational program that lead to a certification.

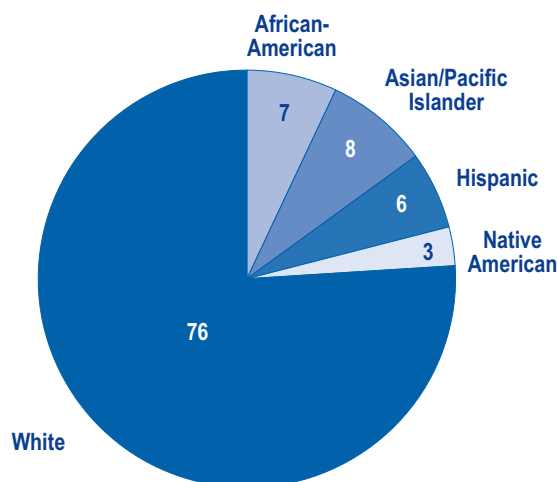
This study includes information from students' college enrollment records and Employment Security Department (ESD) wage files from Washington, Idaho,

Montana, Alaska, and Oregon. Federal and military employment records were also included. In addition, 2,107 of the students completed a telephone survey, providing additional data on their employment and satisfaction with the training. Survey responses from 506 firms that hired new employees who recently completed a job preparatory program provide information on employer satisfaction with the skills of these graduates.

Participant Characteristics

Racial and ethnic minorities are well represented among job preparatory students. About one in every four students included in this study are people of color (see Figure 1). The proportion of job preparatory students who are people of color has increased steadily from 18 percent in 1993-94 to 24 percent in 2001-02.

FIGURE 1
Percentage of Community and Technical College Job Preparatory Students by Race and Ethnicity



¹In order to be included in this study, students had to have identified themselves as vocational students and have either enrolled for six or more vocational credits or have completed three or more vocational credits.

Participation by African-Americans is especially high compared to their share of the state population.² Fifty-five percent of the students are women.

When they enrolled, just over half of the students had not previously attended college: 23 percent had attended college without receiving a credential, 13 percent had a certificate or associate degree, and 9 percent had baccalaureate degrees. The

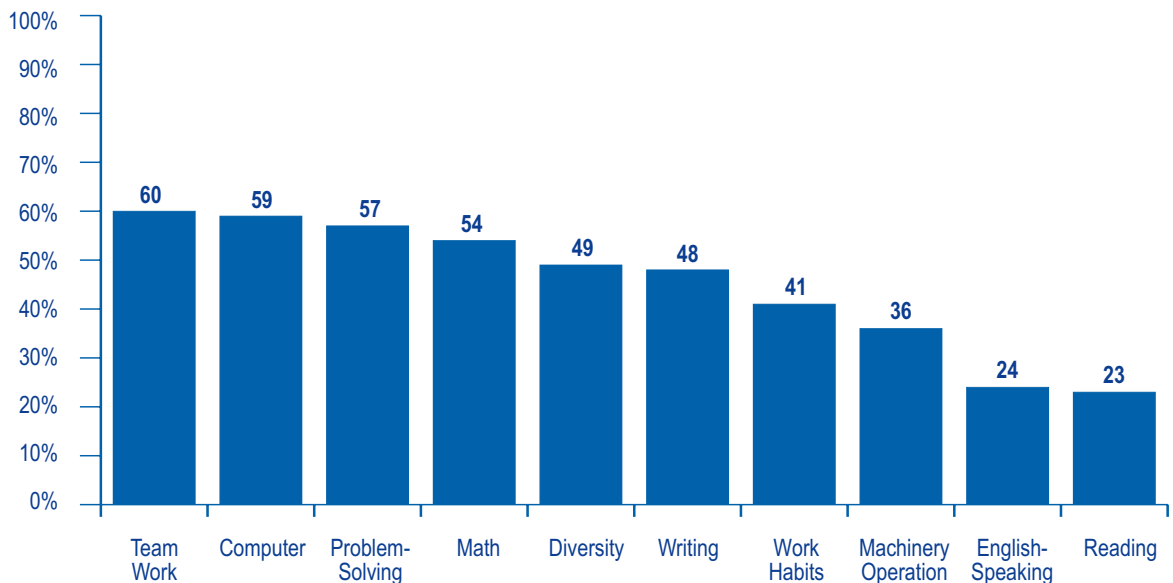
²According to the 2000 Census, 79 percent of Washington residents are non-Hispanic whites. Hispanics now comprise 7.5 percent of the state's population. Racial composition figures depend upon how multiracial residents are counted. Including those who report more than one race, about 4 percent of our residents are African-American, nearly 3 percent are Native American, and just over 7 percent are Asian/Pacific Islander. Among those reporting only one race, 3 percent are African-American, less than 2 percent are Native American, and 6 percent Asian/Pacific Islander.

median age upon leaving training was 30; one quarter were under age 23, and another quarter were over age 40.

Competency Gains

The primary goal of workforce training and education is to provide individuals with the skills and abilities required in the workplace. Job preparatory students mirrored this purpose in their survey responses. The most common reason students cited for enrolling in college was to “get skills for a new job” (82 percent). Students also receive other types of training, in addition to learning job-specific skills. Between 41 and 60 percent of students also received training in team work, computer skills, problem-solving, and other workplace skills (see Figure 2). Over half received training in math skills.

FIGURE 2
Percentage of Community and Technical College Job Preparatory Students Receiving Various Skills Training



According to survey results, most students reported their skills in these areas improved (see Figure 3). Seventy percent said their job-specific skills improved “a lot”; down from eighty percent reported two years ago. Over 60 percent reported machinery operation and computer skills improved substantially. Fewer reported their general workplace skills (problem-solving, team work, work habits) or basic skills improved a lot.

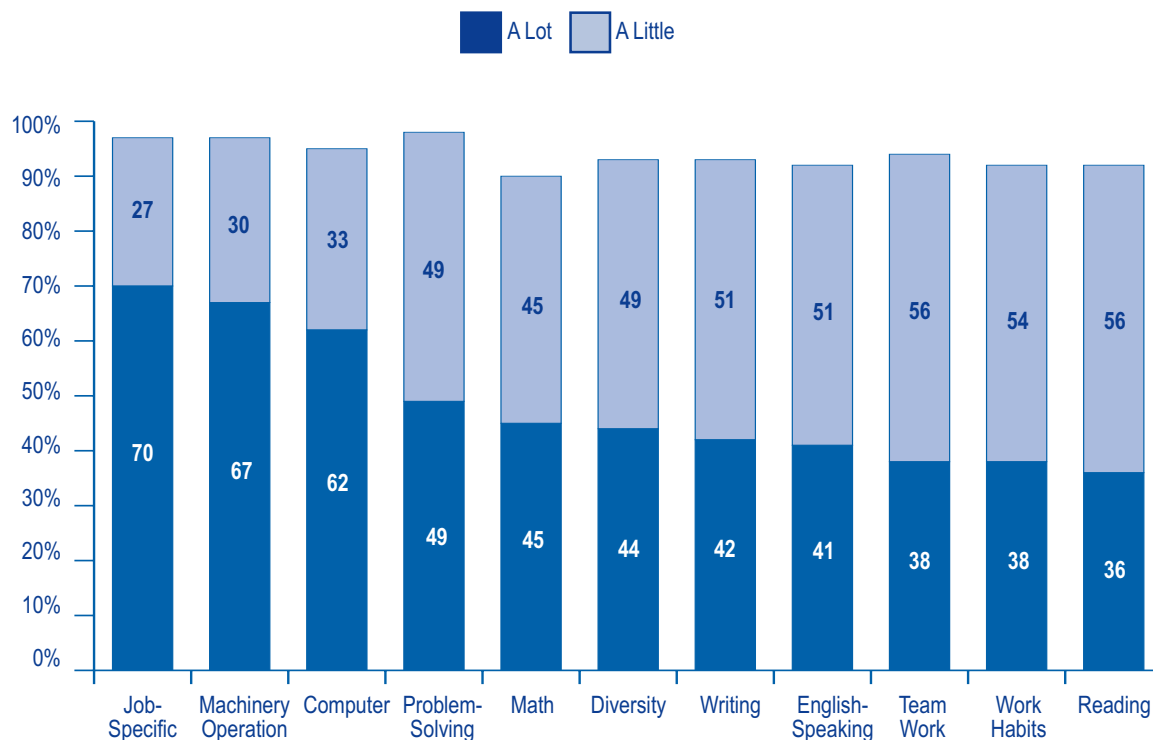
Among students employed six to nine months after leaving the program, 67 percent reported their education and training related to their job; down considerably from the 80 percent reported two years ago.

Participant Satisfaction

Eighty-nine percent of former students reported they were very or somewhat satisfied with the program as a whole. This is virtually the same level of satisfaction as reported two years ago. Overall, 85 percent reported they had met their educational objectives. Students tended to be very satisfied with the facilities, equipment used, and quality of teaching. They were less satisfied with advice on selecting a program.

FIGURE 3

Percentage of Community and Technical College Students Receiving Various Skills Training Who Reported Their Skills Improved a Little or a Lot



The survey also asked students about support services related to their college training. The services most frequently needed were financial assistance (50 percent) and information about job openings (45 percent). Roughly one quarter of students required assistance with resumé writing, career counseling, interviewing skills, and information about government services (see Figure 4).

Most students received the support services they needed. The major exception is information about job openings. About one quarter of all students said their need for this information was not met.³ Students have been reporting a substantial unmet need for job opening information for several years (see Figure 5).

³Unmet needs are measured as the percentage of students who needed a service but either did not receive it or what they received did not meet their needs.

FIGURE 4

Community and Technical College Job Preparatory Students Needing a Service and Percentages Leaving With Needs Unmet

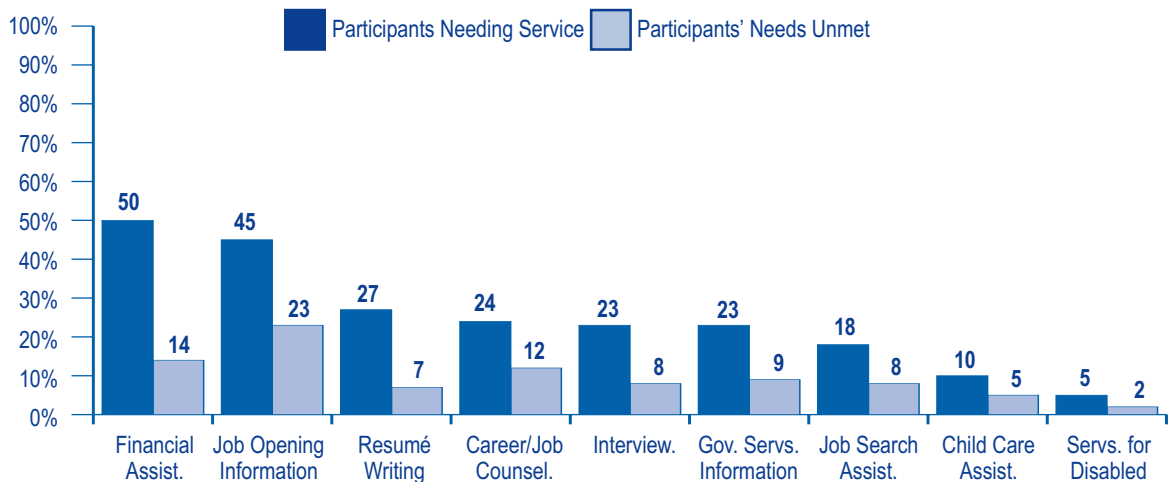
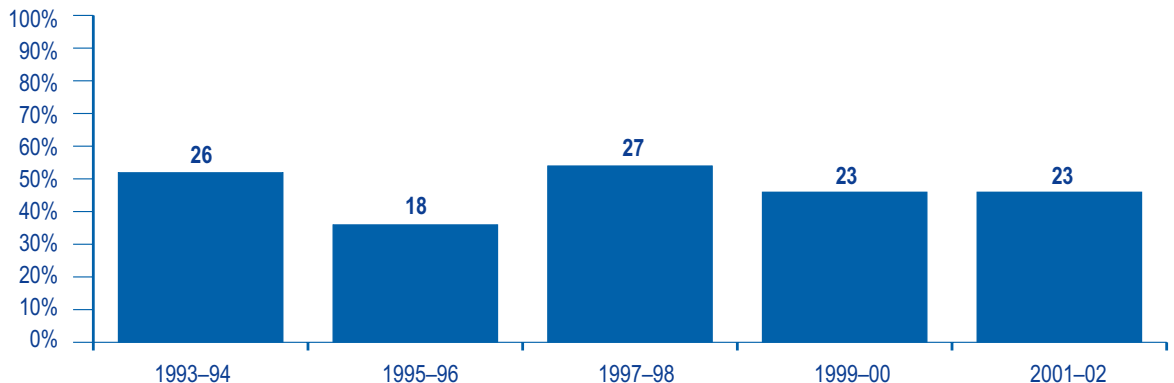


FIGURE 5

Percentage of Job Preparatory Students Leaving College With Unmet Need for Job Opening Information



Employer Satisfaction

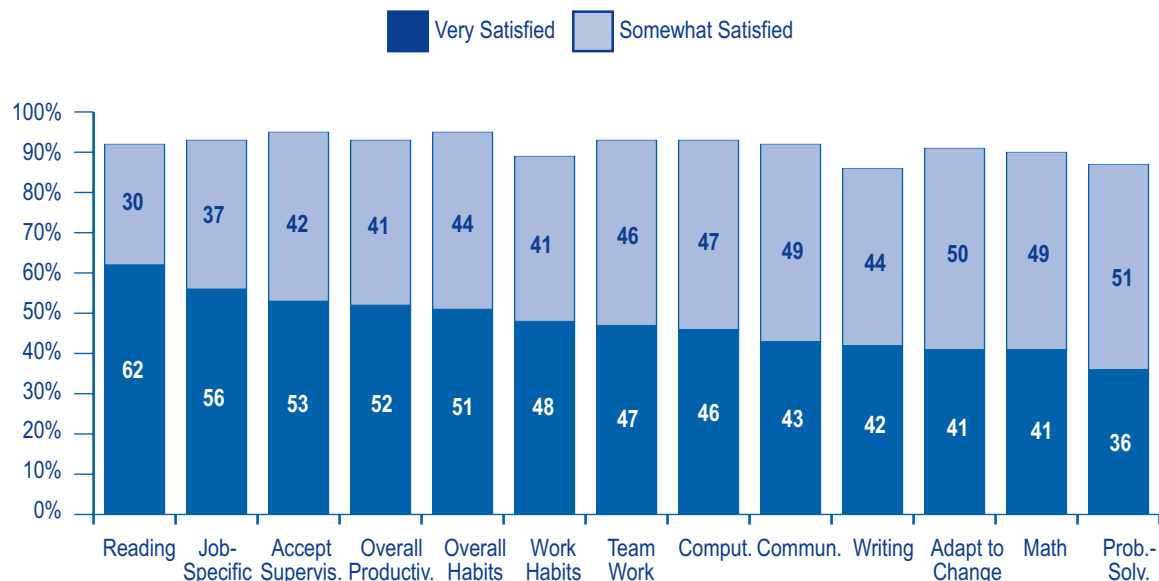
The Workforce Training and Education Coordinating Board’s (Workforce Board) employer survey, which was administered during the fall of 2003, asked firms to evaluate new employees who had recently completed a vocational program at a community or technical college. Among the 506 employers who provided such an evaluation, 95 percent said they were either somewhat or very satisfied with the overall productivity of these new employees. Firms tended to be very satisfied with the job-specific skills of former students. They were less likely to be very satisfied with their communication, writing, math, and problem-solving skills (see Figure 6).

Employment and Earnings

According to the survey responses, 82 percent of 2001-02 job preparatory students were employed during the period six to nine months after leaving their program (see Figure 7). To find out more about the former students’ postprogram employment and earnings, we matched student records with ESD wage files from Washington and neighboring states. These files contain information only on those individuals with employment reported for Unemployment Insurance (UI) purposes (85 to 90 percent of the total employment in state, with self-employment being the largest type of employment not covered).

FIGURE 6

Percentage of Employer Satisfaction With New Employees Who Had Recently Completed a Job Preparatory Program at a Community or Technical College



Record matches found 71 percent of 2001-02 students had employment during the third quarter after they left their program. Their median wage⁴ was \$12.50 per hour, and they had median annualized earnings of \$21,436. The median wage of job preparatory students is relatively high, but there is considerable variation in wages. While one quarter earned more than \$17.71 an hour, another quarter had jobs that paid less than \$9.31 an hour.

During the third quarter after leaving their program, the typical (median) student with reported employment had sufficient earnings

to support a household of five persons above the poverty level. Using a higher income standard, the typical employed student earned enough to support 1.6 persons at a family wage of twice the poverty level. According to the survey responses, 71 percent of those with a job nine months after leaving their program received medical benefits as part of their employment, and 48 percent reported pension benefits. Employment rates, earnings, and hourly wages of job preparatory students increased substantially during the economic expansion of the 1990s. During the past two years, however, labor market outcomes declined (see Figures 7 and 8). The

⁴All wages and earnings are stated in first quarter 2003 dollars.

FIGURE 7
Employment and Earnings of Community and Technical College Job Preparatory Students in the Third Quarter After Leaving the Program

	1995-96	1997-98	1999-00		2001-02	
			All	Completers	All	Completers
Percentage self-reporting employment during third quarter after leaving program	86	83	86		82	
Percentage with employment reported by employers to ESD the third quarter after leaving program	62	73	74	77	71	74
Median quarterly hours worked of those working	452	451	468	481	455	455
Percentage employed full-time of those working (averaging 30 or more hours/week)	63	65	66	68	62	64
Median annualized earnings of those working	\$18,588	\$20,792	\$22,363	\$24,093	\$21,361	\$22,281
Median annualized earnings of those working and not enrolled in further education		\$20,880	\$22,449	\$24,193	\$21,436	\$22,314
Size of household in which median earnings would support at poverty level	4.1	4.8	5.3	5.8	5.0	5.2
Size of household in which median earnings would support at twice poverty level	1.1	1.5	1.7	2.0	1.6	1.7
Median hourly wage of those working	\$10.88	\$11.70	\$12.64	\$13.16	\$12.50	\$12.81
Percentage receiving medical benefits from employment (self-reported)	67	65	68		71	
Percentage receiving pension benefits from employment (self-reported)	44	43	46		48	

Notes: Earnings and wages are expressed in first quarter 2003 dollars. Poverty levels are based on federal poverty guidelines identified by the Department of Health and Human Services.

business cycle contributed to the decline in postprogram employment and earnings among job preparatory students leaving programs during the 1999-00 and 2001-02 school years. The more recent cohort faced a much weaker labor market.⁵

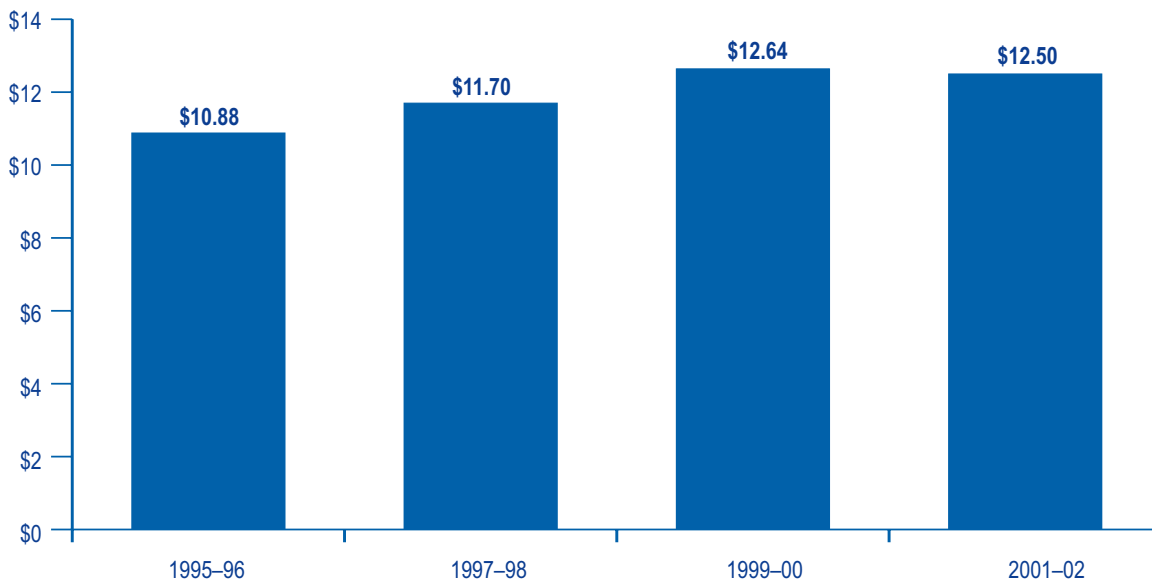
In addition to the general weakening of the labor market, the downturn in the information technology (IT) sector had a

large impact on outcomes for community and technical college job preparatory programs. Roughly one in every five job preparatory students during 2001-02 was enrolled in an IT program. Employment and earnings outcomes for IT students leaving the colleges during 1999-00 were very strong. The students leaving during 2001-02 had a much rougher time. The postprogram employment rate for IT programs declined by 7 percentage points between these two years; average wages declined by 7 percent. Declines in the labor market outcomes for IT students were at least partially offset by gains in other programs. Rising mean wages for those leaving health care programs and protective services were especially impressive.

⁵The Workforce Board developed a regression model that estimates the impact of unemployment rates, demographic characteristics, and other socioeconomic variables on postprogram employment among job preparatory students. This model suggests that increases in unemployment rates explain much of the observed decline in postprogram placements.

FIGURE 8

Median Hourly Wages of Job Preparatory Students Six to Nine Month After Leaving College



Employment among former job preparatory students is concentrated in services, trade, and manufacturing (see Figure 9).

FIGURE 9
Industry of Employment of Job Preparatory Students in the Third Quarter After Leaving College

Industry Group	Employment
Agriculture, Forestry, Fishing	1.5%
Mining	0.1%
Utilities	0.2%
Construction	4.1%
Manufacturing	10.4%
Food	1.1%
Wood Products	0.8%
Paper	0.3%
Fabricated Metal Products	0.9%
Computer and Electronics	0.7%
Aerospace	2.1%
Ship and Boat Building	0.5%
Other Manufacturing	3.9%
Wholesale Trade	3.5%
Retail Trade	14.7%
Transportation and Warehousing	3.1%
Information	2.7%
Software Publishing	0.5%
Telecommunications	1.1%
Internet Services	0.3%
Other Information	0.9%
Finance, Insurance	3.9%
Real Estate	1.8%
Services	48.2%
Professional and Technical Services	5.2%
Administrative Support	8.3%
Educational Services	3.8%
Health Care	12.4%
Social Assistance	3.1%
Arts, Entertainment, Recreation	2.2%
Accommodation and Food Services	7.7%
Other Services	5.5%
Public Administration	5.9%
Correctional Institutions	3.6%
Other Public Administration	2.3%
TOTAL	100%

Earnings varied by gender, race, and ethnicity. Among those with employment reported to ESD during the third quarter after leaving the program, the median earnings for female students was 82 percent that of males; their median hourly wage was 90 percent that of males (\$11.98 versus \$13.33). Some of this gap is due to gender differences in program enrollments.⁶ Women do enroll in high-wage programs; they account for 9 out of every 10 students in associate degree nursing and dental hygienist programs. However, many more women enroll in programs that pay relatively low wages. About one third of the women leaving job preparatory programs during 2001-02 had enrolled in seven relatively low-wage programs: administrative support; early childhood education; cosmetology; teaching/library assistants; nursing assistants; medical assistants; and veterinary assistants. Only 4 percent of former male students had enrolled in these programs.

⁶We estimated a wage regression using data for job preparatory students leaving colleges during the 2001-02 school year. This regression examined the impact of gender, age, program completion, prior education, and course of instruction (as captured by 350 classification of instructional program codes) on postprogram hourly wages. The regression suggests that male-female differences in enrollments across courses of instruction explain about one third of the gender gap in wages.

The median earnings for Native Americans, during the third quarter after leaving college, was 79 percent that of whites; the median for African-Americans and Hispanics was about 88 percent that of whites. Native American, African-American, and Hispanic students are less likely to have completed higher wage programs in the colleges. The percentage of people of color in higher wage programs, however, has increased over the past five years.⁷

Earnings and employment outcomes also varied by disability status. College records suggest 6 percent of the students included in this study had a disability. These students were less likely to have employment reported to ESD during the third quarter after exit (50 versus 72 percent). Among those working, the median hourly wage rate of those with a disability was 85 percent that of those without a disability. These students were also less likely to work full-time (53 versus 63 percent), and their median earnings were 75 percent that of those with no reported disability.

Net Impacts

Every four years the Workforce Board conducts net impact and cost-benefit analyses of workforce development programs. The last net impact study, which was conducted in 2002, examined the experience of participants who left programs during the 1999-00 and 1997-98 program years. Study results were presented in the last edition of *Workforce Training Results*, and these results are reproduced here for your information.

The net impact analysis, conducted by the W.E. Upjohn Institute for Employment Research, attempts to estimate what happens to these participants as compared to what would have happened if they did not attend a job preparatory program. The objective is to determine the short-term and long-term impacts of program participation on employment, wages, hours worked, quarterly earnings, and receipt of UI benefits and public assistance.

In order to estimate these impacts, individuals who attended the program were compared to individuals who had similar characteristics, but who didn't participate in it. The comparison group members were selected from registrants to the state's employment service. Short-term net impacts were derived by examining outcomes for individuals who exited the programs (or from the employment service) in fiscal year 1999-00 and long-term impacts for individuals who exited in fiscal year 1997-98.

Job preparatory training has strong positive net impacts on employment, wages, hours worked, and earnings. Training substantially increases the lifetime earnings of participants.

⁷State Board for Community and Technical Colleges, Research Report No. 02-3, Access and Success for System Goals for People of Color in Washington Community and Technical Colleges: Eighth Progress Report, June 2002.

Figure 10 shows the short-term net impacts of training at community and technical colleges. During the third quarter after the 1999-00 participants left training, there were positive net impacts on each measure of employment and earnings. The training was associated with an increase of 7.6 percentage points in employment as reported to ESD. Among those with reported employment, the impact on wage rates was \$2.59 per hour, and the impact on hours worked per quarter was 40.4 hours. There was a very large impact on mean quarterly earnings—\$1,470. Note: these impacts are the differences between participant results and the employment and earnings of similar individuals who did not participate in one of the programs included in the study.

There were only minor or insignificant short-term net impacts on social welfare benefits. During the third postprogram quarter, training was associated with a small increase in the percentage receiving Temporary Assistance for Needy Families (TANF) benefits, but this impact did not persist in the longer run.

FIGURE 10
Short-Term Net Impact Results for Community and Technical College Job Preparatory Students Who Left Programs During PY 1999-00

	Net Impact
Employment: percentage in reported employment	7.6
Mean Hourly Wage: of those working	\$2.59
Mean Hours Worked: per quarter for those working	40.4
Mean Quarterly Earnings: of those working	\$1,470
TANF: percentage receiving aid	0.5
Food Stamps: percentage receiving	-0.4*
Medical Benefits: percentage receiving	-0.7*

Short-term refers to impacts observed in the third quarter after leaving the program.

* Not statistically significant at the 0.10 level.

The long-term net impacts of training are shown in Figure 11. These are the impacts observed 8 to 11 quarters after participants left the colleges during the 1997-98 school year. The strong, positive impacts of training on employment and earnings persist in the longer term. Moreover, training is associated with reduced receipt of social welfare benefits.

FIGURE 11
Long-Term Net Impact Results for Community and Technical College Job Preparatory Students Who Left Colleges During PY 1997-98

	All Participants	Program Completers
Employment: percentage in reported employment	7.0	10.1
Mean Hourly Wage: of those working	\$1.70	\$2.52
Mean Hours Worked: per quarter for those working	44.8	47.1
Mean Quarterly Earnings: of those working	\$1,185	\$1,520
TANF: percentage receiving aid	-0.4*	-2.4*
Food Stamps: percentage receiving	-1.4	-5.4
Medical Benefits: percentage receiving	-1.8	-5.1
UI: percentage receiving	-0.7*	-1.8

Long-term refers to impacts observed 8 to 11 quarters after leaving the program.

* Not statistically significant at the 0.10 level.

The data allowed for separate analyses of students who completed their training and those who left before completing. The long-term net impacts of training are greater for completers, indicating the value of students completing their programs. The long-term impact on quarterly earnings, for example, is \$1,185 for all former students and \$1,520 for program completers.

Benefits and Costs

The cost-benefit analysis estimates the value of the net impact on earnings, employee benefits (estimated at 20 percent of earnings), social welfare benefits, UI benefits, and certain taxes.⁸ Program costs include both direct program costs and support payments borne by the state, as well as the tuition and foregone earnings borne by program participants. Benefits and costs are calculated for the observed period of time and are forecast out to the age of 65 based on a statistical model. In order to compare benefits and costs in terms of net present values, postprogram benefits and costs are discounted by 3 percent per year, and all figures are stated in 2001 dollars. The benefits and costs presented here are based on impacts estimated for participants leaving programs in 1997-98, because a long-term follow-up is required for this analysis.

Projected participant benefits to age 65 far outweigh public costs by a ratio of over \$16 in participant benefits per public dollar invested in college training.

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

For each participant in job preparatory training, the public (taxpayer) cost is \$6,916 over the length of their enrollment, and the participant cost is \$3,118 in tuition and \$1,375 in foregone earnings while training (see Figure 12). During the first two-and-a-half years after leaving college, the average trainee will gain \$5,053 in earnings. During the course of working life to age 65, the average trainee will gain about \$127,000 in net earnings (earnings minus foregone earnings) and over \$25,000 in employee benefits. These are net gains compared to the earnings of similar individuals who did not receive the training. The ratio of participant benefits to program costs, not considering impacts on social welfare benefits or taxes, is \$151,365 to \$6,916, or 22 to 1.

FIGURE 12

Benefits and Costs of Job Preparatory Training at Community and Technical Colleges

	First 2.5 Years After Program		Forecast to Age 65	
	Participant	Public	Participant	Public
Earnings	\$5,053		\$127,283	
Employee Benefits	\$1,011		\$25,457	
Taxes	-\$1,271	\$1,271	-\$32,012	\$32,012
UI Benefits	-\$7	\$7	-\$1,767	\$1,767
TANF Benefits*	-\$469	\$469	-\$905	\$905
Food Stamp Benefits	-\$20	\$20	\$217	-\$217
Medical Benefits	-\$118	\$118	-\$424	\$424
Foregone Earnings	-\$1,375		-\$1,375	
Program Costs**	-\$3,118	-\$6,916	-\$3,118	-\$6,916
TOTAL	-\$314	-\$5,031	\$113,356	\$27,975

*TANF benefits reflect the value of cash grants, child care, and other client support services.

**Participant program costs refer to tuition.

The total public (taxpayer) costs are less than the program costs because the training is associated with decreased state welfare expenditures and increased tax revenues. During the first two-and-half years after training, the public saved \$614 per participant in reduced expenditures on TANF, food stamps, medical benefits, and UI benefits. From the time of leaving training to age 65, the public is forecast to save almost \$2,900 in welfare and UI costs. Moreover, the public is expected to gain over \$32,000 per participant in additional social security, Medicare, federal income, and state sales taxes; far greater than the direct cost of college training.

Areas for Improvement

The evaluation found several areas of strength in community and technical college job preparatory training. A large majority of students were satisfied with their college training program. Most students obtained jobs that paid a decent wage, and the net impact analysis suggests job preparatory training has substantial positive impacts on employment and earnings.

During the past two years, however, labor market outcomes for job preparatory students declined. The business cycle

contributed to the decline in postprogram employment and earnings among students leaving programs during the 1999-00 and 2001-02 school years. In addition to the general weakening of the labor market, the downturn in the IT sector had a large impact. This might also have contributed to the decline in the proportion of students reporting their education and training was related to their job.

Most students received the support services needed. However, many students continue to report their needs for information on job openings were not met.

The colleges might do more to eliminate gender, racial, and ethnic differences in the labor market outcomes. Efforts to attract women and minorities into higher-wage programs should continue. There should also be efforts to improve labor market outcomes for students with disabilities.

Also, the median age of job preparatory students remains high. Colleges should continue efforts to increase enrollments among young people.

Private Career Schools

Private career schools are independent businesses that provide students with training in a variety of occupations. No public funds are appropriated for private schools, but eligible students may:

1. Obtain federal grants and loans to pay for educational expenses if the school they choose has been authorized to participate in federal student aid programs.
2. Secure funding under the state's Worker Retraining Program.
3. Use "Individual Training Account" vouchers, funded under Title I-B of the federal Workforce Investment Act .

There are roughly 345 private career schools in Washington State. The Workforce Training and Education Coordinating Board (Workforce Board) licenses 266 certificate-granting vocational institutions. The Higher Education Coordinating Board regulates 14 private schools that grant associate or baccalaureate degrees. The state's 65 cosmetology schools are regulated by the Department of Licensing, and are not included in this study.

This study is based on information from 170 certificate-granting schools that are licensed by the Workforce Board and reported sufficient data. Program records were collected on 16,543 students who left programs during the 2001-02 school year.¹ The median length of enrollment for these students was four months. According to administrative records, 72 percent completed their programs before leaving the schools.

The study includes information from students' enrollment records and Employment Security Department (ESD) wage files from Washington, Idaho, Montana, Alaska, and Oregon. Federal and military employment records were also included. ESD records contain wages and hours of work for approximately 85 to 90 percent of employment in these states. The records do not contain information for those who are self-employed or employed outside the Pacific Northwest.

In addition, 317 of the students completed a telephone survey, providing additional data on their employment and satisfaction with training. Survey responses from 269 firms that hired new employees who recently completed a private career school program provide information on employer satisfaction with the skills of these graduates.

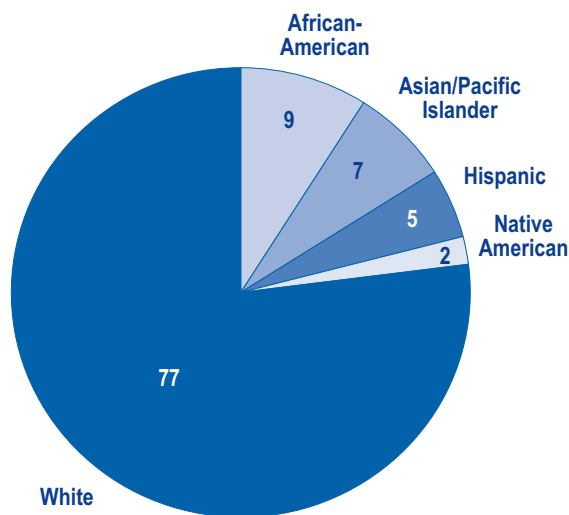
Participant Characteristics

Private career school students reflect the state population in terms of race, ethnicity, and gender. Twenty-three percent of the private career students in this study were people of color, compared to twenty-one

¹ These data do not provide full coverage of the private career school sector. However, coverage is improving. The evaluation for 1999-00, for example, was based on records for only 10,051 students from 109 schools.

percent for the state population as a whole (see Figure 1).² Representation among African-Americans was particularly noteworthy; African-Americans accounted for 9 percent of the students, but they represent only 4 percent of the state's population. Fifty-one percent of the students were women.

FIGURE 1
Percentage of Private Career School by Race and Ethnicity



²Seventy-nine percent of Washington residents, according to the 2000 Census, are non-Hispanic whites. Hispanics now comprise 7.5 percent of the state's population. The racial composition figures depend upon how multiracial residents are counted. If those reporting more than one race are included, about 4 percent of our residents are African-American, nearly 3 percent are Native American, and just over 7 percent are Asian/Pacific Islander. Among those reporting only one race, 3 percent are African American, under 2 percent are Native American, and 6 percent Asian/Pacific Islander.

The typical (median) student was age 27 at enrollment; one quarter were under age 22, and another quarter were over 37. When they enrolled, most had completed high school (95 percent), and 29 percent had some postsecondary schooling.

Competency Gains

According to the survey results, most students (90 percent) indicated they entered a private career school to acquire skills for a new job. The majority of students also received training in computer and workplace skills (team work, problem-solving, work habits, and diversity). Fewer received training in basic skills (see Figure 2).

Students often said their skills improved substantially. Among those receiving such training, 66 percent reported their job-specific skills improved a lot (see Figure 3). Sixty-nine percent said their machinery operation skills improved substantially. Students were less likely to report their team work, work habits, writing, and math skills improved a lot.

Among those employed after training, 61 percent stated their job was related to the training they received at a private career school. This represents a considerable drop from the 74 percent reported two years ago.

Participant Satisfaction

On the whole, former students were satisfied with their private career school training. Overall, 75 percent said they were satisfied with their program. Satisfaction tended to be highest with the times and location of training and with the ability to interact with

instructors. Satisfaction was generally lower with the cost of training and advice on selecting a program. Seventy-eight percent reported their educational objectives were met; down from eighty-nine percent reported two years ago.

FIGURE 2

Percentage of Private Career School Students Receiving Various Skills Training

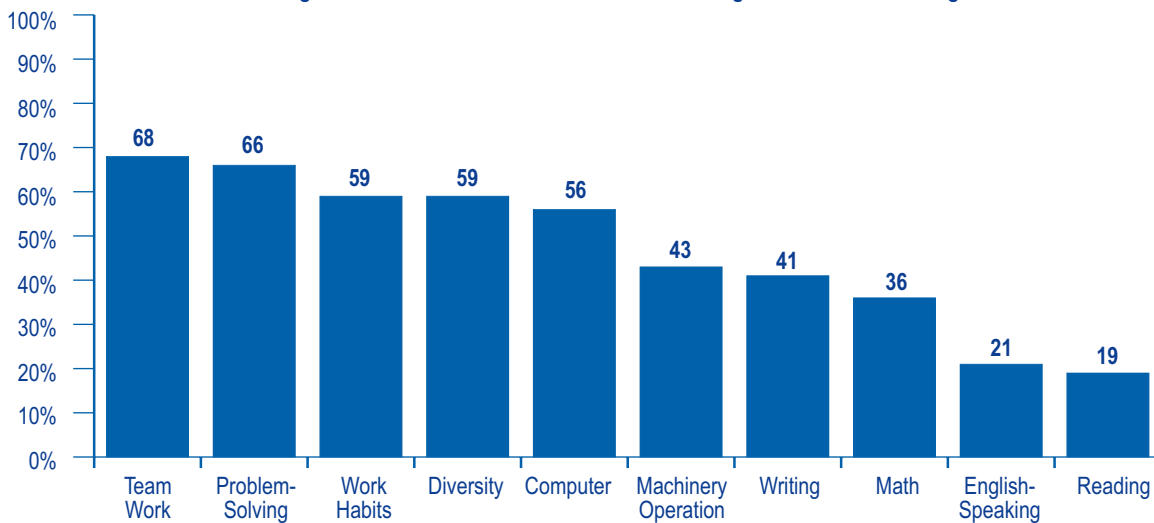
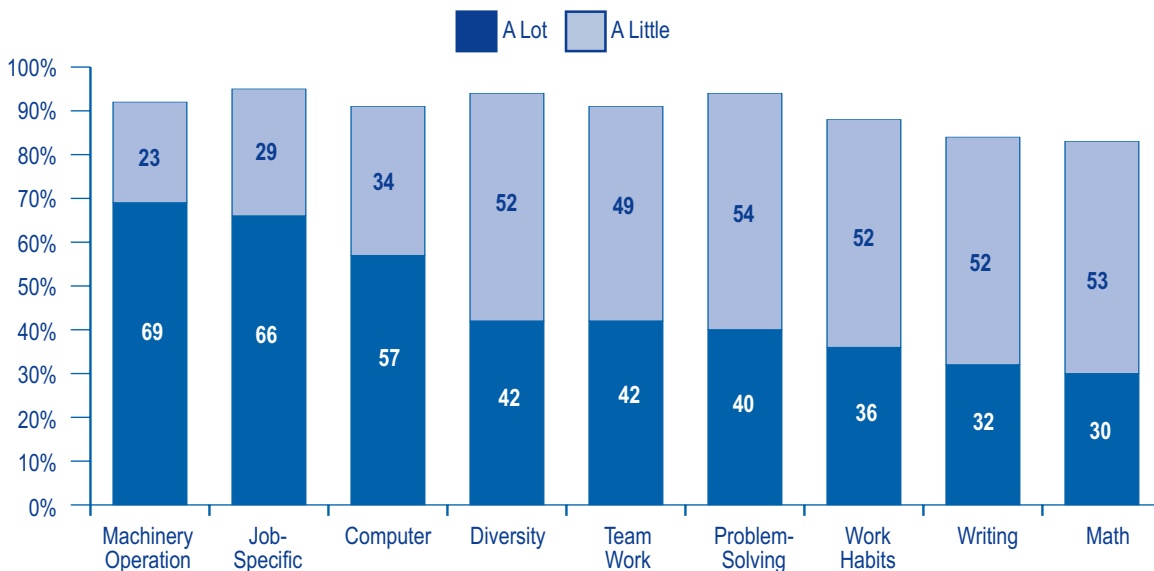


FIGURE 3

Percentage of Private Career School Students Receiving Various Skills Training Who Reported Their Skills Improved a Little or a Lot



Students reported needing some key support services as part of their private career school experience (see Figure 4). Sixty-six percent needed financial assistance, and sixty-two percent required information about job openings. Over 40 percent required help with resumé writing, and one third needed assistance with interviewing. In most cases, services were provided. However, one third of the students reported their need for information on job openings was not met.

Employer Satisfaction

The Workforce Board’s employer survey,³ which was administered during the fall of 2003, asked firms to evaluate new employees who had recently completed a program at a private career school. Among the 269 employers who provided such an evaluation, 96 percent said they were either somewhat or very satisfied with the job-specific skills of these new employees (see Figure 5). Half of all firms were very satisfied with their job-specific skills; an increase over the 30 percent reported two years ago.

³Workforce Training Needs and Practices of Washington State Employers, 2004.

FIGURE 4 Private Career School Students Needing a Service and Percentages Leaving With Needs Unmet

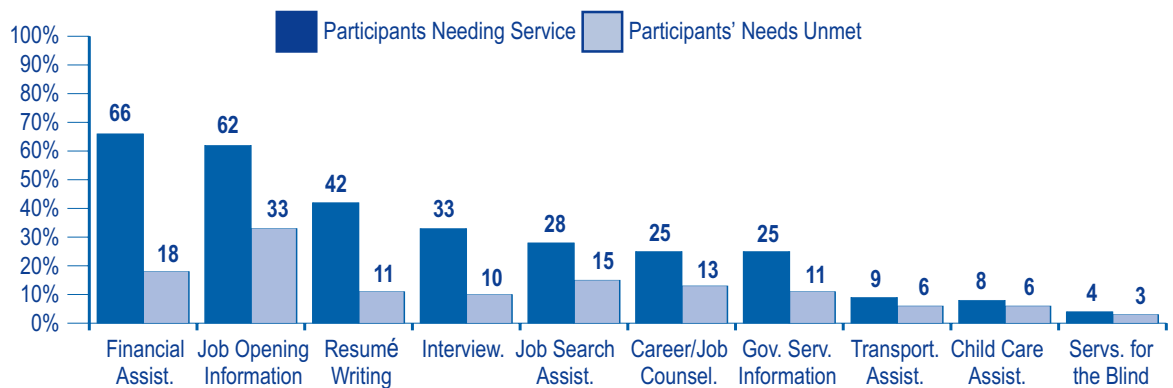
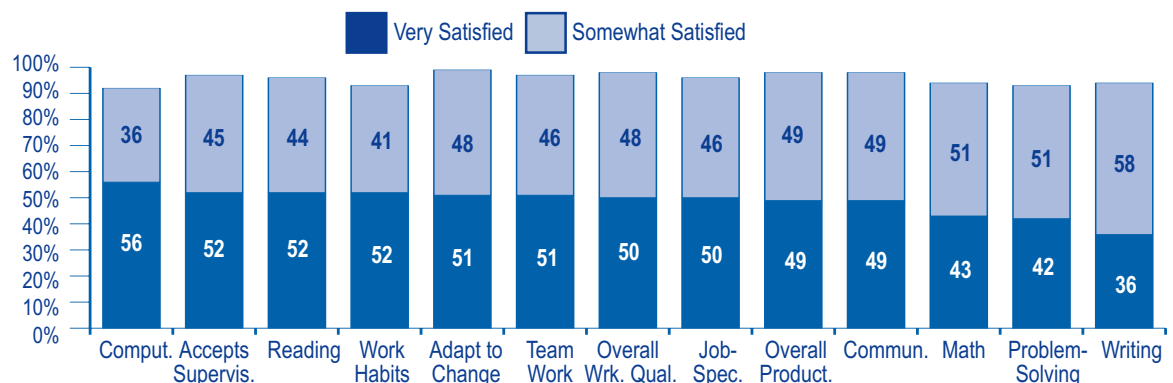


FIGURE 5 Percentage of Employers Satisfied With New Employees Who Had Recently Completed a Private Career School Program



Employment and Earnings

According to survey responses, 77 percent of the 2001-02 private career school students were employed during the period six to nine months after leaving their program. To find out more about the former students’ postprogram employment and earnings, we matched student records with ESD wage files from Washington and neighboring states. These files contain information on only those individuals with employment reported for Unemployment Insurance (UI) purposes (85 to 90 percent of in-state employment).

Based on these matches, 66 percent of the private career school students reported employment during the third quarter after they left their program (see Figure 6). The median wage for this group was \$11.72 per hour. The median wage for those who completed their programs was \$12.15.

The business cycle contributed to the decline in postprogram employment and earnings among private career school students leaving programs during the 1999-00 and 2001-02 school years. The more recent cohort faced a much weaker labor market. Moreover, the downturn in the information technology (IT) sector had a large impact on outcomes; IT is a popular field of study among private career school students.

The third quarter after they left their private career school training, the typical (median) employed student had sufficient earnings to support a household of 4.3 persons above the poverty level. The typical student earned enough to support about 1.2 persons at a family wage of twice the poverty level. According to the survey responses, 64 percent of those employed had health benefits provided by their employer, and 36 percent received pension benefits.

FIGURE 6

Employment and Earnings of Private Career School Students in the Third Quarter After Leaving Program

	1997-98	1999-00		2001-02	
	All	All	Completers	All	Completers
Percentage self-reporting employment during third quarter after leaving program	87	87		77	
Percentage with employment reported by employers to ESD the third quarter after leaving program	72	69	70	66	68
Median quarterly hours worked, of those working	448	450	463	428	443
Percentage employed full-time of those working (averaging 30 or more hours/week)	56	60	63	57	60
Median annualized earnings of those working	\$16,962	\$19,968	\$21,247	\$19,453	\$20,862
Size of household in which median earnings would support at poverty level	3.5	4.5	4.9	4.3	4.8
Size of household in which median earnings would support at twice poverty level	0.9	1.3	1.5	1.2	1.5
Median hourly wage of those working (in dollars)	\$9.69	\$11.60	\$11.96	\$11.72	\$12.15
Percentage receiving medical benefits from employment (self-reported)	68	71		64	
Percentage receiving pension benefits from employment (self-reported)	33	39		36	

Notes: Earnings and wages are expressed in first quarter 2003 dollars. Poverty levels are based on federal poverty guidelines identified by the Department of Health and Human Services for 2003.

Employment among former private career school students is concentrated in retail trade and services, especially health services (see Figure 7).

The earnings of former students varied by gender, race, and ethnicity. The median wage for women was 89 percent that of men. The median wage for Hispanics was 89 percent that of whites; wage rates for African-Americans were 93 percent that of whites.

Net Impacts

Every four years the Workforce Board conducts net impact and cost-benefit analyses of workforce development programs. The last net impact study, conducted in 2002, examined the experience of participants who left programs during the 1999-00 and 1997-98 program years. Study results were presented in the last edition of *Workforce Training Results*, and these results are reproduced here for your information.

The net impact analysis, conducted by the W.E. Upjohn Institute for Employment Research, attempts to estimate what happens to these students as compared to what would have happened if they did not attend a private career school program. The objective is to determine the short-term and long-term impacts of training on employment, wages, hours worked, quarterly earnings, and receipt of UI benefits and public assistance.

In order to estimate these impacts, individuals who attended a private career school were compared to individuals who had similar characteristics, but who didn't attend one. The comparison group members were selected from registrants to the state's employment service. Short-term net impacts were derived by examining outcomes for individuals who exited the programs (or from the employment service) in fiscal year 1999-00.⁴

⁴No long-run net impacts of private career school programs where estimated because of data constraints. Too few records were available for those leaving private career school programs before the 1999-00 school year. The data also did not permit us to analyze public and private program costs, therefore no cost-benefit analysis was conducted.

FIGURE 7

Industry of Employment for Private Career School Students in the Third Quarter After Leaving School

Industry Group	Employment
Agriculture, Forestry, Fishing	1.9%
Mining	0.1%
Construction	5.0%
Manufacturing	6.9%
Food	1.2%
Lumber, Wood	0.7%
Printing, Publishing	0.7%
Aerospace	3.5%
Transportation, Communications, Utilities	9.2%
Trucking	3.6%
Shipping	1.6%
Other in Group	4.1%
Wholesale Trade	4.4%
Retail Trade	21.5%
Finance, Insurance, Real Estate	4.0%
Services	44.6%
Hotels, Lodging	1.2%
Cosmetology	1.1%
Temporary Help Supply	4.6%
Computer, Software	1.3%
Health Services	15.8%
Education Services	2.7%
Social Services	3.6%
Other Services	14.3%
Public Administration	2.3%
TOTAL	100.0%

Among the students who completed their private career school programs, the training substantially increased employment and raised earnings.

Figure 8 shows the short-term net impacts of private career school training. During the third quarter after the 1999-00 students left their programs, training was associated with an increase of 2.6 percentage points in employment as reported to ESD. Among those with reported employment, there were no statistically significant impacts on wages, hours worked, and earnings. Training was associated with modest increases in the percentages receiving social welfare benefits.

The data allowed for separate analyses of students who completed their training and those who left before completing. The impacts of training are substantially greater for completers, indicating the value of students completing their programs. Completing a private career school program was associated with an 8.2 percentage point increase in employment; and there were positive net impacts on hourly wages, hours worked, and quarterly earnings. The training also reduced reliance on social welfare benefits among completers. Note: these impacts are the differences between completer results and the employment and earnings of similar individuals who did not participate in one of the programs included in the study.

FIGURE 8
Short-Term Net Impact Results for Private Career School Students Who Left a Program During 1999-00

	NET IMPACTS	
	All Participants	Program Completers
Employment: percentage in reported employment	2.6	8.2
Mean Hourly Wage: of those working	\$0.25*	\$0.73
Mean Hours Worked: per quarter for those working	-4.9*	15.1
Mean Quarterly Earnings: of those working	\$10*	\$373
Temporary Assistance for Needy Families (TANF): percentage receiving aid	2.7	-0.9*
Food Stamps: percentage receiving	2.9	-2.6
Medical Benefits: percentage receiving	3.8	-0.7*

Short-term refers to impacts observed in the third quarter after leaving the program.

** Not statistically significant at the 0.10 level.*

Areas for Improvement

The evaluation found several areas of strength. Most private career school students reported they were satisfied with their training, they were employed, their training was related to their jobs, and their job-specific skills increased a lot. The net impact analysis found that among the students who completed their programs, the training substantially increased employment and raised earnings. Access to support services is generally very high in the schools.

There are, however, some areas for improvement. One third of the students left the schools with an unmet need for information on job openings. The wages of former students differ by gender, race, and ethnicity. Women earn less than men, and Hispanics and African-Americans earn less than whites. Efforts should be made to recruit women and minorities into higher wage programs.

The business cycle and weakness in the IT sector contributed to the moderate decline in postprogram employment and earnings among private career school students leaving programs during the 1999-00 and 2001-02 school years. These might also have contributed to the decline in the percentage of students reporting their job was related to the training they had received at a private career school.

Apprenticeship

Apprenticeship in Washington is governed by the Washington State Apprenticeship and Training Council and administered by the Department of Labor and Industries. Apprenticeship combines classroom studies with extensive on-the-job training under the supervision of a journey-level craft person or trade professional. Apprentices receive wages, health, pension, and other benefits while learning occupational skills. Apprenticeships require applicants be at least 16 years old (18 for construction trades), and most require at least a high school diploma or GED for entrance.

For this study, administrative records were obtained for 3,099 apprentices who left a program during the 2001-02 program year. Of these participants, 43 percent completed their apprentice program, a considerable increase over the 35 percent reported two years ago. Overall, apprentices spent a median of 20 months in their program. Among apprenticeship completers, the median program length was 39 months.

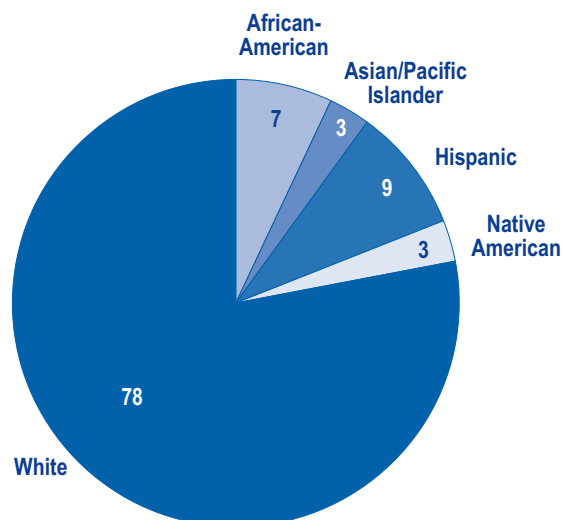
This study includes information from Employment Security Department (ESD) wage files from Washington, Idaho, Montana, Alaska, and Oregon. Federal and military employment records were also included. In addition, 182 former apprentices completed a telephone survey, providing additional data on their employment and satisfaction with the training. Survey responses from 213 firms that hired new employees who recently completed an apprenticeship program provided information on employer satisfaction with the skills of these workers.

Participant Characteristics

Apprentices reflect the diversity of the state population in terms of race and ethnicity (see Figure 1).¹ Minority groups, with the exception of the Asian/Pacific Islander population, are represented at or exceeding their proportions of the state population. Relatively few women, however, enter apprenticeships; only 13 percent of the participants ending an apprenticeship in 2001-02 were women.

¹Seventy-nine percent of Washington residents, according to the 2000 Census, are non-Hispanic whites. Hispanics now comprise 7.5 percent of the state's population. The racial composition figures depend upon how multiracial residents are counted. If those reporting more than one race are included, about 4 percent of our residents are African-American, nearly 3 percent are Native American, and just over 7 percent are Asian/Pacific Islander. Among those reporting only one race, 3 percent are African-American, under 2 percent are Native American, and 6 percent Asian/Pacific Islander.

FIGURE 1
Percentage of Apprenticeship Participants by Race and Ethnicity



The typical age at which apprentices entered their programs was quite high. The median age at enrollment was 27 years. One quarter of the apprentices were age 33 or older when they enrolled. Apprentices often have gained valuable job experience before entering their program, as evidenced by high preprogram wages.²

Competency Gains

By definition, people enter an apprenticeship program to acquire occupation- or industry-specific training. Many apprentices also receive training in workplace skills (team work, problem-solving, etc.). They receive both classroom and on-the-job training, and our survey asked apprentices about their experience with both.

²The median hourly wage of apprentices six to nine months before entering an apprenticeship was \$12.15 among those leaving the program during 2001-02; it was \$11.40 among those leaving during 1999-00.

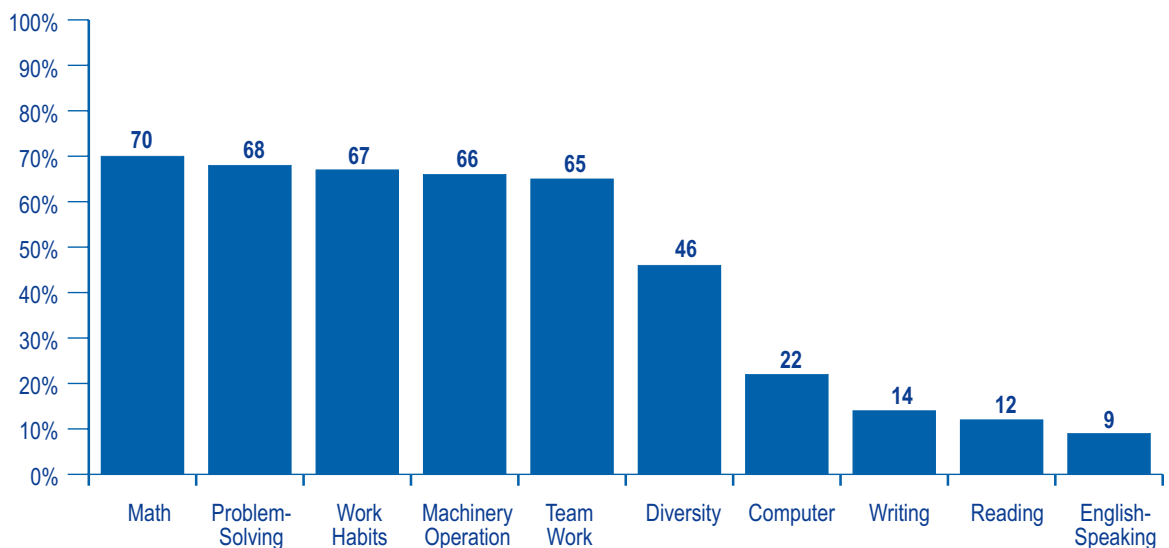
Classroom Skills Training

The majority of former apprentices reported receiving classroom training in math skills (70 percent), problem-solving skills (68 percent), work habits (67 percent), the operation of machinery (66 percent), and team work (65 percent). Only 22 percent said they received any classroom computer training. Few received training in reading, writing, or English-speaking skills (see Figure 2).

Of former apprentices, 72 percent reported their job-specific skills improved a lot; an increase over the 66 percent reported two years ago. Over 60 percent reported substantial skill improvements in machinery operation, and over half reported it for math skills (see Figure 3). Fewer reported substantial improvements in workplace skills such as team work skills or work habits—although most reported at least some skill improvement in all areas.

FIGURE 2

Percentage of Apprentices Receiving Skills Training



Among former apprentices who were employed when surveyed, 88 percent reported their training was related to their job.

operation of machinery (79 percent). About two thirds received on-the-job training in work habits, team work, and problem-solving skills (see Figure 4).

On-The-Job Skills Training

Most former apprentices also reported receiving on-the-job training in the

FIGURE 3

Percentage of Apprentices Receiving Skills Training Who Reported Their Skills Improved a Little or a Lot Due to Classroom Training

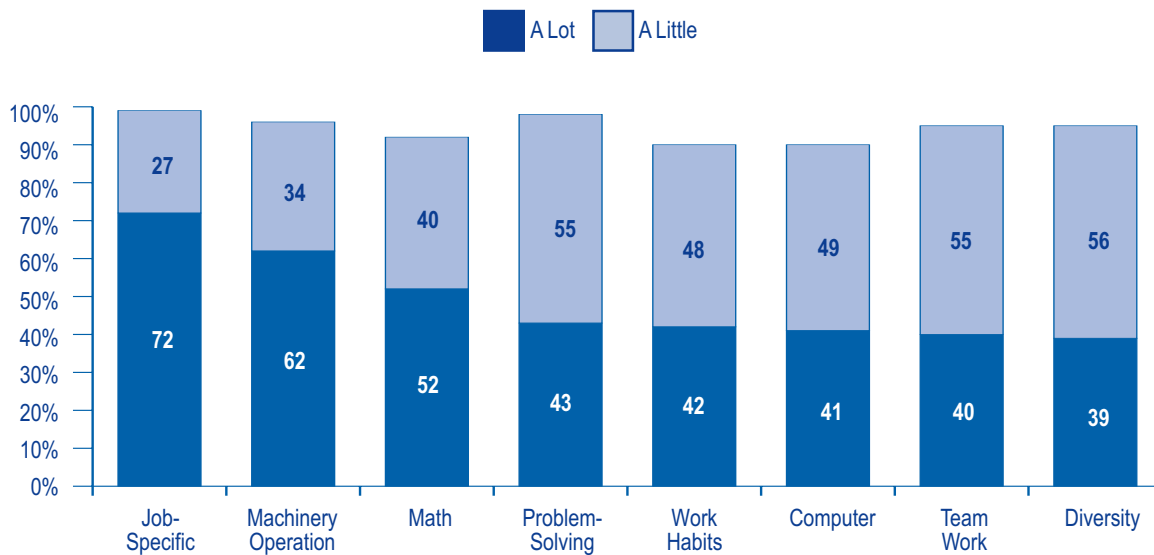
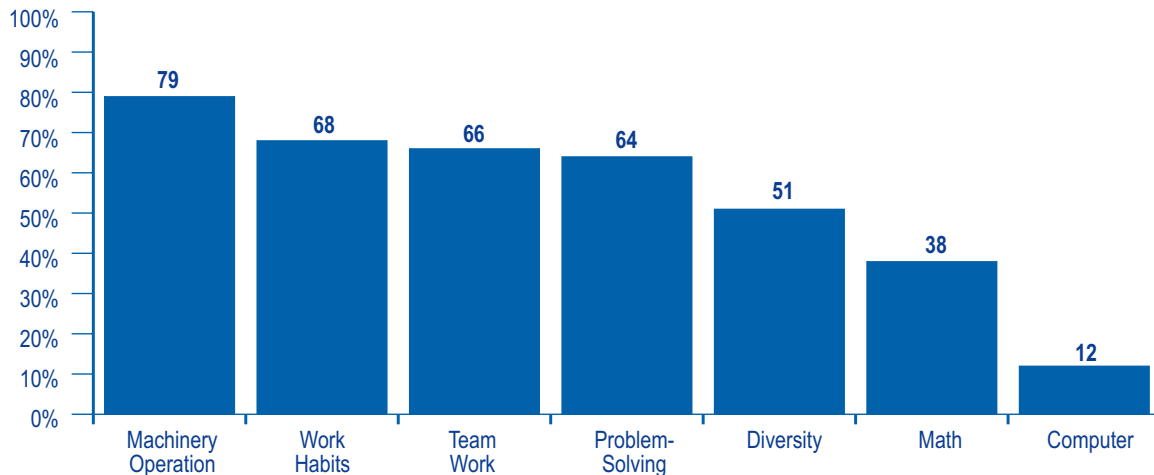


FIGURE 4

Percentage of Apprentices Receiving On-the-Job Skills Training



Apprentices rated their on-the-job training highly. Most said this training substantially improved their job-specific, machinery operation, and problem-solving skills (see Figure 5).

Participant Satisfaction

Survey results indicate participants were, on the whole, satisfied with their apprenticeship program. Most reported overall satisfaction with the program; 84 percent were satisfied with their classroom

training and 86 percent with their on-the-job training. Eighty-nine percent met their educational objectives by participating in the training.

Apprentices reported a much lower need for support services than the other groups we studied. Their greatest needs were for information on job openings and financial assistance, and most of those who required these services received them (see Figure 6).

FIGURE 5

Percentage of Apprentices Receiving Skills Training Who Reported Their Skills Improved a Lot or a Little Due to On-the-Job Training

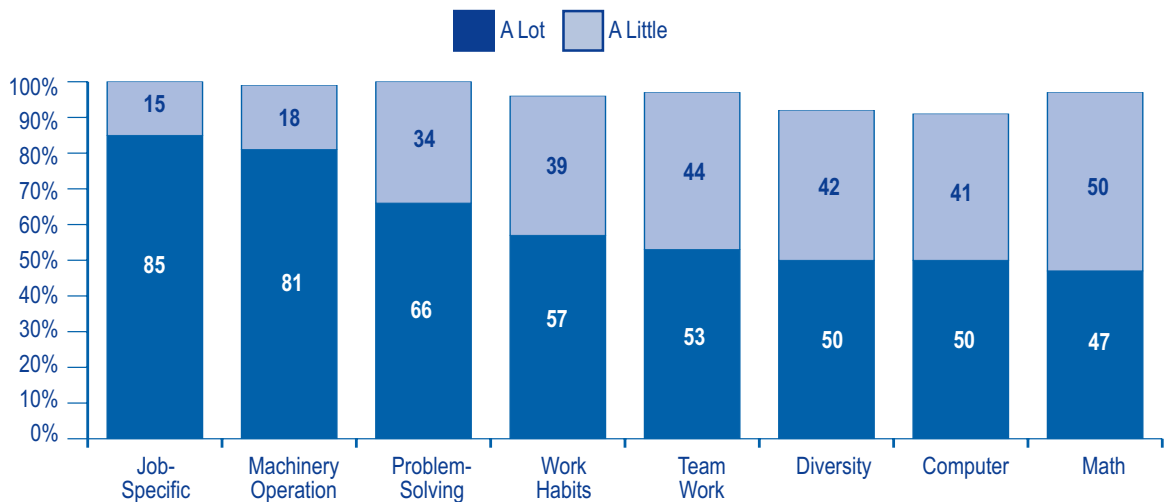
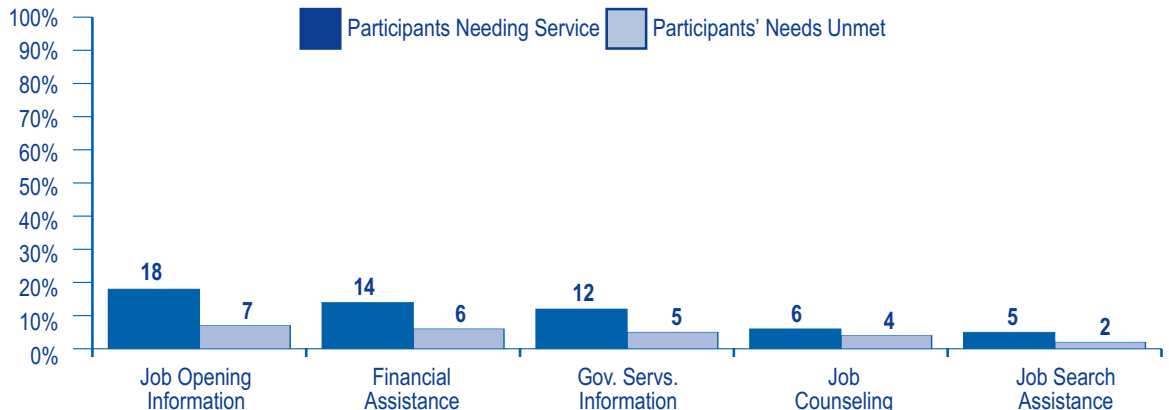


FIGURE 6

Apprentices Needing a Service and Percentages Leaving With Needs Unmet



Employer Satisfaction

The Workforce Training and Education Coordinating Board’s (Workforce Board) employer survey asked firms to evaluate new employees who had recently completed an apprenticeship program. We assessed their satisfaction with job-specific skills, general workplace skills, and basic skills. Most employers were at least somewhat satisfied with all these skill categories (see Figure 7). Most were very satisfied with the job-specific skills of former

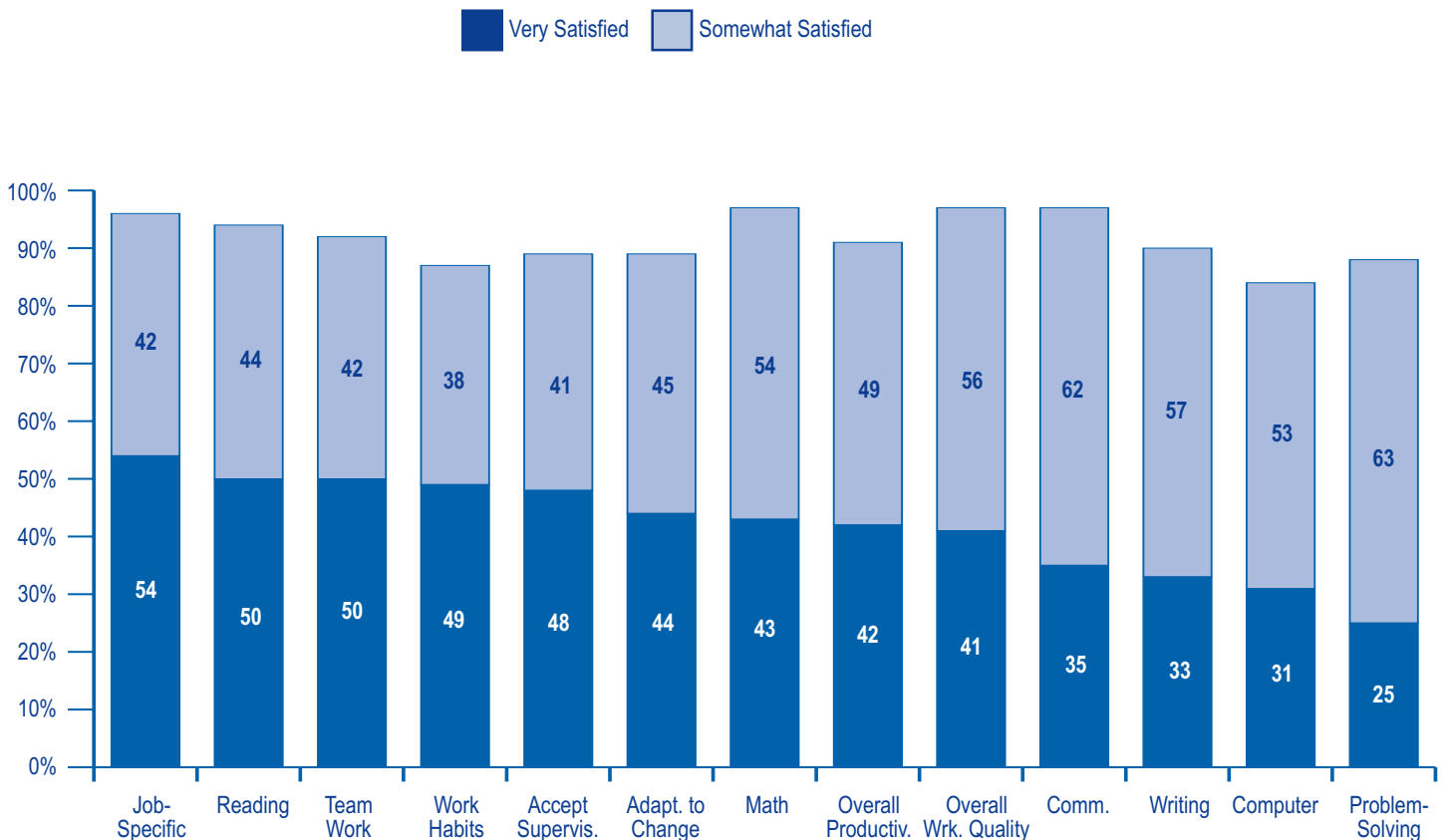
apprentices. The lowest levels of reported satisfaction, in terms of being very satisfied, were with writing, computer, and problem-solving skills.

Employment and Earnings

Labor market outcomes for apprenticeships are higher than for any other program we studied. In addition to the quality of apprenticeship training and the wage levels in these occupations, this result may be due to the relatively long length of the program.

FIGURE 7

Percentage of Employers Satisfied With New Employees Who Had Recently Completed an Apprenticeship Program



According to survey results, 87 percent of apprentices reported being employed nine months after leaving training (see Figure 8). To find out more about postprogram employment and earnings, we matched student records with ESD wage files from Washington and neighboring states. These files contain information only on those individuals with employment reported for Unemployment Insurance (UI) purposes (85 to 90 percent of the total employment in state, with self-employment being the largest type of employment not covered).

According to these records, 73 percent of former apprentices had employment during the third quarter after they left the

program. Their median wage was \$20.91 per hour, and annualized earnings were \$31,380. Limiting our analysis to just those apprentices who completed their program, the results are even stronger; 86 percent had employment reported to the ESD, the median wage was \$28.01 per hour, and median earnings were \$45,798. These results highlight the importance of completing an apprenticeship program.

During the third quarter after leaving their program, the typical (median) participant had sufficient earnings to support a household of 8.1 persons above the poverty level. Using a higher income standard, the typical participant earned enough to support

FIGURE 8
Employment and Earnings of Apprenticeship Program Participants in the Third Quarter After Leaving Program

	1995-96	1997-98		1999-00		2001-02	
	All	All	Completers	All	Completers	All	Completers
Percentage self-reporting employment during third quarter after leaving program	93	93		92		87	
Percentage with employment reported by employers to ESD the third quarter after leaving program	68	64	75	75	93	73	86
Median quarterly hours worked, of those working	455	456	480	460	489	442	464
Percentage employed full-time of those working (averaging 30 or more hours/week)	63	58	66	65	82	60	68
Median annualized earnings of those working	\$30,708	\$29,109	\$45,411	\$33,451	\$52,208	\$31,380	\$45,798
Size of household in which median earnings would support at poverty level	7.9	7.4	12.6	8.8	14.8	8.1	12.7
Size of household in which median earnings would support at twice poverty level	3.0	2.8	5.4	3.5	6.5	3.1	5.4
Median hourly wage of those working	\$19.58	\$18.03	\$25.97	\$19.85	\$28.15	\$20.91	\$28.01
Percentage receiving medical benefits from employment (self-reported)	81	83		89		87	
Percentage receiving pension benefits from employment (self-reported)	72	78		81		80	

Notes: Earnings and wages are expressed in first quarter 2003 dollars. Poverty levels are based on federal poverty guidelines identified by the Department of Health and Human Services for 2003.

3.1 persons at a family wage of twice the poverty level. Among completers, the numbers are even higher (see Figure 8).

According to the survey responses, 87 percent of those employed had health benefits provided by their employer, and 80 percent had pension benefits.

The median wage of former apprentices is high, but there is considerable variation in wages. While one quarter earned more than \$28.96 an hour, another quarter had jobs that paid less than \$12.34 an hour. The distribution of wages received by former apprentices was:

	<i>Hourly Wage</i>
Lowest 25 percent	Below \$12.34
Second 25 percent	\$12.34 - \$20.91
Third 25 percent	\$20.91 - \$28.96
Highest 25 percent	Above \$28.96

During the third quarter after leaving their programs, the majority of apprentices, as expected, were employed in the construction and manufacturing sectors (see Figure 9). Many former apprentices, however, took jobs in retail trade, services, and public administration. Most of the former apprentices employed in retail trade left their programs without completing training. About one third of those employed in the service sector were women leaving cosmetology, teacher/library assistant, and early childhood education apprenticeships; many of the other apprentices employed in the service sector also did not complete their programs. Most of those employed in public administration had participated in apprenticeships that provided training in protective service occupations.

Employment rates and earnings are down from the peak levels reported two years ago. We measure employment and earnings during the third quarter after leaving a program. Apprentices who exited during 1999-00 entered the labor market during the tail end of a four-year construction boom. This boom ended in 2001, and those leaving apprenticeships during 2001-02 were confronted with a cyclical downturn in the industry. Total construction employment declined by 1.4 percent during 2002.

Earnings varied by gender, race, and ethnicity. Women’s earnings were only 59 percent of those of their male counterparts; their median hourly wage was 57 percent that of former male apprentices. Within the construction trades, especially among those who completed their apprenticeships, male

FIGURE 9
Industry of Employment of Former Apprentices
in the Third Quarter After Leaving Program

Industry Group	Employment
Construction	51.9%
Manufacturing	7.5%
Transportation, Communication, Utilities	4.7%
Wholesale Trade	2.5%
Retail Trade	7.8%
Finance, Insurance, Real Estate	1.1%
Services	17.7%
Beauty Shops	1.4%
Temporary Help Supply	2.4%
Primary and Secondary Schools	3.3%
Child Care	1.8%
Other Services	8.8%
Public Administration	6.8%
Correctional Institutions	2.6%
Other Public Administration	4.2%
TOTAL	100.0%

and female apprentices earned much the same wage. The most important factor contributing to the overall gender gap in earnings is the concentration of women in relatively new apprenticeship programs that provide training outside the construction and machinist trades. Among those leaving apprenticeships during 2001-02, 44 percent of women (and virtually no men) left programs in cosmetology, early childhood education, and teaching/library assistantship (see Figure 10).³ Wages in these fields are considerably lower than in the construction and machinist trades, and statistical analysis suggests much of the gender gap in earnings is caused by differences in enrollments across types of programs.⁴

African-American and Hispanic apprentices earned less than whites. The median wage for African-American former apprentices was 81 percent that of whites; the median wage for Hispanics was 91 percent that of whites. Completion rates were significantly lower among African-American (33 percent) and Hispanic (32 percent) apprentices than among whites

(44 percent), and this contributed substantially to lower wages. Statistical analysis suggests about half of the wage differential between African-Americans and whites can be explained by differences in completion status, length of training, and program type (trade). These same factors explain most (90 percent) of the wage gap between Hispanic and white apprentices.⁵

Net Impacts

Every four years the Workforce Board conducts net impact and cost-benefit analyses of workforce development programs. The last net impact study, which was conducted in 2002, examined the experience of participants who left programs during the 1999-00 and 1997-98 program years. Study results were presented in the last edition of *Workforce Training Results*. These results are reproduced here for your information.

FIGURE 10

Distribution of Apprentices by Trade Group and Gender

Trade Group	Males	Females
Construction Trades	77%	36%
Machinist	12%	7%
Transportation Operators	1%	4%
Protective Services	3%	1%
Cosmetology	0%	14%
Early Childhood Education	0%	20%
Teaching/Library Assistant	0%	10%
Other	5%	7%
TOTAL	100%	100%

³The proportion of female apprentices in these three fields increased substantially between 1999-00 and 2001-02, rising from 27 to 44 percent. This contributed to a widening of the gender gap in earnings among former apprentices.

⁴We regressed hourly wages on demographic variables (age, gender, and race), program completion status, months in training, and program type (controlling for 42 different trades). Former female apprentices earn, on average, \$6.25 less per hour than males. Controlling for completion status and length of training reduces this gap by 11 percent. Differences in program type account for 58 percent of the gender gap in wages. Controlling for program type and completion reduces the wage gap to \$2 per hour.

⁵We regressed hourly wages on demographic characteristics (age, gender, and race), completion status, months in training, and program type (reflecting 42 different trade groups). Completion status and length of training explains about 32 percent of the African-American-white earnings gap. Differences in program type explain an additional 15 percent; only one half of the observed wage gap between these two groups is explained by these factors. These same factors explain just over 90 percent of the Hispanic-white wage gap.

The net impact analysis, conducted by the W.E. Upjohn Institute for Employment Research, attempts to estimate what happens to participants as compared to what would have happened if they did not attend an apprenticeship program. The objective is to determine the short-term and long-term impacts of program participation on employment, wages, hours worked, quarterly earnings, and receipt of UI benefits and public assistance.

In order to estimate these impacts, individuals who attended a program were compared to individuals who had similar characteristics, but who didn't participate in it. The comparison group members were selected from registrants to the state's employment service. Short-term net impacts were derived by examining outcomes for individuals who exited the programs (or from the employment service) in fiscal year 1999-00 and long-term impacts for individuals who exited in fiscal year 1997-98.

Apprenticeship programs have very large, positive impacts on earnings that stem mainly from increased hourly wages.

Figure 11 shows the short-term net impacts of apprenticeship training. During the third quarter after the 1999-00 apprentices left training, there were positive net impacts on each measure of employment and earnings. The training was associated with an increase of 5.4 percentage points in reported employment to ESD. Among those with reported employment, the impact on wage rates was \$5.03 per hour, and the impact on hours worked per quarter was 11.7 hours. There was a very large impact on mean quarterly earnings—\$2,030. Note:

these impacts are the differences between participant results and the employment and earnings of similar individuals who did not participate in any of the programs included in the study. Training was also associated with modest declines in percentage receiving food stamps and Medicaid.

The long-term net impacts of training are shown in Figure 12. These are the impacts observed 8 to 11 quarters after apprentices left training the 1997-98 program year. The strong, positive impacts of training on employment and earnings persist in the longer term.

The data allowed for separate analysis of both students who completed their training and those who left before completion. The long-term net impacts of training are substantially greater for completers, indicating the value of completion. The long-term impact on quarterly earnings, for example, is \$1,908 for all former apprentices and \$4,265 for those that completed.

FIGURE 11
Short-Term Net Impacts
Results for Apprentices Who Left a Program During PY 1999-00

	Net Impact
Employment: percentage in reported employment	5.4
Mean Hourly Wage: of those working	\$5.03
Mean Hours Worked: per quarter for those working	11.7
Mean Quarterly Earnings: of those working	\$2,030
Temporary Assistance for Needy Families (TANF): percentage receiving aid	-0.2*
Food Stamps: percentage receiving	-1.3
Medical Benefits: percentage receiving	-2.4

*Short-term refers to impacts observed in the third quarter after leaving the program.
* Not statistically significant at the 0.10 level.*

Data constraints did not permit us to analyze public and private program costs. However, it is clear that the very substantial benefits to trainees were achieved at very little cost to the public.

Areas for Improvement

The results for apprenticeship training are quite positive. Median earnings and wages were relatively high, most participants were very satisfied with their training, most were employed, and almost all believed their training was related to their employment. Moreover, the net impact analysis found that apprenticeship programs have very large, positive impacts on earnings.

There are, however, areas for improvement. The typical age at which apprentices enter their programs remains quite high. Efforts at recruiting younger adults into the program should continue. Among the various types of training provided, relatively few apprentices reported receiving computer training. The lowest level of employer satisfaction was with computer skills.

Clearly, greater efforts are needed in recruiting women into apprenticeships and in attracting women to higher-wage apprenticeships. Only 13 percent of participants ending an apprenticeship in 2001-02 were women; among those leaving apprenticeships in the construction trades, only 7 percent were women. Also, former female apprentices typically earned less than men. Within the construction trades, especially among those who complete their apprenticeships, male and female apprentices earned much the same wage.

Apprenticeship should also continue to address relatively low completion rates. The long-term earnings impacts of training are substantially greater for completers. Progress has been made over the past two years. Overall, the completion rate increased from 35 to 43 percent, and within the construction trades the completion rate increased from 31 to 38 percent. However, attention still needs to be paid to the lower completion rates among minority participants, especially among African-Americans and Hispanics. Differences in completion rates are a major factor determining the lower postprogram earnings among these two groups.

FIGURE 12
Long-Term Net Impacts
Results for Apprentices Who Left a Program
During Program Year 1997-98

	Net Impact
Employment: percentage in reported employment	5.3
Mean Hourly Wage: of those working	\$3.72
Mean Hours Worked: per quarter for those working	11.6
Mean Quarterly Earnings: of those working	\$1,908
TANF: percentage receiving aid	-0.1*
Food Stamps: percentage receiving	-1.6
Medical Benefits: percentage receiving	-3.1
UI: percentage receiving	5.3

Long-term refers to impacts observed 8 to 11 quarters after leaving the program.
 * Not statistically significant at the 0.10 level.

Worker Retraining at Community and Technical Colleges

The Worker Retraining program provides dislocated workers and the long-term unemployed with access to job retraining for a new career. Program enrollments vary from year to year in response to layoffs; during recessions need increases. The industries from which students are laid off also vary over time.

About 5 percent of Worker Retraining participants receive their training at private career schools. This evaluation, however, is limited to training at community and technical colleges. The colleges provide training in occupational skills, related or supplemental instruction for apprentices, and basic skills and literacy. Students qualifying may receive financial assistance to help with their tuition.

Information was obtained on 7,495 Worker Retraining students who completed or otherwise left a community or technical college program during the 2001-02 school year. Of these students, just over half were program completers: 17 percent received an associate degree, 13 percent received a certificate, and 21 percent were defined as completers because they completed 45 or more credits or a unique (nondegree) program.

The study includes information from students' college enrollment records and Employment Security Department (ESD) wage files from Washington, Idaho, Montana, Alaska, and Oregon. Federal and military employment records were also included. In addition, 367 of the students

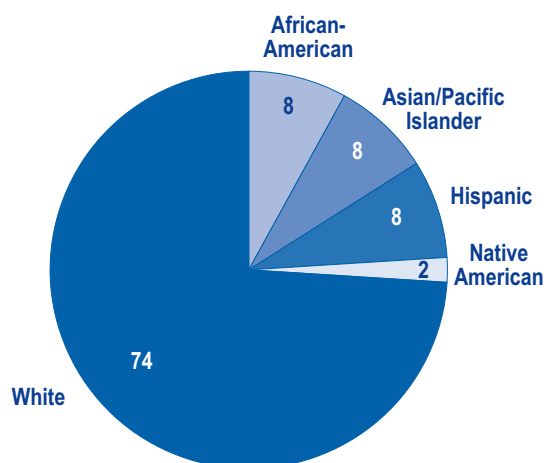
completed a telephone survey, providing additional data on their employment and satisfaction with the training.

Participant Characteristics

The racial and ethnic composition of Worker Retraining participants roughly reflects that of the general population. The participants do, however, include a slightly higher proportion of people of color (26 percent); African-Americans are especially well represented as compared to their share of the state population (see Figure 1).¹ Forty-eight percent are women.

¹According to the 2000 Census, 79 percent of Washington residents are non-Hispanic whites. Hispanics now comprise 7.5 percent of the state's population. Racial composition figures depend upon how multiracial residents are counted. Including those who report more than one race, about 4 percent of our residents are African-American, nearly 3 percent are Native American, and just over 7 percent are Asian/Pacific Islander. Among those reporting only one race, 3 percent are African-American, less than 2 percent are Native American, and 6 percent Asian/Pacific Islander.

FIGURE 1
Percentage of Community and Technical College Worker Retraining Participants by Race and Ethnicity



When they enrolled in the program, 52 percent had previously attended college, but only 26 percent had previously received a certificate or degree. The median age upon leaving the program was 40 years, and one quarter were over age 47.

Competency Gains

The primary goal of the Worker Retraining program is to prepare dislocated workers for new jobs. In addition to learning job-

specific skills, many students also received other types of training. Based on survey results, 70 percent received training in computer skills. About half received training in team work, problem-solving, math, and writing skills (see Figure 2). Most students reported their skills in these areas had improved as a result of their training. The percent who said their skills improved a lot varied (see Figure 3). High proportions reported substantial skill improvement in

FIGURE 2
Percentage of Community and Technical College Worker Retraining Participants Receiving Various Skills Training

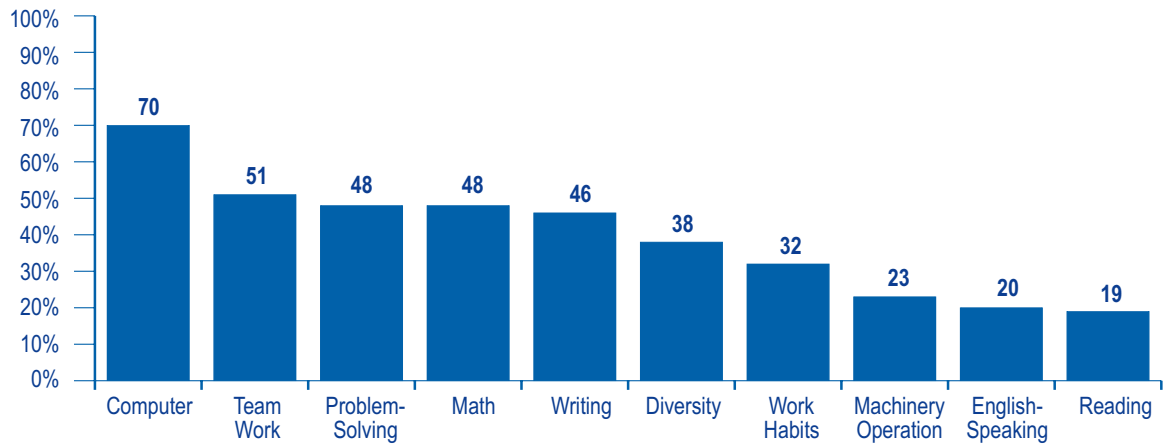
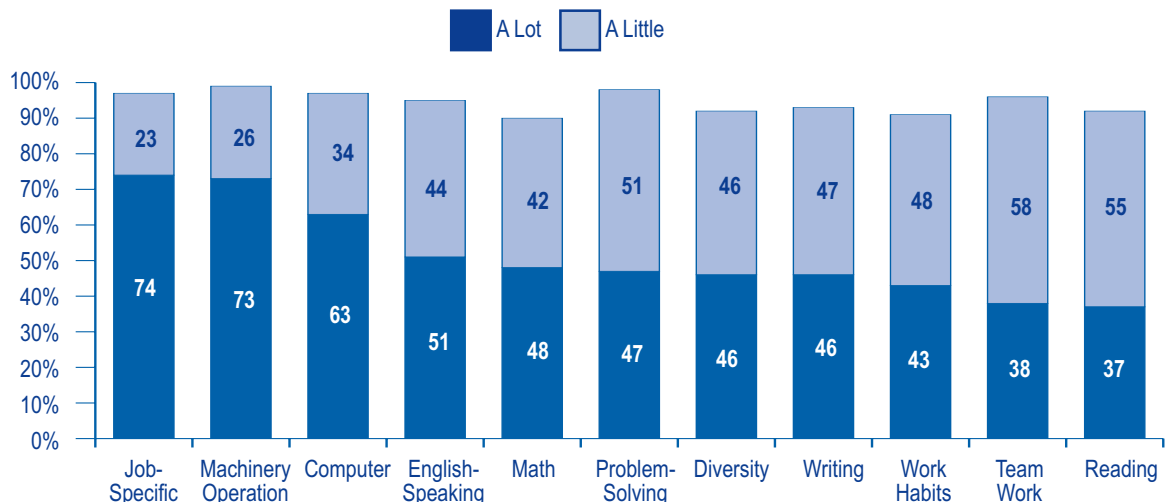


FIGURE 3
Percentage of Worker Retraining Participants Receiving Various Skills Training Who Reported Their Skills Improved a Little or a Lot



job-specific, machinery operation, and computer skills. Among students employed six to nine months after leaving the program, 63 percent reported their education and training was related to their job.

Participant Satisfaction

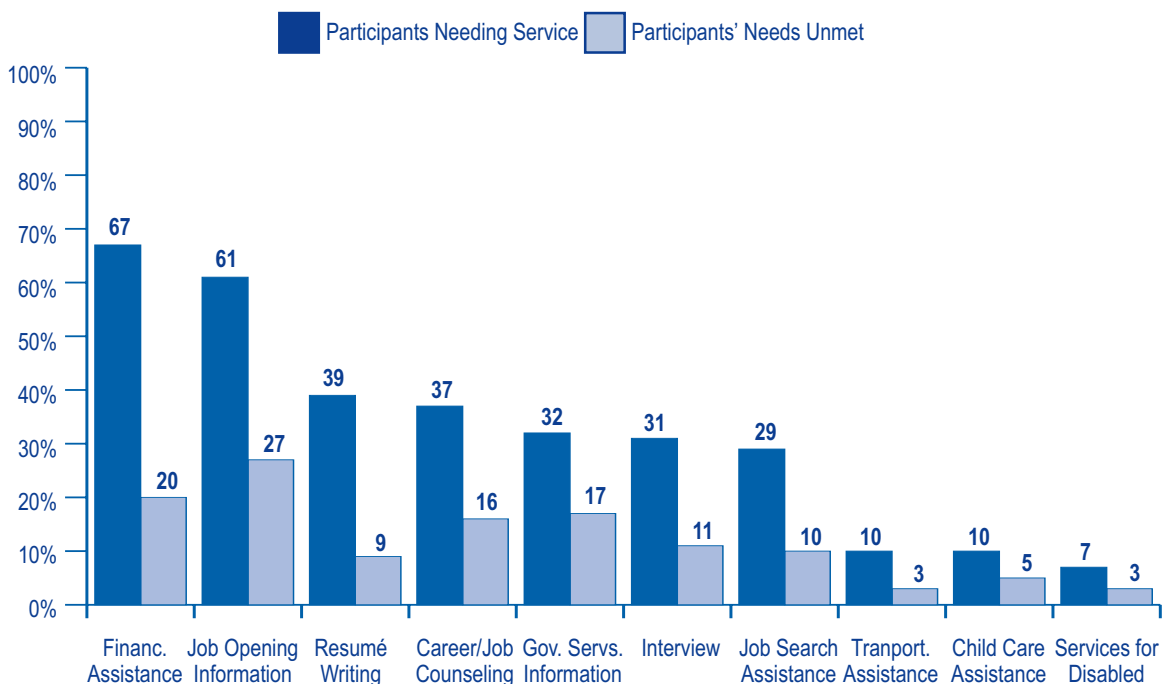
Eighty-six percent of former students reported they were very or somewhat satisfied with the program as a whole. Overall, 82 percent reported they had met their educational objectives (of these, 43 percent reported they had definitely met and 39 percent partially met their educational objectives). Satisfaction levels with the quality of teaching, length of training, interaction with instructors, facilities, and cost of training were all close to or above 90 percent. About 84 percent of the students reported satisfaction with

advice on selecting a program, though only 47 percent said they were very satisfied with this advice.

Students were also asked about support services related to their training. The services most frequently needed were financial assistance (67 percent) and information about job openings (61 percent). Thirty to forty percent of students required help with resumé writing, job counseling, information about government services, interviewing, and job search (see Figure 4). Most students received the support services needed. The services with the most frequently cited unmet needs² were related to job search. According to survey results,

²Unmet need refers to cases where the student reports that either did not receive the required service or what was provided did not meet their needs.

FIGURE 4
Worker Retraining Participants Needing a Service and the Percentages Leaving With Needs Unmet



27 percent of students left the program with an unmet need for information about job openings, and 16 percent said they did not receive the job counseling they required. Twenty percent of students said they did not receive the financial assistance they needed.

Employment and Earnings

According to the survey responses, 71 percent of 2001-02 Worker Retraining students were employed during the period six to nine months after leaving their

program (see Figure 5). In order to examine postprogram employment and earnings, we matched student records with ESD wage files from Washington and neighboring states. These files contain information only on those individuals with employment reported for Unemployment Insurance (UI) purposes (85 to 90 percent of the total employment in state, with self-employment being the largest type of employment not covered). Record matches found that 67 percent of the 2001-02 students had

FIGURE 5

Employment and Earnings of Community and Technical College Worker Retraining Participants in the Third Quarter After Leaving Program

	1997-98	1999-00		2001-02	
	All	All	Completers	All	Completers
Percentage self-reporting employment during third quarter after leaving program				71	
Percentage with employment reported by employers to ESD the third quarter after leaving program	73	75	77	67	70
Median quarterly hours worked, of those working	470	480	482	455	455
Percentage employed full-time of those working (averaging 30 or more hours/week)	69	69	72	61	63
Median annualized earnings of those working	\$22,438	\$24,802	\$26,277	\$21,648	\$23,065
Size of household in which median earnings would support at poverty level	5.3	6.0	6.5	5.0	5.5
Size of household in which median earnings would support at twice poverty level	1.7	2.1	2.3	1.6	1.8
Median hourly wage of those working	\$12.10	\$13.46	\$13.87	\$12.75	\$13.15
Percentage receiving medical benefits from employment (self-reported)				67	
Percentage receiving pension benefits from employment (self-reported)				42	

Notes: Earnings and wages are expressed in first quarter 2003 dollars. Poverty levels are based on federal poverty guidelines identified by the Department of Health and Human Services for 2003. The participant survey for this survey was not conducted in prior years.

reported employment during the third quarter after they left their program. Their median wage was \$12.75 per hour, and they had median annualized earnings of \$21,648. Program completers had higher earnings and hourly wage rates than those who did not complete their training programs.

During the third quarter after leaving their program, the typical (median) student with reported employment had sufficient earnings to support a household of five persons above the poverty level. According to survey results, 67 percent of those working received medical benefits from their employers, and 42 percent received pension benefits.

There was considerable variation in wages across former Worker Retraining students. While one quarter earned more than \$17 an hour, another quarter had jobs that paid less than \$10 an hour. This wide distribution of wages is reflected in the dispersion of employment across higher- and lower-wage industries (see Figure 6).

Labor market outcomes for Worker Retraining students are lower than reported two years ago (see Figure 5). The business cycle contributed to the large declines in postprogram employment and earnings among students leaving programs during the 1999-00 and 2001-02 school years. The more recent cohort faced a much weaker labor market. One important factor was the heavy concentration of Worker Retraining participants enrolled in information technology (IT) programs. The downturn in the IT industry had a large adverse impact on outcomes for community and technical

college students enrolled in these programs. Twenty-seven percent of Worker Retraining students leaving the colleges during 2001-02 were enrolled in an IT program.

FIGURE 6
Industry of Employment of Worker Retraining Participants in the Third Quarter After Leaving Program

Industry Group	Employment
Agriculture, Forestry, Fishing	2.0%
Utilities	0.3%
Construction	6.4%
Manufacturing	14.0%
Food	2.0%
Wood Products	1.7%
Aerospace	2.2%
Other Manufacturing	8.2%
Wholesale Trade	4.5%
Retail Trade	12.8%
Transportation and Warehousing	4.4%
Information	3.1%
Software Publishing	0.5%
Internet and Data Processing	0.5%
Other Information	2.1%
Finance and Insurance	3.3%
Real Estate	2.1%
Services	44.0%
Professional, Scientific, Technical*	5.8%
Employment Placement Agencies	1.6%
Temporary Help Services	5.7%
Security	1.2%
Educational Services	4.1%
Health Care	8.6%
Social Assistance	2.3%
Arts, Entertainment, Recreation	1.4%
Accommodation and Food Services	5.2%
Other Services	8.0%
Public Administration	2.9%
Correctional Institutions	1.5%
TOTAL	100.0%

Notes: *Includes legal, accounting, engineering, computer systems design, and other technical and scientific services.

Earnings varied by gender, race, and ethnicity. Among those with employment reported to ESD during the third quarter after leaving the program, the median earnings for female participants was only 79 percent that of males; their median hourly wage was only 86 percent that of males (\$11.86 versus \$13.77). The median hourly wage for Hispanics, during the third quarter after leaving a college, was 87 percent that of whites; the median for African-Americans was 89 percent that of whites.

Earnings and employment outcomes also varied by disability status. College records suggest 8 percent of the Worker Retraining students included in this study had a disability. These students were less likely to have employment reported to ESD during the third quarter after exit (53 versus 68 percent). Among those working, the median hourly wage rate of participants with a disability was 88 percent that of those without a disability. These students also tended to work fewer hours, and their median earnings were 79 percent that of those with no reported disability.

Net Impacts

Every four years the Workforce Training and Education Coordinating Board (Workforce Board) conducts net impact and cost-benefit analyses of workforce development programs. The last net impact study, which was conducted in 2002, examined the experience of participants who left programs during the 1999-00 and 1997-98 program years. Study results were presented in the last edition of *Workforce Training Results*, and these results are reproduced here for your information.

The net impact analysis, conducted by the W.E. Upjohn Institute for Employment Research, attempts to estimate what happens to these participants as compared to what would have happened if they had not attended Worker Retraining. The objective is to determine the short-term and long-term impacts of program participation on employment, wages, hours worked, quarterly earnings, and receipt of UI benefits and public assistance.

In order to estimate these impacts, individuals who participated in the program were compared to individuals who had similar characteristics, but who didn't participate in it. The comparison group members were selected from registrants to the state's employment service. Short-term net impacts were derived by examining outcomes for individuals who exited the program (or from the employment service) in fiscal year 1999-00 and long-term impacts for individuals who exited in fiscal year 1997-98.

Worker Retraining substantially increases employment, hours worked, and earnings, especially in the long-term. Program participation also reduces reliance on public assistance.

Figure 7 shows the program's short-term net impacts. Note: these impacts are the differences between participant results and the employment and earnings of similar individuals who did not participate in the program. During the third quarter after 1999-00 participants left the program,

FIGURE 7
Short-Term Net Impact Results for Worker Retraining Participants Who Left the Program During PY 1999-00

	Net Impact
Employment: percentage in reported employment	8.0
Mean Hourly Wage: of those working	\$0.54*
Mean Hours Worked: per quarter for those working	9.1*
Mean Quarterly Earnings: of those working	\$147*
Temporary Assistance to Needy Families (TANF): percentage receiving aid	-0.0*
Food Stamps: percentage receiving	-0.5*
Medical Benefits: percentage receiving	-1.1*

Short-term refers to impacts observed in the third quarter after leaving the program.

**Not statistically significant at the 0.10 level.*

training was associated with an increase of eight percentage points in employment as reported to ESD. The short-term impacts on hourly wages and earnings were also positive, though not statistically significant. Short-term net impacts on social welfare benefits were minor.

The long-term net impacts of training, shown in Figure 8, are stronger. These are the impacts observed 8 to 11 quarters after participants left the program during the 1997-98 program year. The positive impact of training on employment persists in the longer term. Moreover, training is associated with an increase in hours worked, higher quarterly earnings, and reduced receipt of social welfare benefits.

The data allowed for separate analysis of both participants who completed their training and those who left before completing. The long-term net impacts are greater for completers, indicating the value of students' completing their programs.

Benefits and Costs

The cost-benefit analysis estimates the value of the net impact on earnings, employee benefits (estimated at 20 percent of earnings), social welfare benefits, UI benefits, and certain taxes.³ Program costs include both direct program costs and support payments borne by the state, as well as the tuition and foregone earnings borne by program participants. Benefits and costs are calculated for the observed

³Upjohn estimated the impact of the net change in earnings on social security, Medicare, federal income, and state sales taxes.

FIGURE 8
Long-Term Net Impacts Results for All Worker Retraining Participants and for Those Who Completed Training

	All Exitters 1997-98	Completers 1997-98
Employment: percentage in reported employment	6.3	11.2
Mean Hourly Wage: of those working	-\$0.44*	\$0.29*
Mean Hours Worked: per quarter for those working	35.1	34.4
Mean Quarterly Earnings: of those working	\$423	\$553
TANF: percentage receiving aid	-0.9	-2.0
Food Stamps: percentage receiving	-3.3	-5.2
Medical Benefits: percentage receiving	-2.4	-4.2
UI: percentage receiving	-1.5*	-1.4*

Long-term refers to impacts observed 8 to 11 quarters after leaving the program.

** Not statistically significant at the 0.10 level.*

period of time and are forecast out to the age of 65 based on a statistical model. In order to compare benefits and costs in terms of net present values, postprogram benefits and costs are discounted by 3 percent per year, and all figures are stated in 2001 dollars. The benefits and costs presented here are based on impacts estimated for participants leaving programs in 1997-98, because a long-term follow-up is required for this analysis.

Projected participant benefits to age 65 outweigh public costs by a ratio of \$14 in participant benefits per public dollar invested in college training. High foregone earnings during program participation are more than offset by substantial increases in lifetime earnings.

For each participant in Worker Retraining, the public (taxpayer) cost is about \$4,700 over the length of their enrollment, and the participant costs are roughly \$2,100 in tuition and \$14,500 in foregone earnings while training (see Figure 9). During the first two-and-a-half years after leaving college, the average trainee will gain roughly \$2,800 in earnings. During the course of working life to age 65, the average trainee will gain about \$52,000 in net earnings (earnings minus foregone earnings) and over \$13,000 in employee benefits. These are net gains compared to the earnings of similar individuals who did not receive the training. The ratio of participant benefits to program costs, not considering impacts on social welfare benefits or taxes, is \$65,025 to \$4,692, or 14 to 1.

FIGURE 9

Benefits and Costs of Worker Retraining

	First 2.5 Years After Program		Forecast to Age 65	
	Participant	Public	Participant	Public
Earnings	\$2,772		\$66,268	
Employee Benefits	\$554		\$13,254	
Taxes	-\$697	\$697	-\$16,666	\$16,666
UI Benefits	-\$25	\$250	-\$2,350	\$2,350
TANF Benefits*	-\$136	\$136	\$95	-\$95
Food Stamp Benefits	-\$66	\$66	-\$453	\$453
Medical Benefits	-\$236	\$236	-\$848	\$848
Foregone Earnings	-\$14,497	-\$14,497		
Program Costs**	-\$2,133	-\$4,692	-\$2,133	-\$4,692
TOTAL	-\$14,689	-\$3,307	\$42,633	\$15,566

*TANF benefits reflect the value of cash grants, child care, and other client support services.

**Participant program costs refer to tuition.

The total public (taxpayer) costs are less than the program costs because the training is associated with decreased state welfare expenditures and increased tax revenues. During the first two-and-half years after training, the public saves \$688 per participant in reduced expenditures on TANF, food stamps, medical benefits, and UI benefits. From the time of leaving training to age 65, the public is forecast to save almost \$3,600 in welfare and UI costs. Moreover, the public is expected to gain about \$17,000 per participant in additional social security, Medicare, federal income, and state sales taxes; an amount far greater than the direct cost of college training.

Areas for Improvement

This evaluation found several areas of strength in the Worker Retraining program. Overall satisfaction with the program was high among former students. Satisfaction levels with the quality of teaching, length of training, interaction with instructors, facilities, and cost of training were all close to or above 90 percent. Many former students, moreover, reported substantial skill improvement in job-specific, machinery operation, and computer skills. The net impact evaluation found Worker Retraining substantially increases employment, hours worked, and earnings, especially in the longer term.

Labor market outcomes for Worker Retraining students did decline from the levels reported two years ago. The business cycle contributed to the large declines in employment and earnings among students leaving programs during the 1999-00 and 2001-02 school years. The downturn in the IT industry had an especially large impact because of the heavy concentration of students enrolled in this field.

Employment and earnings impacts of training are greater for program completers, yet many participants leave the colleges before completing their training. Among the students leaving during 2001-02, just over half completed their programs.

Most students received the support services needed. According to survey results, however, there were substantial unmet needs for information about job openings and job counseling. Among the different elements of the program, satisfaction levels were relatively low with advice on selecting a program.

Workforce Investment Act Title I-B Program for Dislocated Workers

On July 1, 2000, the Workforce Investment Act (WIA) replaced the Job Training Partnership Act (JTPA) of 1982. The WIA Dislocated Worker program tailors employment and training services to meet dislocated workers' needs; establishes early intervention for workers and firms facing substantial layoffs; and fosters labor, management, and community partnerships with government to address worker dislocation. In general, dislocated workers are people who lost jobs due to plant closures, company downsizing, or some other significant change in market conditions. In most cases, it must be unlikely they will return to their occupation, and they must be eligible for (or have exhausted) unemployment compensation.

Dislocated workers are eligible for "core services," which include skill assessment, labor market information, training program consumer reports, and job search and placement assistance. Second and third tier services are available for eligible dislocated workers unable to get jobs through core services. These may include more intensive assessments, counseling, and prevocational and vocational training.

The Employment Security Department (ESD) administers the program at the state level. Twelve local workforce development councils, in consultation with chief local elected officials, oversee WIA activities in local areas. Services are coordinated through the state's one-stop career center system called WorkSource.

For this study, program records were obtained on 3,125 individuals who left the program from July 2001 through June 2002. Employment related information was obtained through a match with ESD wage files from Washington, Idaho, Montana, Alaska, and Oregon. Federal and military employment records were also included. In addition, 1,218 former participants responded to a telephone survey, providing additional information on their employment, training, and satisfaction with the program. Employer satisfaction was assessed through survey responses from 238 firms that hired employees who recently completed a WIA program.

The typical participant was enrolled in the program for 12 months. There was, however, considerable variation in the amount of time participants spent in the program. One quarter were enrolled for less than 6 months, while another quarter were enrolled for over 20 months.

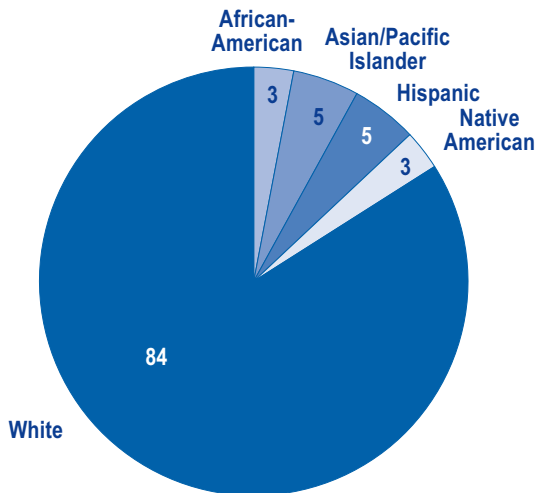
Participant Characteristics

Participants roughly mirrored the state's racial and ethnic population distribution (see Figure 1).¹ Sixteen percent were people of color. Thirty-seven percent were women. Most participants were in their thirties or forties. The median age at

¹Seventy-nine percent of Washington residents, according to the 2000 Census, are non-Hispanic whites. Hispanics now comprise 7.5 percent of the state's population. The racial composition figures depend upon how multiracial residents are counted. If those reporting more than one race are included, about 4 percent of our residents are African-American, nearly 3 percent are Native American, and just over 7 percent are Asian/Pacific Islander. Among those reporting only one race, 3 percent are African-American, under 2 percent are Native American, and 6 percent Asian/Pacific Islander.

FIGURE 1

Percentage of WIA Dislocated Workers by Race and Ethnicity



program registration was 42; one quarter was over 49 years of age. Forty-three percent had some college training before entering the program, and twelve percent had obtained a bachelor’s degree.

Among the participants leaving the program during 2001-02, 59 percent worked in manufacturing prior to dislocation, 12 percent in trade, and another 12 percent in the service sector. Thirteen percent worked in aerospace prior to enrollment, and only one percent returned to aerospace after the program. The preprogram wages of the 2001-02 WIA participants were substantially higher than those of the 1999-00 JTPA dislocated workers (see Figure 2).

Competency Gains

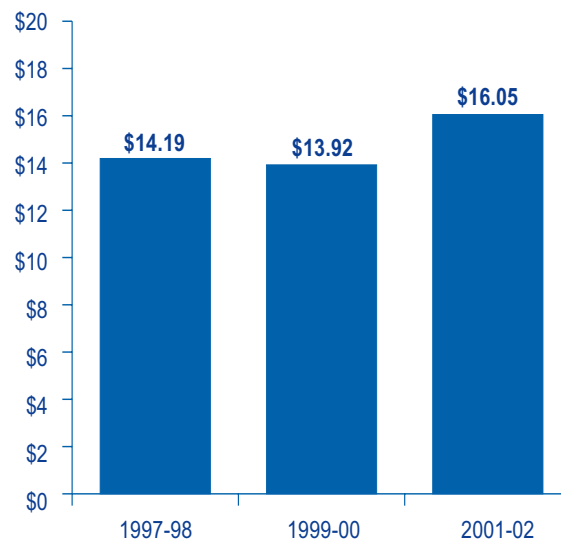
Given the purpose of the program and the characteristics of participants, it is not surprising that 84 percent said they entered the program to acquire skills for a new job. According to the survey, 41 percent of all WIA participants received job-specific

skills training; this is about the same percentage reported by dislocated workers leaving JTPA during 1999-00.² The most common type of training was in computer skills; about half of all participants received such training (see Figure 3). Roughly 20 to 25 percent received training in math and various workplace skills (e.g., team work, problem-solving, work habits).

²Among participants leaving WIA during 2001-02, 67 percent reported that they received some form of training. Among those receiving any training, 62 percent said they received job-specific skills training or 41 percent of all participants. Among participants leaving JTPA during 1999-00, 58 percent reported that they received some form of training. Among those receiving any training, 74 percent said they received job-specific skills training or 43 percent of all participants.

FIGURE 2

Median Hourly Wage Six to Nine Months Before Entering the WIA/JTPA Dislocated Worker Program



Note: All wages are reported in first quarter 2003 dollars.

Among those receiving job-specific training, 76 percent said their skills improved a lot (see Figure 4), virtually the same percentage as reported during the last year of JTPA. The majority of those receiving training in computers also said their skills improved a lot. Fewer reported substantial improvement in workplace or basic skills.

Administrative records data provide additional information on training received by WIA dislocated workers. These data suggest 59 percent of the participants

leaving the program during 2001-02 received occupational skills training.³ Sixteen percent received an associate degree, eight percent received an occupational skills license, and twenty-five percent obtained an occupational skills certificate/credential.

³Occupational skills training in the administrative records data could include the following types of services: occupational skills training, programs that combine workplace training with related instruction, training programs operated by the private sector, skill upgrading and retraining, entrepreneurial training, job readiness training, and customized training.

FIGURE 3
Percentage of WIA Dislocated Workers Receiving Various Skills Training (among all participants)

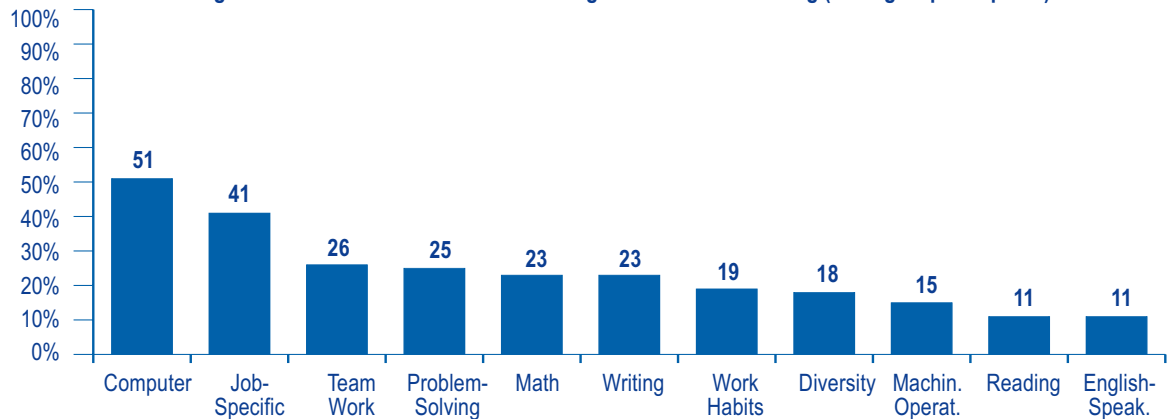
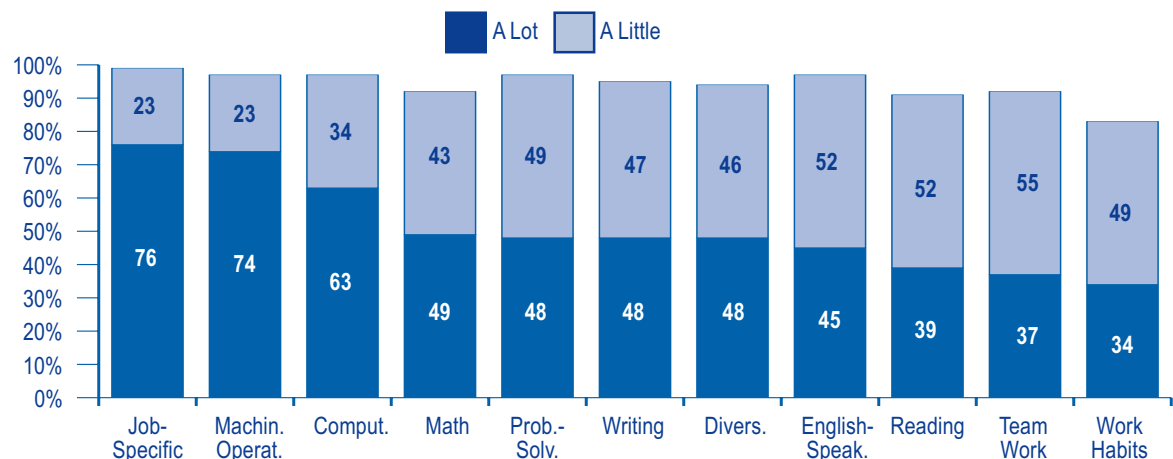


FIGURE 4
Percentage of WIA Dislocated Worker Participants Receiving Various Skills Training Who Reported Their Skills Improved a Little or a Lot



Among those employed after the program, 65 percent said their training was related to their job. This is roughly the same proportion reported during the last few years of JTPA.

Participant Satisfaction

Survey results indicate participants were generally satisfied with the WIA Dislocated Worker program. Eighty-three percent said they met their educational objectives, and eighty-six percent reported overall satisfaction with the program, roughly the same levels of satisfaction reported two years ago. Over 90 percent were satisfied with equipment used for training, the facilities and buildings, and the quality of teaching. The lowest level of reported satisfaction was for advice on selecting a program, with 51 percent very satisfied and an additional 32 percent somewhat satisfied.

The support services most frequently needed by participants were information on job openings, financial assistance, and help

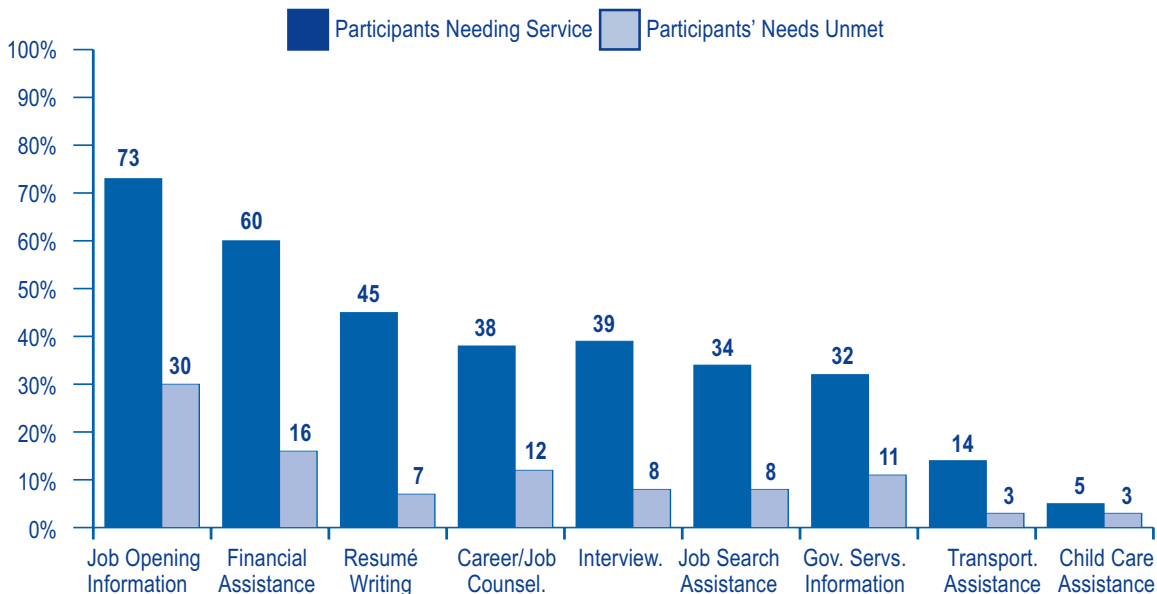
with resumé writing (see Figure 5). Most of those requiring these services did receive them. However, 30 percent reported an unmet need for information on job openings. This has been a persistent issue in our evaluations. A similar percentage reported unmet needs for this information during 1997-98 and 1999-00.

Employer Satisfaction

It was not feasible to survey employers about each of the WIA programs included in the study (Dislocated Worker, Adult, and Youth) separately because there were too few individuals coming out of each program for a sufficient percentage of employers in the state to have had experience employing recent participants. Employers were instead asked about workers who had been trained by WIA. This section presents findings on employer satisfaction with new employees who completed any type of WIA program.

FIGURE 5

WIA Dislocated Worker Participants Needing a Service and Percentages Leaving With Needs Unmet

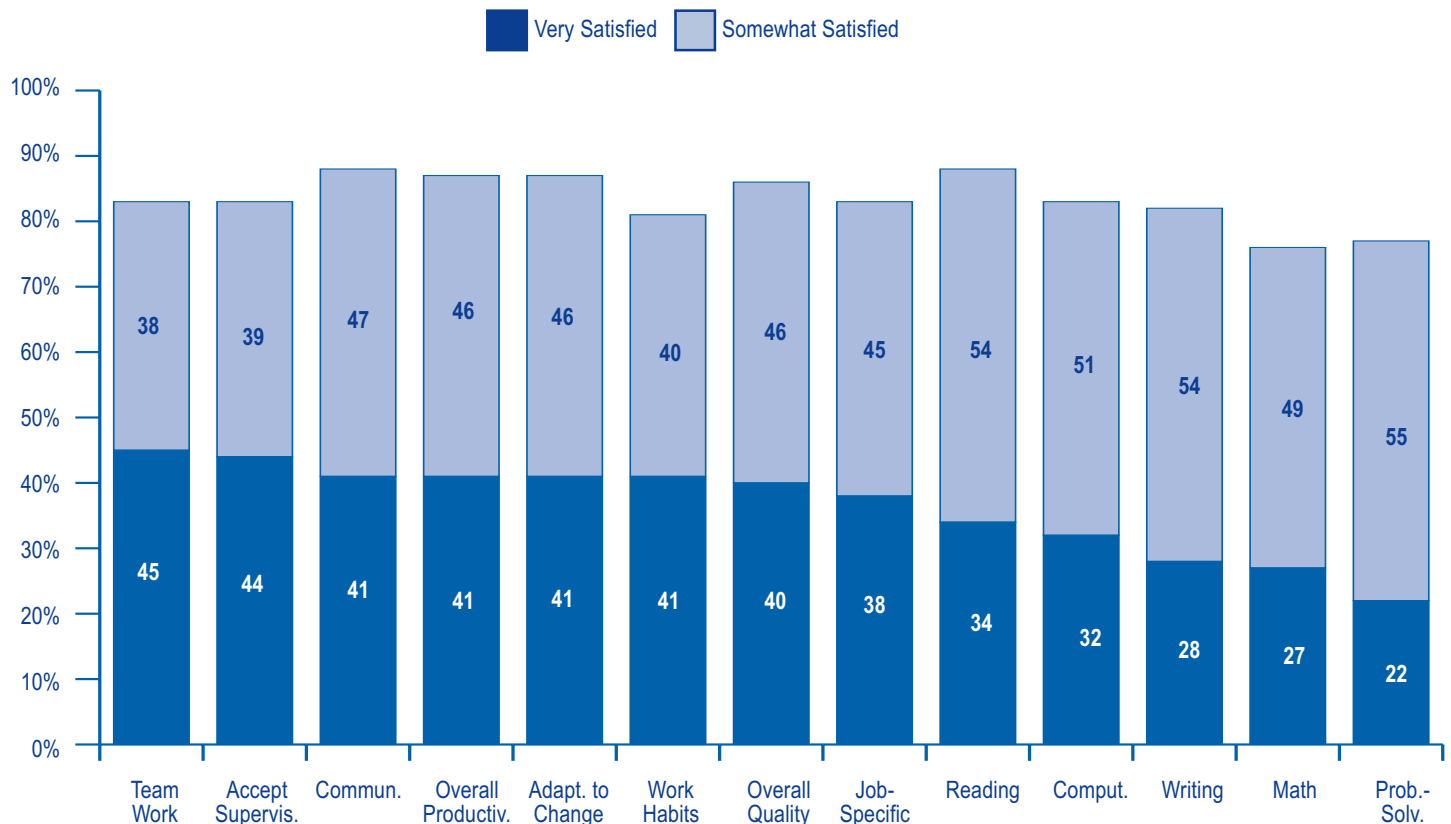


Overall, the results indicate the majority of employers were satisfied with the quality and productivity of these workers. Eighty-six percent of employers said they were either somewhat or very satisfied with the overall quality of work of these new employees, and eighty-seven percent were satisfied with the workers' overall productivity (see Figure 6).

In terms of being very satisfied, employers tended to be more satisfied with general workplace skills (e.g., team work and ability to accept supervision) and less satisfied with job-specific skills. The lowest levels of reported satisfaction were with computer, writing, math, and problem-solving skills.

FIGURE 6

Percentage of Employers Satisfied With New Employees Who Had Recently Completed a WIA Program



Employment and Earnings

According to survey responses, 82 percent of the 2001-02 WIA Dislocated Worker program participants had a job six to nine months following their program (see Figure 7). Seventy-four percent had employment reported to ESD during the third quarter after they left the program.⁴ Their median hourly wage was \$13.84. The typical (median) participant had sufficient earnings to support 6.5 persons above the poverty level. According to the survey responses, 75 percent of participants employed nine months after the program had health benefits provided by their employer, and 43 percent had pension benefits.

The labor market outcomes for participants leaving the WIA Dislocated Worker program during 2001-02 compare favorably to those for the last year of JTPA (see

Figure 7). Despite the economic downturn, the employment rate did not decline and earnings increased in real terms.⁵

⁴ESD wage file includes 85 to 90 percent of the employment in Washington; the major exclusion is self-employment.

⁵Several factors need to be considered when comparing outcomes for program participants over time. Economic conditions and the demographic characteristics of participants both changed between 1999-00 and 2001-02. The Workforce Training and Education Coordinating Board estimated statistical models that examine the impacts of participant characteristics (age, gender, race, prior education, disability status, preprogram wage, industry of dislocation) and local economic conditions (unemployment rates, average earnings in trade) on employment rates and earnings. These models indicate that changes in economic conditions and participant characteristics tended to offset each other in terms of their impacts on postprogram employment and earnings for dislocated workers. However, after taking these changes into account, the models suggest that outcomes for the 2001-02 dislocated workers were higher than expected.

FIGURE 7

Employment and Earnings of WIA Dislocated Worker Program Participants in the Third Quarter After Leaving Program

	1995-96*	1997-98*	1999-00*	2001-02
Percentage self-reporting employment during third quarter after leaving program	81	83	83	82
Percentage with employment reported by employers to ESD the third quarter after leaving program	74	74	75	74
Median quarterly hours worked, of those working	493	484	495	494
Percentage employed full-time of those working (averaging 30 or more hours/week)	75	67	70	74
Median annualized earnings of those working	\$27,940	\$24,533	\$24,841	\$26,297
Size of household in which median earnings would support at poverty level	7.0	6.0	6.1	6.5
Size of household in which median earnings would support at twice poverty level	2.6	2.0	2.1	2.3
Median hourly wage of those working	\$14.88	\$13.11	\$13.29	\$13.84
Percentage receiving medical benefits from employment (self-reported)	68	68	72	75
Percentage receiving pension benefits from employment (self-reported)	38	42	40	43

Notes: Earnings and wages are expressed in first quarter 2003 dollars. Poverty levels are based on federal poverty guidelines identified by the Department of Health and Human Services for 2003.

*Figures for 1995 through 2000 are for the JTPA III Dislocated Worker Program.

The median wage of former WIA participants is high, but there is considerable variation in wages. The distribution of wages for the 2001-02 Dislocated Worker program participants was:

	<i>Hourly Wage</i>
Lowest 25%	Below \$10.64
Second 25%	\$10.64 - \$13.84
Third 25%	\$13.84 - \$18.12
Highest 25%	Above \$18.12

Prior to layoff, over half (59 percent) of the participants worked in manufacturing jobs, including 13 percent in aerospace, 12 percent in the lumber and wood products, and 7 percent from primary metals (primarily aluminum). After leaving the program, only 20 percent found jobs in the manufacturing sector, and only about 1 percent found employment in the aircraft industry. During the third quarter after leaving the program, 32 percent were employed in services and 11 percent in retail trade (see Figure 8).

FIGURE 8
Industry of Employment of WIA Dislocated Workers
During Third Quarter Prior to Program and Third Quarter After Program

Industry Group	Prior Employment	Postprogram Employment
Agriculture, Forestry, Fishing	2.1%	1.6%
Construction	2.9%	6.3%
Manufacturing	59.1%	19.7%
Food and Kindred	4.7%	1.6%
Apparel and Textile	1.9%	0.1%
Lumber and Wood	11.9%	4.3%
Paper	5.5%	2.4%
Printing, Publishing	1.0%	1.0%
Primary Metals (Aluminum)	6.7%	0.8%
Fabricated Metal Products	1.8%	1.0%
Machinery, Computer	4.9%	1.5%
Electronics	1.8%	1.0%
Aircraft	5.6%	4.7%
Transportation, Communication., Utilities	5.4%	10.0%
Wholesale Trade	5.1%	6.7%
Retail Trade	6.6%	11.2%
Finance, Insurance, Real Estate	4.8%	6.1%
Temporary Help Supply	2.2%	4.5%
Computer Programming, Data Processing	1.9%	2.2%
Health Services	1.3%	7.3%
Educational Services	0.7%	3.9%
Social Services	0.7%	2.3%
Engineering, Research, Management	2.0%	3.2%
Other Services	3.3%	8.2%
Public Administration	1.9%	6.4%
TOTAL	100.0%	100%

We compared the hourly wages of dislocated workers during the third quarter prior to program enrollment and the third quarter after leaving the program. The typical (median) wage replacement rate was 90 percent (the mean replacement rate was 94 percent).⁶ Regression analysis suggests a worker’s age, gender, education, predislocation wage, and industry have significant effects on wage replacement. Prior wages have the strongest impact—the higher the wage prior to dislocation, the more difficult it is to replace those earnings. Industry of dislocation, even after controlling for prior wages and demographic characteristics, also affects replacement rates. Workers leaving the lumber, aluminum, and aircraft industries have an especially difficult time regaining previous earnings levels. Replacement rates tend to be higher among those leaving jobs in business services and other services.

⁶Wage replacement is measured here as follows. We calculate the ratio of the hourly wage during the third quarter after the program to the wage during the third quarter prior to the program for each participant who had nonzero wages in both of the periods. The reported statistics are the overall median and mean for these participants.

The earnings of former participants varied by gender and ethnicity. During the third quarter after exit, the median wage for women was 80 percent that of men. The median hourly wage for Hispanics was 86 percent that of whites. Note: these gender and ethnic earnings differences are characteristic of the general labor market. Earnings also varied by disability status. Administrative records suggest 8 percent of the participants included in this study had a disability. Their median earnings were 94 percent that of those with no reported disability.

Net Impacts

Every four years the Workforce Training and Education Coordinating Board conducts net impact and cost-benefit analyses of workforce development programs. The last net impact study, which was conducted in 2002 by the W.E. Upjohn Institute for Employment Research, examined the experience of participants who left JTPA programs during the 1999-00 and 1997-98 program years. The analysis attempts to estimate what happens to these participants as compared to what would have happened if they did not enroll in the program. The study found JTPA increased the long-term earnings of dislocated worker participants, by increasing employment rates and hours worked.

The Workforce Board will not update this study until 2006. In the meantime, Washington State and Upjohn have continued this research as participants in the seven-state Administrative Data and Evaluation (ADARE) project funded by the U.S. Department of Labor. Early results for WIA participants from 2000-01 suggest the

net impacts on employment and earnings continue under WIA. Employment rates for the 2000-01 WIA exiters in Washington State were nine percentage points higher for dislocated workers than for similar workers without WIA intensive or training services. Quarterly earnings increased by \$440 for dislocated workers.

Results of the 2002 JTPA Study

The 2002 JTPA study results were presented in the last edition of *Workforce Training Results*, and these results are reproduced here for your information.

The objective of the analysis is to determine the short-term and long-term impacts of program participation on employment, wages, hours worked, quarterly earnings, and receipt of Unemployment Insurance (UI) benefits and public assistance. In order to estimate these impacts, individuals who participated in the JTPA III program were compared to individuals who had similar characteristics, but who didn't participate. The comparison group members were selected from registrants to the state's employment service. Short-term net impacts were derived by examining outcomes for individuals who exited the programs (or from the employment service) in fiscal year 1999-00 and long-term impacts for individuals who exited in fiscal year 1997-98.

The JTPA III program increases the long-term earnings of participants due to positive effects on employment rates and hours worked

Figure 9 shows the short-term net impacts of the JTPA III program. During the third quarter after the 1999-00 participants left

training, there were positive effects on employment and hours worked but hourly wages and earnings were not increased. Also, the program apparently had a small, positive impact on social welfare receipts among these participants. The short-term results for those leaving the program during 1997-98, however, were somewhat stronger. There was a larger employment impact, the earnings impact was positive, and the impact on social welfare receipts was negative.

The long-term net impacts of training are also shown in Figure 9. These are the impacts observed 8 to 11 quarters after participants left the program during 1997-98. The strong, positive impact on employment for this cohort persists in the longer term, and there is a substantial earnings effect. Moreover, training is associated with reduced receipt of food stamps and medical benefits.

Benefits and Costs

The cost-benefit analysis estimates the value of the net impact on earnings, employee benefits (estimated at 20 percent of earnings), social welfare benefits, UI benefits, and certain taxes.⁷ Program costs include both direct program costs and support payments borne by the state, as well as the foregone earnings borne by program participants. Benefits and costs are calculated for the observed period of time and are forecast out to the age of 65 based on a statistical model. In order to compare benefits and costs in terms of net present values, postprogram benefits and costs are discounted by 3 percent per year and all figures are stated in 2001 dollars. The benefits and costs presented here are based on impacts estimated for participants leaving programs in 1997-98, because a longer-term follow-up is required for this analysis.

FIGURE 9
Short and Long-Term Net Impact Results for JTPA Title III Dislocated Workers Who Left the Program During PY 1997-98 or PY 1999-00

	Short-Term 1999-00 Exiters	Short-Term 1997-98 Exiters	Long-Term 1997-98 Exiters
Employment: percentage in reported employment	2.2	7.5	7.3
Mean Hourly Wage: of those working	-\$1.30	-\$0.47*	-\$0.08*
Mean Hours Worked: per quarter for those working	17.0	19.6	26.6
Mean Quarterly Earnings: of those working	-\$397	\$234	\$466
Temporary Assistance for Needy Families (TANF): percentage receiving aid	1.2	-0.7	-0.4*
Food Stamps: percentage receiving	1.6	-1.6	-1.6
Medical Benefits: percentage receiving	2.2	-2.2	-2.5
UI: percentage receiving			0.2*

Short-term refers to impacts observed in the third quarter after leaving the program. Long-term refers to impacts observed 8 to 11 quarters after leaving the program.

* Not statistically significant at the 0.10 level.

⁷Upjohn estimated the impact of the net change in earnings on social security, Medicare, federal income, and state sales taxes.

Projected beneficial impacts on lifetime earnings more than offset the relatively high foregone earnings of program participants, and participant benefits far outweigh public costs.

For each participant in the program, the public (taxpayer) cost is almost \$2,600 over the length of their enrollment, and the participant cost is \$12,175 in foregone earnings (see Figure 10). During the first two and a half years after leaving, the average participant will gain \$4,333 in earnings. During the course of working life to age 65, the average participant will gain about \$63,000 in net earnings (earnings minus foregone earnings) and over \$15,000 in employee benefits. These are net gains compared to the earnings of similar individuals who did not receive the training. The ratio of participant benefits to program costs, not considering impacts on social welfare benefits or taxes, is about \$78,000 to \$2,600, or 30 to 1.

The total public (taxpayer) costs is less than the program costs because the training is associated with decreased state welfare expenditures and increased tax revenues. From the time of leaving training to age 65, the public is forecast to save about \$2,900 in welfare and UI costs. Moreover, the public is expected to gain almost \$19,000 per participant in additional social security, Medicare, federal income, and state sales taxes; far greater than the direct cost of college training.

Areas for Improvement

This evaluation found several areas of strength for the WIA Dislocated Worker program. Participants were generally satisfied with the program, and most said their educational objectives had been met. The labor market outcomes for participants leaving the WIA Dislocated Worker program during 2001-02 compare favorably to those who left JTPA during 1999-00. Despite the economic downturn, the postprogram employment rate did not decline and earnings increased in real terms. Among those receiving job-specific training, 76 percent said their skills improved a lot, virtually the same percentage as reported during the last year of JTPA.

FIGURE 10
Benefits and Costs JTPA Title III for Dislocated Workers

	First 2.5 Years After Program		Forecast to Age 65	
	Participant	Public	Participant	Public
Earnings	\$4,333		\$75,293	
Employee Benefits	\$867		\$15,059	
Taxes	-\$1,090	\$1,090	-\$18,936	\$18,936
UI Benefits	\$526	-\$526	-\$1,827	\$1,827
TANF Benefits*	-\$97	\$97	-\$217	\$217
Food Stamp Benefits	-\$39	\$39	\$45	-\$45
Medical Benefits	-\$260	\$260	-\$932	\$932
Foregone Earnings	-\$12,175		-\$12,175	
Program Costs		-\$2,575		-\$2,575
TOTAL	-\$7,935	-\$1,615	\$56,310	\$19,292

*TANF benefits reflect the value of cash grants, child care, and other client support services.

There are, however, areas for improvement. Participant satisfaction with advice on program selection is relatively low, and substantial numbers report an unmet need for information about job openings. This has been a persistent issue in our evaluations.

The wages of former participants differ by gender, race, and ethnicity. Women earn less than men, and Hispanics earn less than whites. The program might do more to eliminate gender, racial, and ethnic differences in the labor market outcomes.

Adult Basic Skills Education

Adult Basic Skills Education/English as a Second Language (ABE/ESL) is provided by community and technical colleges and, to a lesser extent, community-based organizations. Among the ABE/ESL students included in this report, 94 percent received their training at community and technical colleges, and 6 percent at community-based organizations. This report is limited to adults who identified employment-related reasons for enrolling in basic skills courses and who proceeded to take only basic skills courses.¹ Those who took basic skills courses for nonemployment-related reasons are not included.

ABE/ESL includes courses in four categories:

1. ABE provides remediation in reading, writing, and mathematics for adults whose skills are at, or below, the eighth grade level.
2. ESL provides nontransfer level instruction at competency levels ranging from beginning to advanced.
3. GED Test Preparation provides instruction in basic academic skills beyond ABE for those students whose goal is to pass the high school equivalency examination.
4. High School Completion provides instruction in high school courses for adults who want to earn a high school diploma.

For this study, participant records were obtained for 15,686 adults who left an ABE/ESL program during the 2001-02 school year. The study also includes information from Employment Security Department (ESD) wage files from Washington, Idaho, Montana, Alaska, and Oregon. Federal and military employment records were also included. In addition, 213 former students completed a telephone survey, providing additional data on their employment and satisfaction with the training. Survey responses from 276 firms that hired new employees who recently received ABE/ESL instruction provided information on employer satisfaction with the skills of these individuals.

¹Individuals who took vocational courses in addition to basic skills are included in the chapter on community and technical college job preparatory training. This chapter does, however, present net impact estimates for concurrent basic skills and job preparatory training.

Participant Characteristics

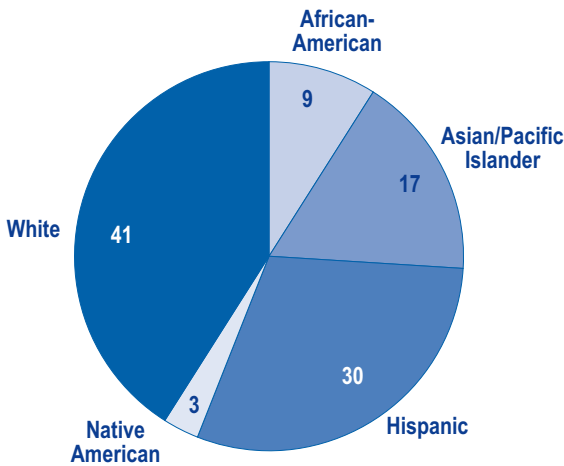
ABE/ESL serves the most racially and ethnically diverse group of participants of any of the workforce development programs included in this report. Fifty-nine percent of the students were people of color (compared to twenty-one percent of the state population),² thirty percent were Hispanic, and seventeen percent were Asian/Pacific Islander (see Figure 1).

Fifty-seven percent of participants were female. The median age, when leaving a program, was 30 years; 25 percent were over age 39. One quarter of the students received public assistance, and 13 percent were single parents.

Competency Gains

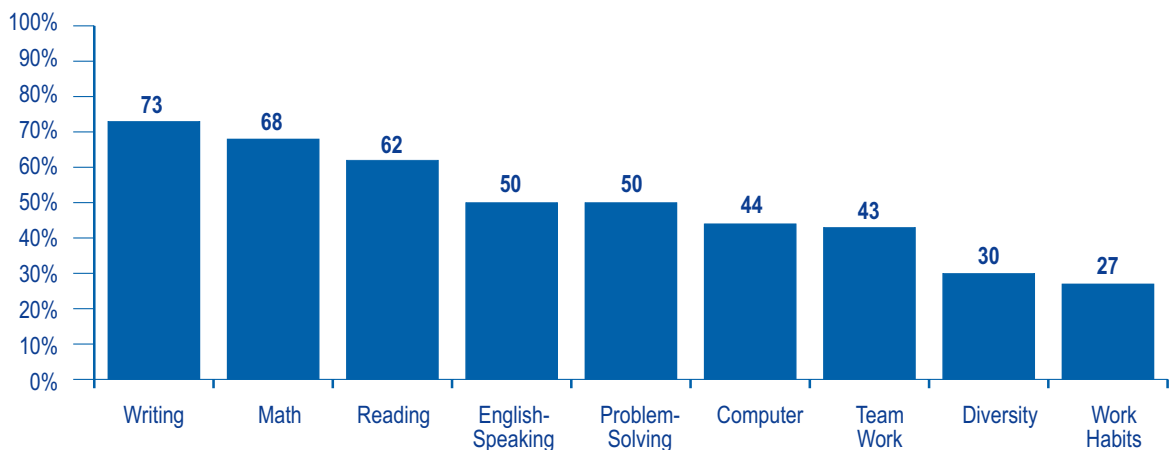
Based on the survey results, most students entered the program to improve reading skills (66 percent), math skills (71 percent), and/or English-speaking skills (63 percent); over half said that one of their reasons for enrolling was to get a GED. When surveyed, the majority said they did receive instruction in these areas (see Figure 2).

FIGURE 1
Percentage of ABE/ESL Students by Race and Ethnicity



²Seventy-nine percent of Washington residents, according to the 2000 Census, are non-Hispanic whites. Hispanics now comprise 7.5 percent of the state’s population. The racial composition figures depend upon how multiracial residents are counted. If those reporting more than one race are included, about 4 percent of our residents are African-American, nearly 3 percent are Native American, and just over 7 percent are Asian/Pacific Islander. Among those reporting only one race, 3 percent are African-American, under 2 percent are Native American, and 6 percent Asian/Pacific Islander.

FIGURE 2
Percentage of ABE/ESL Students Receiving Various Skills Training



Many students also reported receiving training in problem-solving skills, computers, and team work. About half of the students who received instruction in speaking English, reading, writing, and math reported these skills improved a lot (see Figure 3).

Participant Satisfaction

In general, students said they were satisfied with the training they received. Ninety-one percent of former students reported being satisfied with their basic skills instruction overall, and eighty percent stated they had met their educational objectives (down

somewhat from eighty-seven percent reported two years ago). Satisfaction with the quality of teaching, training facilities, and length of training was 90 percent or higher.

When asked about support services, students reported most frequently needing information on job openings (44 percent), help with resumé writing (39 percent), and financial assistance (38 percent). Relatively high percentages of participants said they left the program with their needs in these areas unmet (see Figure 4). Either they did not receive the service, or what was provided did not meet their needs.

FIGURE 3
Percentage of ABE/ESL Students Receiving Various Skills Training Who Reported Their Skills Improved a Little or a Lot

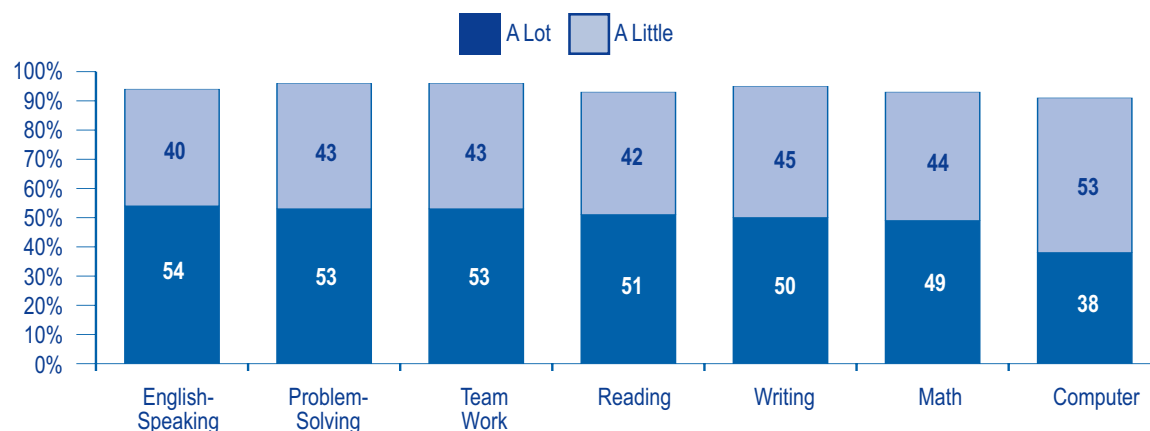
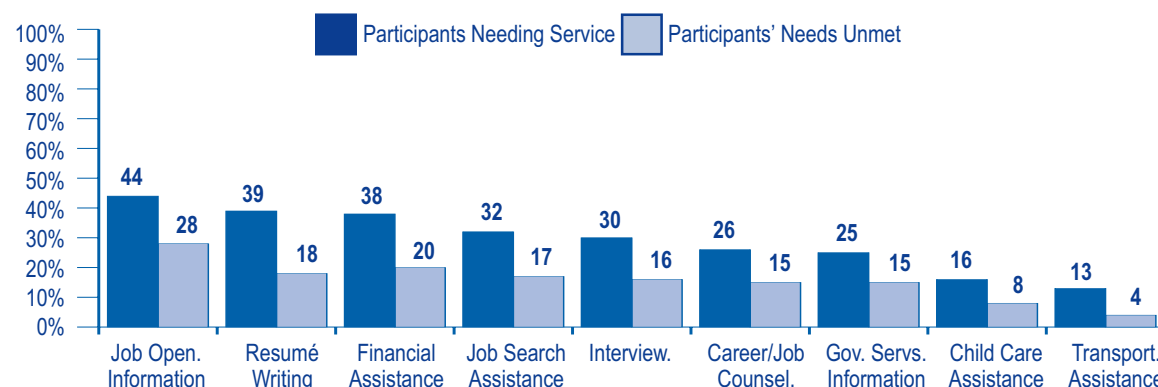


FIGURE 4
ABE/ESL Students Needing a Service and Percentages Leaving With Needs Unmet



Employer Satisfaction

The employer survey asked firms to evaluate new employees who had recently completed an ABE/ESL program. Ninety-four percent of employers stated they were at least somewhat satisfied with the overall work quality of these new employees; only about one third, however, said they were very satisfied (see Figure 5). Employers tended to be more satisfied with workplace skills such as team work, willingness to

accept supervision, and good work habits and less satisfied with the job-specific, problem-solving, computer, and basic skills of former students.

Employment and Earnings

According to the survey responses, 64 percent of the 2001-02 ABE/ESL students were employed during the period six to nine months after leaving their program (see Figure 6). To find out more about the

FIGURE 5
Percentage of Employers Satisfied With New Employees Who Had Recently Participated in an ABE/ESL Program

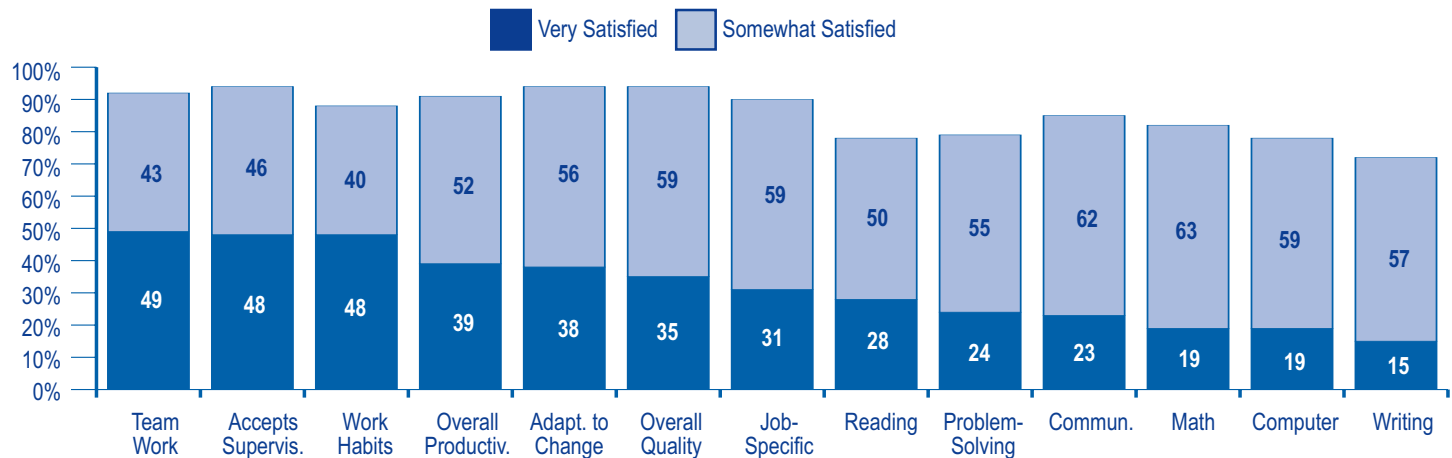


FIGURE 6
Employment and Earnings of ABE/ESL Students in the Third Quarter After Leaving Program

	1995-96	1997-98	1999-00	2001-02
Percentage self-reporting employment during third quarter after leaving program	59	82	62	64
Percentage with employment reported by employers to ESD the third quarter after leaving program	49	62	60	55
Median quarterly hours worked, of those working	419	452	433	419
Percentage employed full-time of those working (averaging 30 or more hours/week)	54	57	57	54
Median annualized earnings of those working	\$13,425	\$16,358	\$15,804	\$15,104
Size of household in which median earnings would support at poverty level	2.4	3.3	3.2	3.0
Size of household in which median earnings would support at twice poverty level	0.7	0.9	0.9	0.8
Median hourly wage of those working	\$8.35	\$9.20	\$9.54	\$9.20
Percentage receiving medical benefits from employment (self-reported)	52	63	45	53
Percentage receiving pension benefits from employment (self-reported)	37	35	29	32

Notes: Earnings and wages are expressed in first quarter 2003 dollars. Poverty levels are based on federal poverty guidelines identified by the Department of Health and Human Services for 2003.

former students' postprogram employment and earnings, we matched student records with ESD wage files from Washington and neighboring states. These files contain information only on those individuals with employment reported for Unemployment Insurance (UI) purposes (85 to 90 percent of the total employment in state, with self-employment being the largest type of employment not covered).

According to ESD record matches, 55 percent of ABE/ESL students had reported employment during the third quarter after they left the program, down from the 60 percent reported two years ago. Median postprogram earnings (\$15,104) and hourly wages (\$9.20), measured in 2003 dollars, also declined. The business cycle contributed to the decline in employment and earnings. The ABE/ESL students leaving programs during 2001-02 faced a much weaker labor market than did those who left during 1999-00.

The third quarter after they left the program, the typical (median) participant had sufficient earnings to support a household of 3.0 persons above the poverty level. According to the survey responses, 53 percent of those employed nine months after their training had health benefits provided by their employer, and 32 percent had pension benefits.

FIGURE 7
Percentage of ABE/ESL Students With Employment Reported to ESD Six to Nine Months After Leaving Program

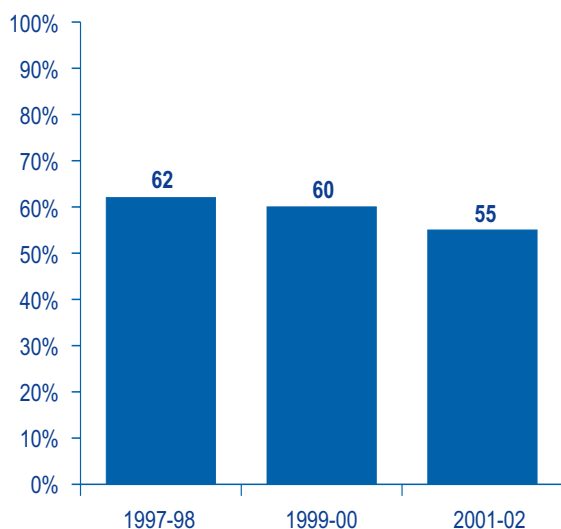


FIGURE 8
Industry of Employment of ABE/ESL Students in the Third Quarter After Leaving Program

Industry Group	Employment
Agriculture, Forestry, Fishing	3.7%
Construction	5.0%
Manufacturing	15.2%
Food and Kindred	4.4%
Apparel	1.2%
Lumber and Wood	1.7%
Fabricated Metal Products	1.1%
Electronics	0.9%
Transportation Equipment	1.1%
Other Manufacturing	4.8%
Transportation, Communication, Utilities	2.4%
Wholesale Trade	3.6%
Retail Trade	25.5%
Finance, Insurance, Real Estate	2.1%
Services	41.3%
Hotels	4.5%
Cleaning and Maintenance	4.1%
Temporary Help Supply	4.1%
Auto Repair	1.8%
Amusement and Recreation	1.8%
Health Services (Nursing Homes, Hospitals)	7.7%
Social Services	5.7%
Private Households	4.4%
Other Services	7.3%
Public Administration	1.1%
TOTAL	100%

Employment among former students is heavily concentrated in retail trade and services. Among those employed in services, many work for hotels, cleaning services, temporary help agencies, nursing homes, hospitals, and private households.

There is a substantial gender gap in labor market outcomes among former students employed during the third quarter after exit. Employment rates, hours worked, earnings, and wages are significantly lower for women. People of color tended to receive hourly wage rates equal to or greater than whites.

According to administrative records, 5 percent of the ABE/ESL students leaving college during 2001-02 had a disability. They did less well in the labor market than their fellow students. They were less likely to have employment reported to ESD (41 percent versus 56 percent), they worked fewer hours during the third quarter after exit (a median of 297 versus 423), and their median hourly wage was 90 percent that of students without a disability.

FIGURE 9
Gender Differences in Labor Market Outcomes Among ABE/ESL Students Six to Nine Months After Leaving Program

	Women	Men	Ratio
Employment reported to ESD	52%	60%	87%
Median quarterly hours worked	391	450	87%
Median annual earnings	\$13,220	\$17,739	75%
Median hourly wage	\$8.72	\$10.00	87%

Net Impacts

Every four years the Workforce Training and Education Coordinating Board (Workforce Board) conducts net impact and cost-benefit analyses of workforce development programs. The last net impact study, which was conducted in 2002, examined the experience of participants who left programs during the 1999-00 and 1997-98 program years. Study results were presented in the last edition of *Workforce Training Results*, and these results are reproduced here for your information.

The net impact analysis, conducted by the W.E. Upjohn Institute for Employment Research, attempts to estimate what happens to program participants as compared to what would have happened if they did not receive ABE/ESL education. The objective is to determine the short-term and long-term impacts of program participation on employment, wages, hours worked, quarterly earnings, and receipt of UI benefits and public assistance.

In order to estimate these impacts, individuals who enrolled in the program were compared to individuals who had similar characteristics, but who didn't participate in it. The comparison group members were selected from registrants to the state's employment service. Short-term net impacts were derived by examining outcomes for individuals who exited the programs (or from the employment service) in fiscal year 1999-00 and long-term impacts for individuals who exited in fiscal year 1997-98.

Due to long-term impacts on employment, the program was found to increase total lifetime earnings. Among those working, the study found no positive impact on hourly wages or earnings.

Figure 10 shows the short-term impacts of the program. During the third quarter after the 1999-00 participants left training, no positive net impacts on employment or earnings were found. Program participation was associated with substantial increases in social welfare benefits receipt.

The long-term net impacts are also shown in Figure 10. Again, there were no positive impacts found on the hourly wages or earnings of those working. There was, however, a modest net impact on employment. Increases in social welfare benefit receipt were more moderate in the longer term.

The results discussed above are for ABE/ESL students who did not receive any other type of training. The data also permitted the study to examine the outcomes for basic skills students who also received concurrent job preparatory training.³ Figure 11 shows the short-term and long-term impacts of such training.

Pursuing job preparatory training concurrently with ABE/ESL training results in much stronger labor market outcomes.

³These students received ABE/ESL instruction either the quarter before or during their job preparatory training.

FIGURE 10

Short- and Long-Term Net Impact Results for ABE/ESL Students Who Left the Program During PY 1997-98 and 1999-00

	Short-Term Impacts	Long-Term Impacts
Employment: percentage in reported employment	-5.2	1.6
Mean Hourly Wage: of those working	\$0.28*	-\$0.20
Mean Hours Worked: per quarter for those working	-48.8	-4.9*
Mean Quarterly Earnings: of those working	-\$613	-\$43*
Temporary Assistance for Needy Families (TANF): percentage receiving aid	20.9	7.6
Food Stamps: percentage receiving	18.2	6.7
Medical Benefits: percentage receiving	19.4	8.4
UI: percentage receiving		-2.1

Short-term refers to impacts observed in the third quarter after leaving the program during the 1999-00 school year. Long-term refers to impacts observed 8 to 11 quarters after leaving the program during the 1997-98 school year.

** Not statistically significant at the 0.10 level.*

FIGURE 11

Short-Term and Long-Term Net Impact Results for Those in Concurrent Basic Skills and Job Preparatory Training

	Short-Term Impacts	Long-Term Impacts
Employment: percentage in reported employment	5.3%	7.2%
Mean Hourly Wage: of those working	\$0.29*	\$0.51*
Mean Hours Worked: per quarter for those working	23.6	25.5
Mean Quarterly Earnings: of those working	\$543	\$533
TANF: percentage receiving aid	1.2%	-0.0%*
Food Stamps: percentage receiving	1.4%	0.4%*
Medical Benefits: percentage receiving	3.2% ¹	1.5%*
Unemployment Insurance: percentage receiving		0.1%*

Basic skills training occurred the quarter before or during the job preparatory training span. Short-term refers to impacts observed in the third quarter after leaving the program during the 1999-00 school year. Long-term refers to impacts observed 8 to 11 quarters after leaving the program during the 1997-98 school year.

** Not statistically significant at the 0.10 level*

Concurrent training was associated with a short-term increase of 5.3 percentage points in employment as reported to ESD, and a long-term increase of 7.2 percentage points. Among those with reported employment, there were substantial positive impacts on hours worked. There were also large impacts on mean quarterly earnings—\$543 in the short term and \$533 in the longer term. Note: these impacts are the differences between participant results and the employment and earnings of similar individuals who did not participate in the program.

Benefits and Costs

The cost-benefit analysis estimates the value of the net impact on earnings, employee benefits (estimated at 20 percent of earnings), social welfare benefits, UI benefits, and

certain taxes.⁴ Program costs include both direct program costs and support payments borne by the state, as well as the foregone earnings borne by program participants. Benefits and costs are calculated for the observed period of time and are forecast out to the age of 65 based on a statistical model. In order to compare benefits and costs in terms of net present values, postprogram benefits and costs are discounted by 3 percent per year, and all figures are stated in 2001 dollars. The benefits and costs presented here are based on impacts estimated for participants leaving programs in 1997-98, because a longer-term follow-up is required for this analysis. The results are for those students who took only basic skills courses in the colleges.

For each participant in ABE/ESL, the public (taxpayer) cost is \$983 over the length of their enrollment, and the participant cost is only \$278 in foregone earnings while in school (see Figure 12). During the first two-and-one-half years after leaving college, the average trainee will gain \$660 in earnings. During the course of working life to age 65, the average trainee will gain about \$4,985 in net earnings (earnings minus foregone earnings) and over \$1,000 in employee benefits. These are net gains compared to the earnings of similar individuals who did not receive the training. The ratio of participant benefits to program costs, not considering impacts on social welfare

FIGURE 12 Benefits and Costs of ABE/ESL

	First 2.5 Years After Program		Forecast to Age 65	
	Participant	Public	Participant	Public
Earnings	\$660		\$5,263	
Employee Benefits	\$132		\$1,053	
Taxes	-\$166	\$166	-\$1,324	\$1,324
UI Benefits	\$41	-\$41	-\$3,160	\$3,160
TANF Benefits*	\$861	-\$861	\$228	-\$228
Food Stamp Benefits	\$346	-\$346	\$460	-\$460
Medical Benefits	\$944	-\$944	\$3,391	-\$3,391
Foregone Earnings	-\$278		-\$278	
Program Costs		-\$983		-\$983
TOTAL	\$2,540	-\$3,009	\$5,633	-\$578

*TANF benefits reflect the value of cash grants, child care, and other client support services.

⁴Upjohn estimated the impact of the net change in earnings on social security, Medicare, federal income, and state sales taxes.

benefits or taxes, is \$6,038 to \$983, or 6 to 1. The public is expected to gain roughly \$1,300 per participant in additional social security, Medicare, federal income, and state sales taxes.

Areas for Improvement

ABE/ESL students have to overcome substantial barriers in order to succeed in the labor market. Some lack basic skills, some lack a high school diploma, and some lack proficiency in English. The majority of these students are people of color, many are new to this country, and many are poor. These factors should be taken into account when considering the results.

Overall, the survey responses suggest most students were satisfied with the program, and most said they met their educational objectives. Also, most reported that their basic skills (reading, writing, math) and English-speaking skills improved, although only about one half reported that these skills improved a lot.

Student survey responses suggest a need for wider access to some support services. Many participants left the program with unmet needs for information on job openings, financial assistance, and help with writing a resumé.

Employment rates and earnings were typically low for former ABE/ESL students. In addition to having limited basic skills, many of these individuals lack job-specific skills. According to the employer survey, only 31 percent of employers were very satisfied with the occupation-specific skills of these students. Remember that most of this evaluation was restricted to only those ABE/ESL students who enrolled for a work-related reason, but who did not participate concurrently in vocational training. According to the net impact analysis, impacts on employment and earnings are much stronger for students who combine job preparatory training with basic skills education. Community and technical colleges are working to integrate work skills training in ABE/ESL instruction. These efforts should continue.

Postprogram wages and earnings were substantially lower for women than for men. They were also lower for people with disabilities. The program should do more to improve labor market outcomes for women and people with disabilities.

Workforce Investment Act, Title I-B Adult Program

The Workforce Investment Act (WIA) Title I-B Adult program prepares individuals 18 years and older for participation in the labor force by providing “core services” and access to job training and other services. On July 1, 2000, WIA replaced the Job Training Partnership Act (JTPA) of 1982 (evaluated in previous editions). Core services available to all adults, include skill assessment, labor market information, consumer reports on training programs, and job search and placement assistance. Second and third tier services are available for eligible adults unable to obtain jobs through core services alone. Priority is given to welfare and low-income clients. Intensive services may include more intensive assessments, individual counseling, employment planning, and prevocational and vocational training.

The Employment Security Department (ESD) administers the program at the state level. Twelve local workforce development councils, in consultation with chief local elected officials, oversee WIA Title I-B activities in local areas. Services are coordinated through the state’s one-stop career center system called WorkSource.

For this study, participant records were obtained on 2,436 adults who left the program during the 2001-02 program year (July 1, 2001, to June 30, 2002). Employment related information was obtained through a match with the ESD Unemployment Insurance (UI) wage files in Washington, Idaho, Montana, Alaska, and Oregon. Federal and military

employment records were also included. In addition, 734 former participants responded to a telephone survey, providing additional information on their employment, training, and satisfaction with the program. We assessed employer satisfaction through survey responses from 238 firms that hired employees who had recently completed a WIA Title I-B Adult program.

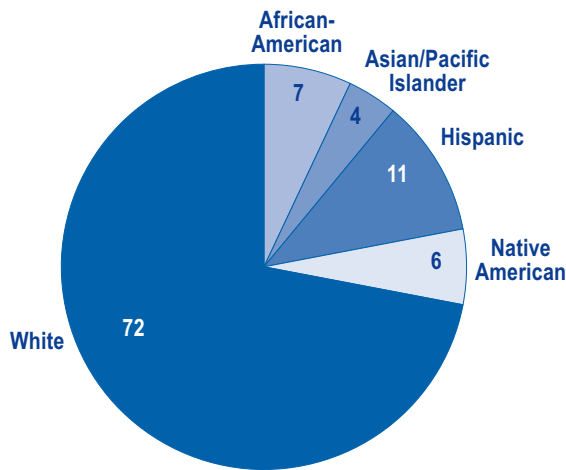
The median length of participant enrollment in the WIA Title I-B Adult program was nine months for those leaving during 2001-02. This is longer than the typical duration (five-and-one half months) for adults participating in the last year of the JTPA program.

Participant Characteristics

Participants in the WIA Title I-B Adult program were more likely to be a member of a racial or ethnic minority group, female, and have less education than the general state population. Among those leaving the program during 2001-02, 28 percent were people of color (see Figure 1).¹ Fifty-nine percent were women. The typical (median) age when leaving the program was 36; one quarter were over 44 years of age.

¹Seventy-nine percent of Washington residents, according to the 2000 Census, are non-Hispanic whites. Hispanics now comprise of the state’s population. The racial composition figures depend upon how multiracial residents are counted. If those reporting more than one race are included, about 4 percent of our residents are African-American, nearly 3 percent are Native American, and just over 7 percent are Asian/Pacific Islander. Among those reporting only one race, 3 percent are African-American, under 2 percent are Native American, and 6 percent Asian/Pacific Islander.

FIGURE 1
Percentage of WIA Title I-B Adult Participants by Race and Ethnicity



Seventeen percent had neither a high school diploma nor GED, and thirty-nine percent received public assistance while enrolled in the program. Among those working during the third quarter prior to the program, the median wage was \$9.47; this is about a dollar higher (in real terms) than the preprogram wage for adults leaving JTPA during the 1999-00 program year.

Competency Gains

Most participants enroll in the WIA Title I-B Adult Program for employment-related reasons. Based on survey results, 79 percent of adults entered the program in order to learn skills for a new job, and 75 percent enrolled to get job search assistance. About one fifth of the participants said they enrolled to improve basic skills (reading, math, and English).

The majority of WIA Title I-B adults (55 percent) reported they did receive some type of training as part of their program. Among the adults leaving WIA Title I-B during 2001-02, the most common type of training was in computer skills (see Figure 2). Thirty-five percent of all former participants said they received job-specific skills training, down from forty-four percent reported among adults leaving JTPA during 1999-00.²

²Fifty-five percent of the 2001-02 WIA Title I-B adults reported receiving any training. Among those receiving any training, 64 percent received job-specific skills training. Fifty-nine percent of the 1999-00 JTPA adults reported receiving training. Among those that did, 74 percent received training in job-specific skills.

FIGURE 2
Percentage of WIA Title I-B Adult Participants Receiving Various Skills Training (among all participants)



About one fifth of participants had training in writing, math, and various workplace skills (work habits, team work, problem-solving, and diversity).

WIA Title I-B Adult participants receiving training generally felt it improved their skills (see Figure 3). The percentage reporting that their skills improved a lot was highest for occupational training (machinery operation and job-specific skills) and lowest for basic skills (math, reading, and writing).

Among those employed nine months after leaving training in the WIA Title I-B Adult program in 2001-02, 63 percent said their training was related to that job. This is down from 69 percent reported by adults leaving JTPA in 1999-00.

Administrative records data provide additional information on training received by WIA Title I-B Adult participants.³ These data suggest 46 percent of the WIA Title I-B adults leaving the program during 2001-02 received occupational skills training as part of their program.⁴ Fifteen percent received on-the-job training.⁵ (Note that participants can receive more than one type of training.)

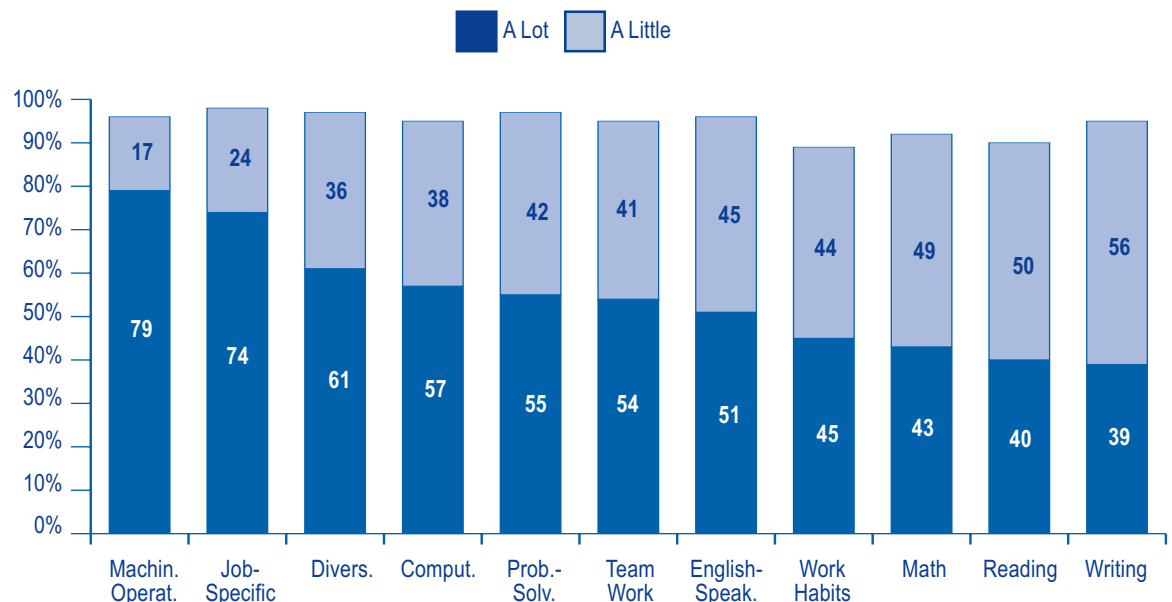
³These data are collected through the Services, Knowledge, and Information Exchange System data reporting system developed by ESD.

⁴Occupational skills training in the administrative records data could include the following types of services: occupational skills training, programs that combine workplace training with related instruction, training programs operated by the private sector, skill upgrading and retraining, entrepreneurial training, job readiness training, and customized training.

⁵On-the-job training refers to training provided by an employer to a paid participant engaged in productive work that: (a) provides knowledge or skills essential to the performance of the job; (b) provides reimbursement to the employer or up to 50 percent of the wage of the participant; and (c) is limited to the period of time required for a participant to become proficient in the occupation.

FIGURE 3

Percentage of WIA Title I-B Adult Participants Receiving Various Skills Training Who Reported Their Skills Improved a Little or a Lot



These data also included information on credential attainment. Among those leaving the program during 2001-02, 8 percent received an associate degree, 9 percent received occupational skills licenses, and 28 percent obtained an occupational skills certificate/credential. We examined the impact of receiving these credentials on postprogram wages. Postprogram wages were regressed on a long list of demographic factors,⁶ prior education, preprogram employment status, and receipt of the various credentials. Controlling for these other factors, receipt of an occupational license had a significant impact on wages, adding about \$1.80 per hour. Receipt of an occupational skills certificate was associated with higher wages, but the impact was not statistically significant. Obtaining an associates degree had a large and significant impact on postprogram wages, adding about \$3.30 per hour.

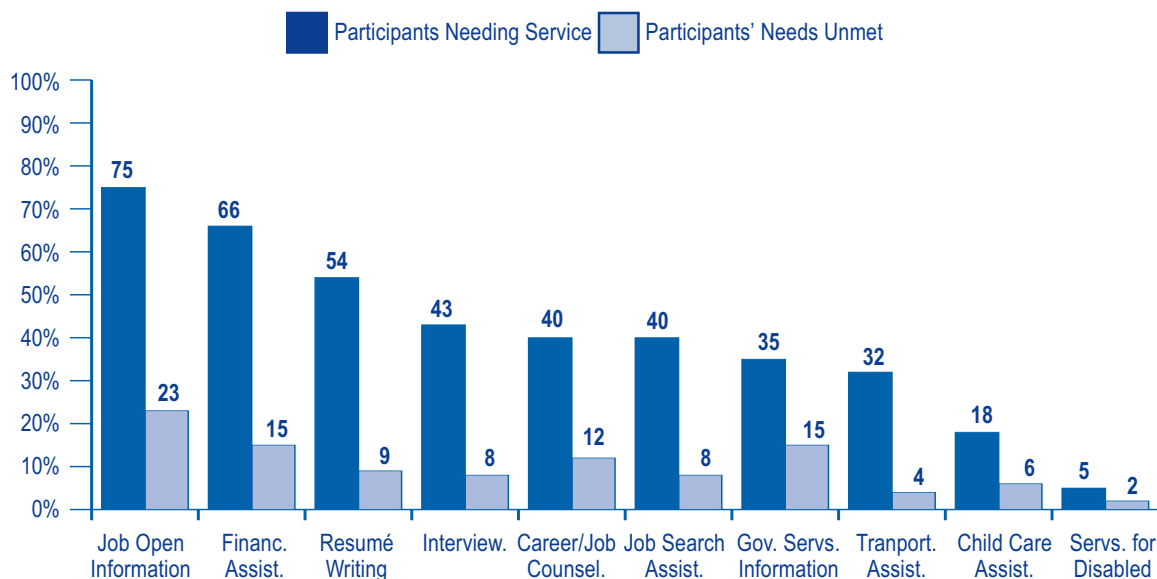
Participant Satisfaction

Survey results indicate participants were generally satisfied with the program. Eighty-seven percent of participants reported they were satisfied with the overall quality of the program. Eighty-four percent said their educational objectives had been met. These are virtually the same levels of satisfaction that were reported during the last year of JTPA (1999-00).

Based on the survey results, many WIA Title I-B adults needed employment and support services. Participants most frequently reported needing information on job openings, financial assistance, and assistance with resumé writing (see Figure 4). Most of those needing these services

⁶These factors include age, gender, race, disability status, veteran status, limited English proficiency, and receipt of public assistance at program registration.

FIGURE 4
WIA Title I-B Adult Participants Needing a Service and Percentages Leaving With Needs Unmet



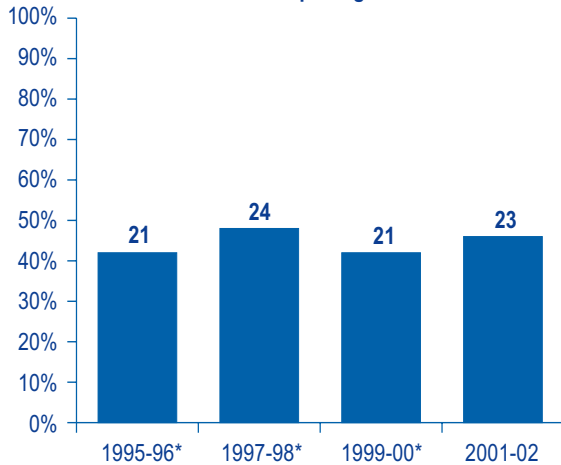
received them. The largest unmet need was for information about job openings; 23 percent of WIA Title I-B adults required, but did not receive, this information, or what was received did not meet their needs. This is not a new issue. Many JTPA participants reported an unmet need for job opening information in previous evaluations (see Figure 5).

Employer Satisfaction

It was not feasible to survey employers about each of the WIA Title I-B programs included in the study (Adult, Dislocated Worker, and Youth programs) separately because there were too few individuals coming out of each program for a sufficient percentage of employers in the state to have had experience employing recent participants. We asked employers instead about workers who completed any WIA Title I-B program.

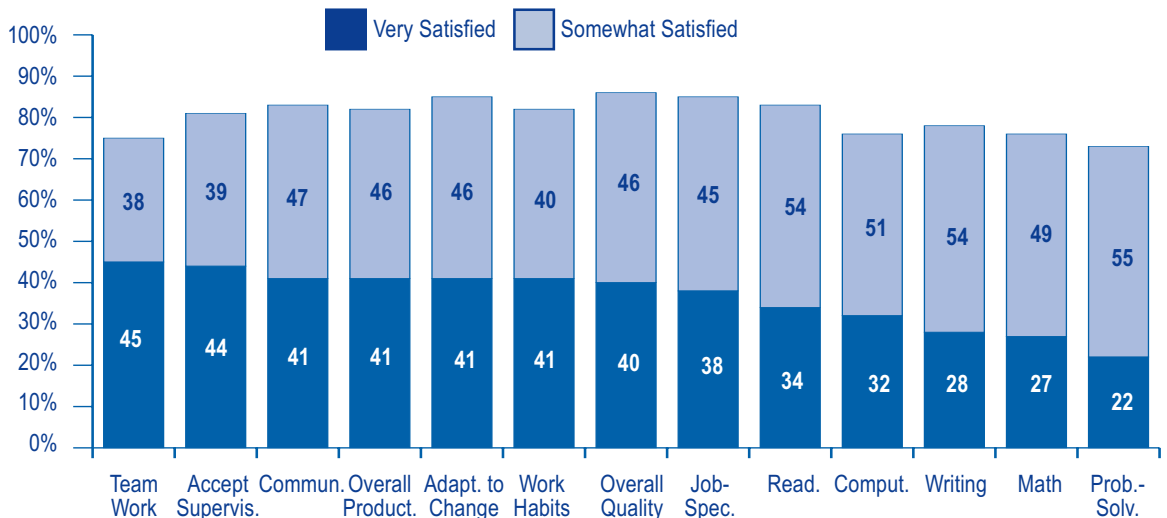
Overall, the results indicate the majority of employers were satisfied with the quality and productivity of these workers. Eighty-six percent of employers said they were either somewhat or very satisfied with the overall quality of work of these new employees, and eighty-seven percent were satisfied with the workers' overall productivity (see Figure 6).

FIGURE 5
Percentage of WIA Title I-B Adults Who Reported an Unmet Need for Job Opening Information



*Figures from 1995 through 2000 are for the JTPA II-A Adult Program.

FIGURE 6
Percentage of Employers Satisfied With New Employees Who Had Recently Completed a WIA Program



With regard to their being “very satisfied,” employers tended to be more satisfied with general workplace skills (e.g., team work and ability to accept supervision) and less satisfied with job-specific skills. The lowest levels of reported satisfaction were with computer, writing, math and problem-solving skills.

Employment and Earnings

Eighty-one percent of the 2001-02 WIA Title I-B Adult participants reported being employed during the period six to nine months after the program (see Figure 7). To find out more about the former students’ postprogram employment and earnings, we matched student records with ESD wage files from Washington and neighboring states. We also included federal and military employment records. These files contain information only on those individuals with employment reported for Unemployment Insurance purposes (UI) (85 to 90 percent of the total employment in state with self-employment being the largest type of employment not covered).

Sixty-six percent had employment reported in ESD wage files during the third quarter after leaving the program. Their median wage was \$10.35 per hour; one fourth earned less than \$8.45 an hour. Median annualized earnings were \$16,937. The typical (median) participant had sufficient earnings to support a household of 3.5 persons above the poverty level. According to the survey responses, 59 percent of those employed during the third quarter after exit had health benefits provided by their employer, and 34 percent received pension benefits.

WIA Title I-B replaced JTPA on July 1, 2000, and the results through program year 1999-00 in Figure 8 are for JTPA. The labor market outcomes for participants leaving WIA Title I-B compare favorably to the previous JTPA results. Labor market conditions were weaker for those leaving WIA Title I-B during 2001-02 than for those leaving JTPA in 1999-00. Despite the economic downturn, the employment rate for the WIA Title I-B participants did not decline and earnings increased. This was

FIGURE 7

Employment and Earnings of WIA Title I-B Adult Participants in the Third Quarter After Leaving Program

	1995-96*	1997-98*	1999-00*	2001-02
Percentage self-reporting employment during third quarter after leaving program	81	79	83	81
Percentage with employment reported by employers to ESD the third quarter after leaving program	61	71	67	66
Median quarterly hours worked, of those working	397	429	424	430
Percentage employed full-time of those working (averaging 30 or more hours/week)	51	54	53	57
Median annualized earnings of those working	\$13,016	\$15,828	\$16,017	\$16,937
Size of household in which median earnings would support at poverty level	2.3	3.2	3.2	3.5
Size of household in which median earnings would support at twice poverty level	0.7	0.9	0.9	0.9
Median hourly wage of those working	\$8.52	\$9.54	\$10.03	\$10.35
Percentage receiving medical benefits from employment (self-reported)	51	53	65	59
Percentage receiving pension benefits from employment (self-reported)	23	29	31	34

*Notes: Earnings and wages are expressed in first quarter 2003 dollars. Poverty levels are based on federal poverty guidelines identified by the Department of Health and Human Services for 2003. *Figures from 1995 through 2000 are for the JTPA II-A Adult Program.*

due, at least in part, to changes in participant characteristics. The WIA Title I-B participants, because of changes in program eligibility criteria and welfare reform, tended to have more labor market experience and higher preprogram earnings than did the earlier JTPA participants. Statistical models developed by the Workforce Training and Education Coordinating Board (Workforce Board) suggest changes in economic conditions and participant characteristics acted to offset each other with regard to their impacts on postprogram employment and earnings.⁷

⁷The Workforce Board developed regression models that examine how economic conditions (unemployment rates, average earnings in trade sector) and participant characteristics (age, gender, race, ethnicity, prior education, disability status, preprogram employment, and earnings) affect employment and earnings outcomes in WIA Title I-B programs.

Postprogram employment among WIA Title I-B Adult participants is concentrated in retail trade and services (see Figure 8).

Earnings varied by gender, race, and ethnicity. Among former participants employed during the third quarter after leaving the program, the hourly wage rate for women was 87 percent that of men. The wage differentials by race and ethnicity were more modest. Hispanics had the lowest median wage (6 percent less than whites).

Outcomes also varied by disability status. Administrative records suggest 19 percent of the WIA Title I-B participants included in this study had a disability. These participants were less likely to have employment reported to ESD (55 versus 68 percent), and their median earnings were 92 percent that of those without a disability.

Net Impacts

Every four years the Workforce Board conducts net impact and cost-benefit analyses of workforce development programs. The last net impact study, which was conducted in 2002 by the W.E. Upjohn Institute for Employment Research, examined the experience of participants who left JTPA programs during the 1999-00 and 1997-98 program years. The analysis attempts to estimate what happens to these participants as compared to what would have happened if they did not enroll in the program. The study found JTPA increased earnings among disadvantaged adults, especially in the longer term, by increasing employment, hours worked, and hourly wages.

FIGURE 8
Industry of Employment of WIA Title I-B Adults
in the Third Quarter After Leaving Program

Industry Group	Employment
Agriculture, Forestry, Fishing	1.8%
Construction	4.5%
Manufacturing	9.0%
Transportation, Communication, Utilities	8.2%
Wholesale Trade	4.2%
Retail Trade	16.0%
Department Stores	2.7%
Grocery Stores	1.7%
Eating and Drinking Places	4.6%
Other Retail	7.0%
Finance, Insurance, Real Estate	5.4%
Services	46.3%
Hotels and Lodging	1.9%
Temporary Help Supply	3.5%
Health Services	14.2%
Education Services	3.7%
Social Services	7.1%
Private Households	2.6%
Other Services	13.3%
Public Administration	4.7%
TOTAL	100.0%

The Workforce Board will not update this study until 2006. In the meantime, Washington State and Upjohn have continued this research as participants in the seven-state Administrative Data and Evaluation (ADARE) project funded by the U.S. Department of Labor. Early results for WIA Title I-B participants from 2000-01 suggest the net impacts on employment and earnings continue under WIA Title I-B. Employment rates for the 2000-01 WIA Title I-B exiters in Washington State were 6.3 percentage points higher for adults than for similar workers without WIA Title I-B intensive or training services. Quarterly earnings increased by \$764 for adults.

Results of the 2002 JTPA Study

The 2002 JTPA study results were presented in the last edition of *Workforce Training Results*, and these results are reproduced here for your information.

The objective of the analysis is to determine the short-term and long-term impacts of program participation on employment, wages, hours worked, quarterly earnings, and receipt of UI benefits and public assistance. In order to estimate these impacts, individuals who participated in the JTPA Adult program were compared to individuals who had similar characteristics, but who didn't participate in it. The comparison group members were selected from registrants to the state's employment service. Short-term net impacts were derived by examining outcomes for individuals who exited the programs (or from the employment service) in fiscal year 1999-00 and long-term impacts for individuals who exited in fiscal year 1997-98.

The program increased earnings among disadvantaged adults, especially in the longer term, by increasing employment, hours worked, and hourly wages.

Figure 9 shows the short-term net impacts of the JTPA Adult program. During the third quarter after the 1999-00 participants left the program, there was a positive net impact on employment. Among those with reported employment, however, the impacts on wage rates and hours worked were not statistically significant, and there were positive short-term impacts on social welfare receipt.

The short-term impacts were stronger for those leaving the program during 1997-98. The positive impacts on employment, hours worked, and earnings were larger and statistically significant. Moreover, program participation reduced short-term reliance on public assistance.

FIGURE 9
Short-Term Net Impact Results for JTPA Adults Who Left the Program During Program Years 1999-00 or 1997-98

	1999-00 Exiters	1997-98 Exiters
Employment: percentage in reported employment	3.6	10.9
Mean Hourly Wage: of those working	-\$0.02*	\$0.65*
Mean Hours Worked: per quarter for those working	7.6*	23.0
Mean Quarterly Earnings: of those working	\$105*	\$393
Temporary Assistance to Needy Families (TANF): percentage receiving aid	4.6	-12.6
Food Stamps: percentage receiving	8.0	-10.0
Medical Benefits: percentage receiving	9.3	-8.4

Short-term refers to impacts observed in the third quarter after leaving the program.

* Not statistically significant at the 0.10 level.

The long-term net impacts are also stronger (see Figure 10). These are the impacts observed 8 to 11 quarters after participants left the colleges during the 1997-98 program year. Program participation is associated with a 7.4 percentage point increase in employment. The program also has positive long-term impacts on hourly wages, hours worked, and earnings. Program participation was found to reduce receipt of social welfare benefits in the longer term.

JTPA offered participants a variety of services, and not all participants received training. The participants who received training⁸ at community and technical colleges experienced even more positive wage and earnings outcomes (see Figure 10).

⁸This includes job preparatory training, worker retraining, and work-related basic skills training.

Benefits and Costs

The cost-benefit analysis estimates the value of the net impact on earnings, employee benefits (estimated at 20 percent of earnings), social welfare benefits, UI benefits, and certain taxes.⁹ Program costs include both direct program costs and support payments borne by the state, as well as the foregone earnings borne by program participants. Benefits and costs are calculated for the observed period of time and are forecast out to the age of 65 based on a statistical model. In order to compare benefits and costs in terms of net present values, postprogram benefits and costs are discounted by 3 percent per year and all figures are stated in 2001 dollars. The benefits and costs presented here are based on impacts estimated for participants leaving programs in 1997-98, because a longer-term follow-up is required for this analysis.

Lifetime earnings among participants were substantially enhanced. Projected participant benefits to age 65 far outweigh public costs

For each participant in JTPA, the public (taxpayer) cost is \$3,384 over the length of their enrollment, and the participant cost is \$360 in foregone earnings while enrolled

⁹Upjohn estimated the impact of the net change in earnings on social security, Medicare, federal income, and state sales taxes.

FIGURE 10
Long-Term Net Impact Results for JTPA Adults Who Left the Program During 1997-98

	All Participants	Participants Trained at Community & Technical Colleges
Employment: percentage in reported employment	7.4	6.1
Mean Hourly Wage: of those working	\$0.57	\$1.03
Mean Hours Worked: per quarter for those working	23.9	23.0*
Mean Quarterly Earnings: of those working	\$543	\$606
TANF: percentage receiving aid	-6.7	-9.4
Food Stamps: percentage receiving	-5.6	-8.0
Medical Benefits: percentage receiving	-10.5	-8.4
UI: percentage receiving	4.7	6.9

Long-term refers to impacts observed 8 to 11 quarters after leaving the program.

* Not statistically significant at the 0.10 level.

(see Figure 11). During the first two-and-a-half years after leaving the program, the average participant will gain \$3,773 in earnings. During the working life to age 65, they will gain about \$61,000 in net earnings (earnings minus foregone earnings) and over \$12,000 in employee benefits. These are net gains compared to the earnings of similar individuals who did not receive the training. The ratio of participant benefits to program costs, not considering impacts on social welfare benefits or taxes, is \$73,518 to \$3,384, or 20 to 1.

The total public (taxpayer) costs are less than the program costs because the training is associated with decreased state welfare expenditures and increased tax revenues. From the time of leaving the program to age 65, the public is forecast to save almost \$6,000 in welfare and UI costs for each participant. Moreover, the public is expected to gain over \$15,000 per participant in additional social security, Medicare, federal income, and state sales taxes.

Areas for Improvement

The evaluation found areas of strength in WIA Title I-B Adult programs. Participants were generally satisfied with the program. Labor market outcomes for adults leaving WIA Title I-B during 2001-02 compared favorably to those for JTPA Adult participants in 1999-00. Postprogram employment rates were similar and earnings were higher for the WIA Title I-B Adult participants despite the economic downturn. The stronger outcomes under WIA Title I-B, however, are in part due to differences in participant characteristics.

The evaluation also suggests areas for improvement. While most participants were satisfied with the services they received, many reported an unmet need for information on job openings. This is not a new issue; it also existed under JTPA.

Although earnings did increase from those reported two years ago, still more could be done to prepare participants for higher wage jobs. Survey results suggest the proportion of WIA Title I-B Adults receiving job-specific skills training in 2001-02 was lower than during the last year

FIGURE 11

Benefits and Costs for JTPA for Adults

	First 2.5 Years After Program		Forecast to Age 65	
	Participant	Public	Participant	Public
Earnings	\$3,773		\$61,565	
Employee Benefits	\$755		\$12,313	
Taxes	-\$949	\$949	-\$15,484	\$15,484
UI Benefits	\$486	-\$486	-\$400	\$400
TANF Benefits*	-\$2,292	\$2,292	-\$425	\$425
Food Stamp Benefits	-\$413	\$413	-\$902	\$902
Medical Benefits	-\$1,180	\$1,180	-\$4,239	\$4,239
Foregone Earnings	-\$360		-\$360	
Program Costs		-\$3,384		-\$3,384
TOTAL	-\$180	\$964	\$52,068	\$18,066

*TANF benefits reflect the value of cash grants, child care, and other client support services.

of JTPA. This evaluation of WIA Title I-B and earlier net impact analysis of JTPA indicate community and technical college training increases earnings among disadvantaged adults. More should receive such training.

More attention should also be given to basic skills instruction in reading, writing, and math. Among the adults leaving WIA

Title I-B during 2001-02, only about one fifth said they received training in writing and math, and eleven percent in reading skills. Relatively few of these participants reported their skills in these areas improved substantially. As noted in prior evaluations, basic skills instruction is most effective when integrated with work and job skills training.

Division of Vocational Rehabilitation

The Division of Vocational Rehabilitation (DVR) offers services to assist individuals with disabilities enter careers of their choice. The primary objective is competitive employment. This may include full-time or part-time employment, self-employment, and supported employment. Services are based on the unique needs of each individual and include, but are not limited to, assessment, counseling, vocational, academic, and other training services, physical and mental restoration services, assistive technology, independent living services, mobility and transportation, communication services, and job search and placement.

Eligibility requires certification by a DVR counselor that the individual:

- Has a physical, mental, or sensory impairment that constitutes or results in a substantial impediment to employment.
- Can benefit in terms of an employment outcome from the provision of vocational rehabilitation services.
- Requires vocational rehabilitation services to prepare for, enter into, engage in, or retain employment.

These strict eligibility requirements should be considered when reviewing the outcomes of former DVR participants. DVR customers have a wide range of disabilities. According to DVR's 2002-03 Annual Report, 36 percent were people with cognitive disabilities, 26 percent with

orthopedic/neurological disabilities, 21 percent with a mental illness, 10 percent with hearing or visual impairments, and 7 percent with other disabilities.¹

This study includes information from administrative records for 2,530 customers who left DVR programs during the 2001-02 program year. Forty-nine percent of these participants were classified as rehabilitated upon leaving the program (i.e., they were working for 90 days prior to exit). This rehabilitation rate is considerably lower than the 69 percent reported two years ago.

Significant programmatic changes need to be considered when comparing outcomes for DVR customers over time. The most important of these is entering an Order of Selection in November 2000, due to insufficient staff and fiscal resources.

While in an Order of Selection, federal regulations require that those with the most significant disabilities be served first. As a result, DVR customers leaving the program during 2001-02 were those facing the greatest challenges to work, required a larger investment of resources and, on average, took longer to enter the workforce than did those in earlier cohorts.²

¹These disabilities refer to the clients who were rehabilitated in 2001. DVR, 2002-2003 Annual Report.

²Among recent clients who were successfully employed, for example, over 99 percent were individuals with significant and most significant disabilities. DVR, 2002-03 Annual Report.

This study also collected information from Employment Security Department (ESD) wage files from Washington, Idaho, Montana, Alaska, and Oregon. Federal and military employment records were also included. In addition, 422 former customers completed a telephone survey, providing more detailed data on their employment and satisfaction with the program.

The median length of program enrollment among those leaving DVR programs in 2001-02 was 21 months.

Participant Characteristics

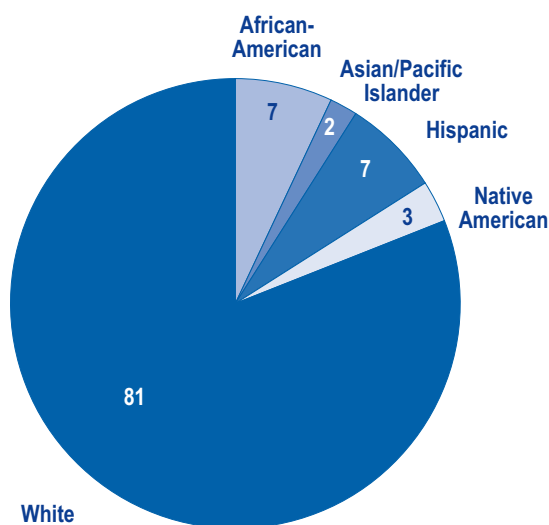
The racial and ethnic composition of the 2001-02 customers roughly reflects that of the general population (see Figure 1). About one in five were people of color, as is the case with all Washington residents.³ Forty-seven percent were women. The median age upon entering the program was 37; one quarter were age 45 or older. Fifteen percent lacked a high school diploma or GED.

Competency Gains

Based on survey results, most DVR customers enrolled in the program to learn skills for a new job (81 percent) and job search assistance (71 percent).⁴ Just over half of the customers cited getting on-the-job training and gaining more self-confidence with basic skills as reasons for enrolling. One third enrolled to get equipment and medical services needed because of their disability.

The survey suggests 46 percent received job-specific training, and 27 percent received training to adapt previous job skills to their disability (see Figure 2). Note: DVR offers other work-related services in addition to training. For example, some customers receive physical and mental restoration services, assistive technology, and communication services. Twenty to twenty-seven percent received training in general workplace skills such as problem-solving or work habits.

FIGURE 1
Percentage of DVR Clients by Race and Ethnicity



³Seventy-nine percent of Washington residents, according to the 2000 Census, are non-Hispanic whites. Hispanics now comprise 7.5 percent of the state's population. Racial composition figures depend upon how multiracial residents are counted. Including those who report more than one race, about 4 percent of our residents are African-American, nearly 3 percent are Native American, and just over 7 percent are Asian/Pacific Islander. Among those reporting only one race, 3 percent are African-American, less than 2 percent are Native American, and 6 percent Asian/Pacific Islander.

⁴Note that respondents could select more than one reason for enrolling in the program.

Almost all customers who received a particular type of training reported at least some improvement in their skills (see Figure 3). The majority (60 percent) who received job-specific training for a new job reported these skills improved a lot. The lower proportion (47 percent) reporting substantial improvement in adapting previous job skills to their disability reflects the difficulty encountered in doing so. Still, this is a considerably higher than the 34 percent reporting substantial improvement in this area two years ago.

Participant Satisfaction

Sixty-nine percent of former customers said they were very or somewhat satisfied with their DVR program. Respondents reported relatively high levels of satisfaction with the location and times services were provided, the facilities, and opportunities to interact with staff. Satisfaction was lower with respect to advice on choosing services and usefulness of the program to their careers.

FIGURE 2

Percentage of DVR Clients Receiving Various Skills Training

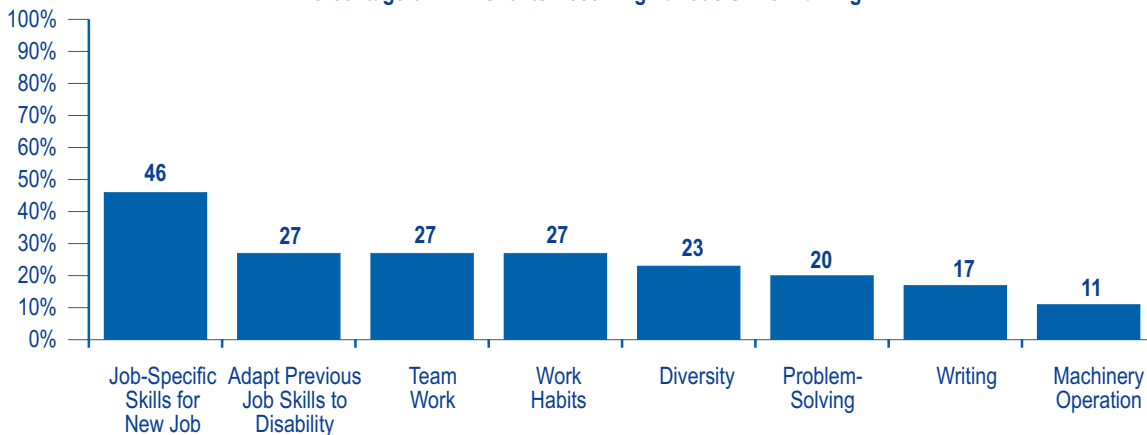


FIGURE 3

Percentage of DVR Clients Receiving Various Skills Training Who Reported Their Skills Improved a Little or a Lot

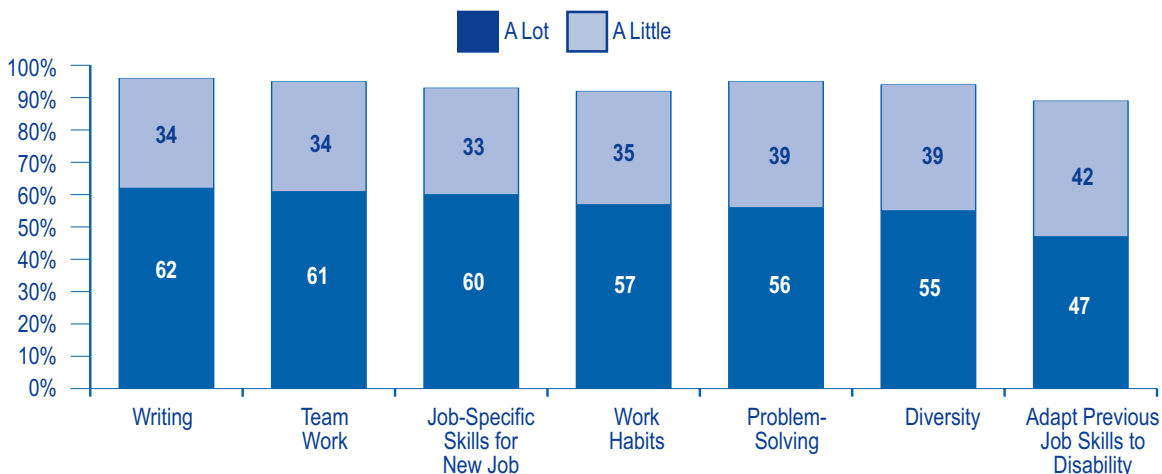


Figure 4 lists the support services that customers most frequently said they needed. According to survey results, most customers responded they needed job counseling (65 percent), information about job openings (64 percent), vocational training (55 percent), and financial assistance (55 percent). As is the case in several other programs, participants report a substantial unmet need for job counseling services and information about job openings. Unmet need refers to the percentage of customers who said they

needed a service, but either did not receive it, or what was received did not meet their needs. Almost one third of the former customers report an unmet need for vocational training.

Figure 5 lists other support services, unique to DVR programs, which many customers said they needed. Thirty-three percent said they needed paid work where a job coach or other support person works alongside or visits regularly. Thirty percent needed help keeping a job, and twenty-nine percent needed help

FIGURE 4

DVR Clients Needing a Service and Percentages Leaving With Needs Unmet

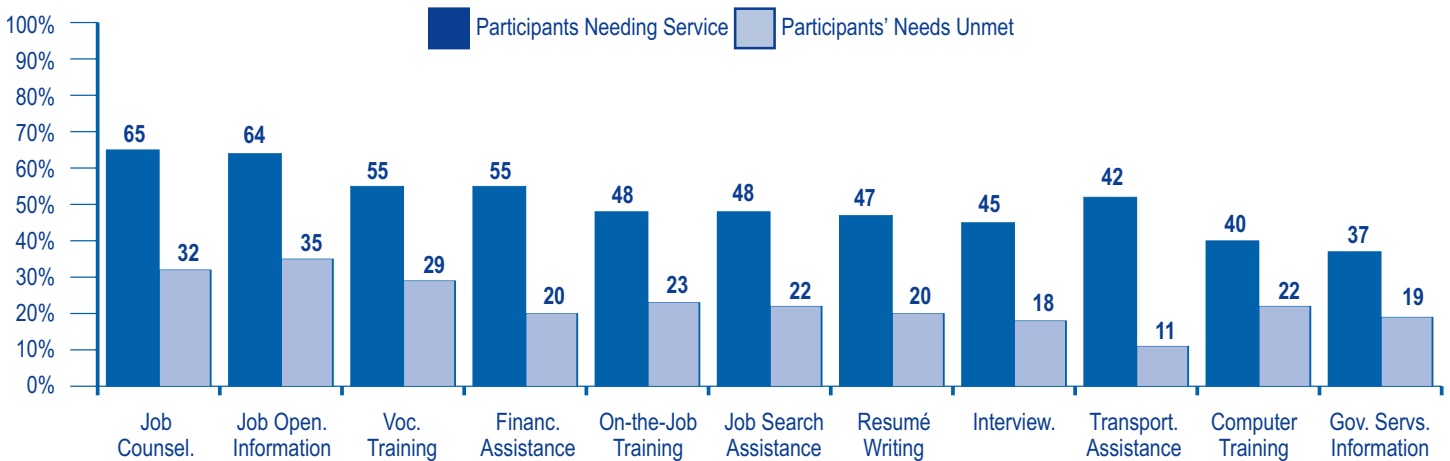
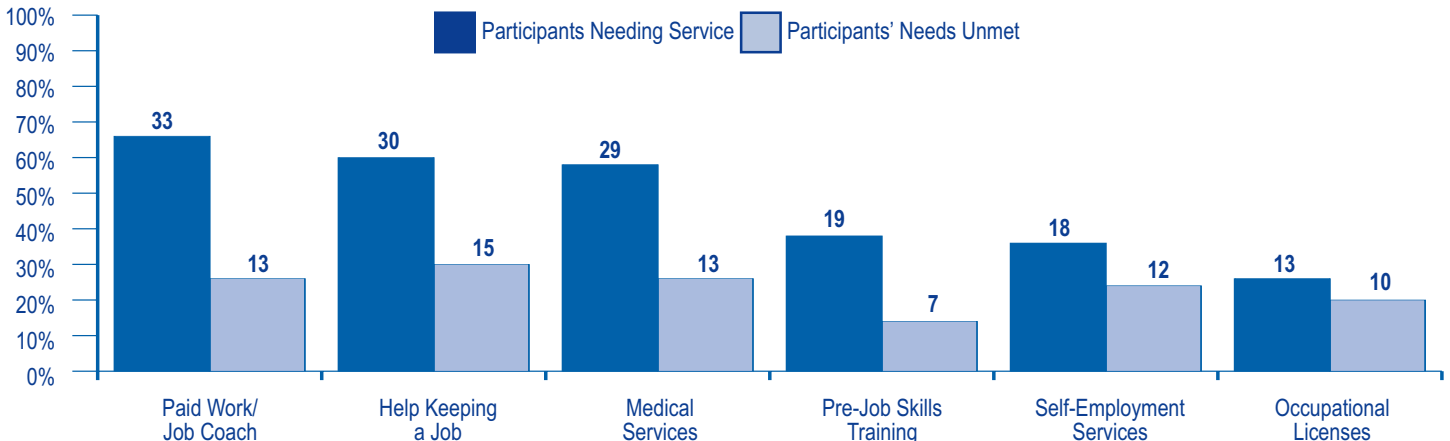


FIGURE 5

DVR Clients Needing a Service and Percentages Leaving With Needs Unmet



required medical services. Pre-Job Skills training, required by 19 percent of customers, refers to training in basic workplace skills such as getting to work on time or following directions.

Employment and Earnings

According to the survey responses, 52 percent of the 2001-02 customers were employed during the period six to nine months after leaving their program. To find out more about the former customers postprogram employment and earnings, we matched records with ESD wage files from Washington and neighboring states. These files contain information only on those individuals with employment reported for Unemployment Insurance (UI) purposes (85 to 90 percent of the total employment in state, with self-employment being the largest type of employment not covered).

Forty-six percent of all 2001-02 customers had employment reported in ESD wage files during the third quarter after leaving the program (see Figure 6). Among those who were considered rehabilitated upon leaving the program (i.e., those who had been working for 90 days), 72 percent had reported employment the third quarter after exit. Again, note that ESD wage files do not capture some types of employment.

The overall percentage with reported employment (46 percent) is considerably lower than was reported two years ago (57 percent). DVR was in an Order of Selection mode during this period. The customers leaving the program during 2001-02 were those facing the greatest challenges to work, required a larger investment of resources

FIGURE 6

Employment and Earnings of DVR Clients in the Third Quarter After Leaving Program

	1997-98		1999-00		2001-02	
	All	Rehabilitated	All	Rehabilitated	All	Rehabilitated
Percentage self-reporting employment during third quarter after leaving program			60		52	
Percentage with employment reported by employers to ESD the third quarter after leaving program	56	72	57	71	46	72
Median quarterly hours worked, of those working	381	400	377	397	310	346
Percentage employed full-time of those working (averaging 30 or more hours/week)	49	51	48	51	43	46
Median annualized earnings of those working	\$12,841	\$13,754	\$13,543	\$14,169	\$12,446	\$13,882
Size of household in which median earnings would support at poverty level	2.2	2.5	2.5	2.7	2.1	2.6
Size of household in which median earnings would support at twice poverty level	0.7	0.8	0.8	0.8	0.7	0.8
Median hourly wage of those working	\$8.89	\$9.03	\$9.46	\$9.54	\$9.91	\$10.12
Percentage receiving medical benefits from employment (self-reported)			40		44	
Percentage receiving pension benefits from employment (self-reported)			22		25	

Notes: Earnings and wages are expressed in first quarter 2003 dollars. Poverty levels are based on federal poverty guidelines identified by the Department of Health and Human Services for 2003.

and, on average, took longer to enter the workforce than did those in earlier cohorts.⁵

The business cycle also contributed to the decline in postprogram employment among DVR customers leaving programs during the 1999-00 and 2001-02 school years. The more recent cohort faced a much weaker labor market.

Among former customers who were working during the third postprogram quarter, the median hourly wage was \$9.91. Forty-three percent worked full-time and median annualized earnings were \$12,446, about eight percent lower than was observed for

those leaving the program two years earlier. The typical (median) participant had sufficient earnings to support a household of 2.1 persons above the poverty level.

According to survey responses, 44 percent of those employed during the third quarter after exit had health benefits provided by their employer, and 25 percent received pension benefits. The survey also found 33 percent of former customers had Supplemental Security Income (SSI) and 35 percent received Social Security Disability Income (SSDI) during the 12 months prior to the survey; about one half of former customers received either SSI or SSDI.

Employment among former DVR customers is heavily concentrated in retail trade (department stores, grocery stores, eating establishments) and services such as temporary help supply, education, and social services (see Figure 8).

Gender differences in postprogram employment and earnings are not significant. The variation in labor market outcomes by race and ethnicity is less substantial among DVR customers than participants in many other programs. There are, however, some significant differences. Employment rates are significantly lower for African-American customers (36 percent) than for whites (45 percent). Median annual earnings are also lower for African-Americans (\$7,811) and Asian/Pacific Islanders (\$10,082) than for whites (\$12,839).

⁵Among recent clients who were successfully employed, for example, over 99 percent were individuals with significant and most significant disabilities. DVR, 2002-03 Annual Report.

FIGURE 7
Percentage of DVR Clients With Employment Reported to ESD Six to Nine Months After Leaving Program

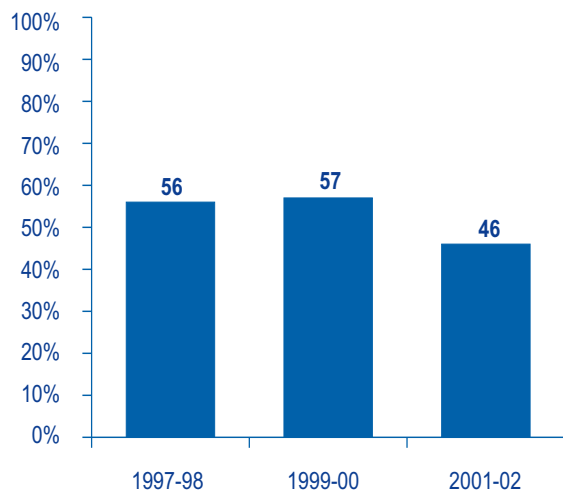


FIGURE 8
Industry of Employment of DVR Clients in the
Third Quarter After Leaving Program

Industry Group	Employment
Agriculture, Forestry, Fishing	2%
Construction	3%
Manufacturing	5%
Transportation, Utilities	3%
Wholesale Trade	3%
Retail Trade	25%
Finance, Insurance, Real Estate	4%
Services	49%
Educational Services	6%
Social Services	12%
Temporary Help	4%
Other Services	27%
Public Administration	6%
TOTAL	100%

Areas for Improvement

When considering labor market outcomes, remember every DVR customer faces substantial impediments to employment. The proportion of individuals with the most severe disabilities has increased significantly since the division entered into an Order of Selection. As a result, the rehabilitation rate among DVR customers (49 percent) is considerably lower than we reported two years ago, and postprogram employment rates declined.

Former DVR customers expressed some concerns regarding support services. As is the case in several other programs, participants report a substantial unmet need for job counseling services and information about job openings. Almost one third of the former customers also report an unmet need for vocational training. Most DVR customers said they enrolled in the program to learn skills for a new job (81 percent) and to get job search assistance (71 percent). Yet, survey responses suggest only 46 percent received job-specific training for new jobs and 27 percent received training to adapt previous job skills to their disability.

The majority (60 percent) who did receive job-specific training for a new job reported their skills improved a lot. A lower proportion (47 percent) reported substantial improvement in adapting previous job skills, but this is considerable higher than the 34 percent reporting substantial improvement in this area two years ago.

Department of Services for the Blind

This is the first evaluation of Department of Services for the Blind (DSB) programs to be included in *Workforce Training Results*. When reviewing the results for DSB, note that in order to receive services, an individual must be legally blind or have a visual disability that causes an impediment to employment, and vocational rehabilitation services are required for the individual to prepare for, enter, engage in, or retain employment.

DSB provides vocational rehabilitation services, including information, assessment, and referral; vocational counseling, including guidance, referral, and placement; and rehabilitation training in adaptive skills, job skills, and assistive technology. Occupational licenses, tools, equipment, technological aids, and other goods and services that can be reasonably expected to help participants achieve successful employment outcomes are also provided.

The study includes information from administrative records for the 191 clients who left DSB programs during the 2001-02 program year. Sixty-three percent of these participants were classified as rehabilitated upon leaving the program (i.e., they were working for at least 90 days prior to leaving the program). The median length of program enrollment was 18 months.

This study also collected information from Employment Security Department (ESD) wage files from Washington, Idaho, Montana, Alaska, and Oregon. Federal and military employment records were also included. In addition, 133 former clients

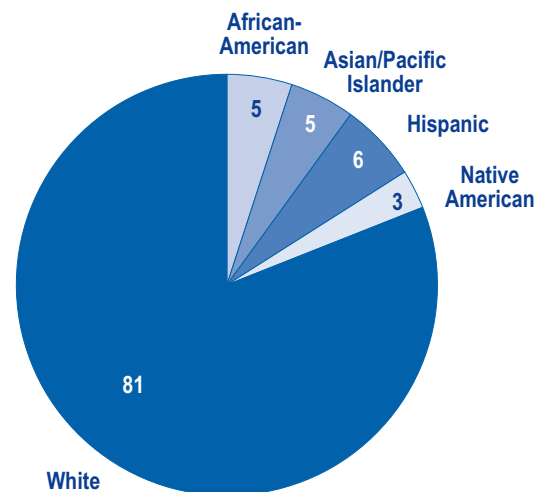
completed a telephone survey, providing more detailed data on their employment and satisfaction with the program.

Participant Characteristics

The racial and ethnic composition of the 2001-02 clients roughly reflects that of the general population (see Figure 1). About one in five were people of color, as is the case with all Washington residents.¹ Forty-five percent were women. The median age upon entering the program was 40; one quarter of the clients were over age 50.

¹Seventy-nine percent of Washington residents, according to the 2000 Census, are non-Hispanic whites. Hispanics now comprise 7.5 percent of the state's population. Racial composition figures depend upon how multiracial residents are counted. Including those who report more than one race, about 4 percent of our residents are African-American, nearly 3 percent are Native American, and just over 7 percent are Asian/Pacific Islander. Among those reporting only one race, 3 percent are African-American, less than 2 percent are Native American, and 6 percent Asian/Pacific Islander.

FIGURE 1
Percentage of DSB Participants by Race and Ethnicity



Competency Gains

Based on survey results, most DSB clients (61 percent) enrolled in the program to obtain equipment or technology needed because of their disability. About half of all clients cited learning skills for a new job and getting job search assistance as reasons for enrolling.

The survey suggests 31 percent of clients received training to adapt previous job skills to their disability, and just over 20 percent learned skills for new jobs (see Figure 2). An additional 22 percent received training in machinery or equipment operation.

Almost all clients who received a particular type of training reported at least some improvement in their skills (see Figure 3). The majority who received training in machinery or equipment operation, job-specific training for a new job, and training to adapt previous job skills to their disability reported these skills improved a lot.

Participant Satisfaction

Eighty-one percent of former clients said they were very or somewhat satisfied with their DSB program.

FIGURE 2

Percentage of DSB Program Participants Receiving Various Skills Training

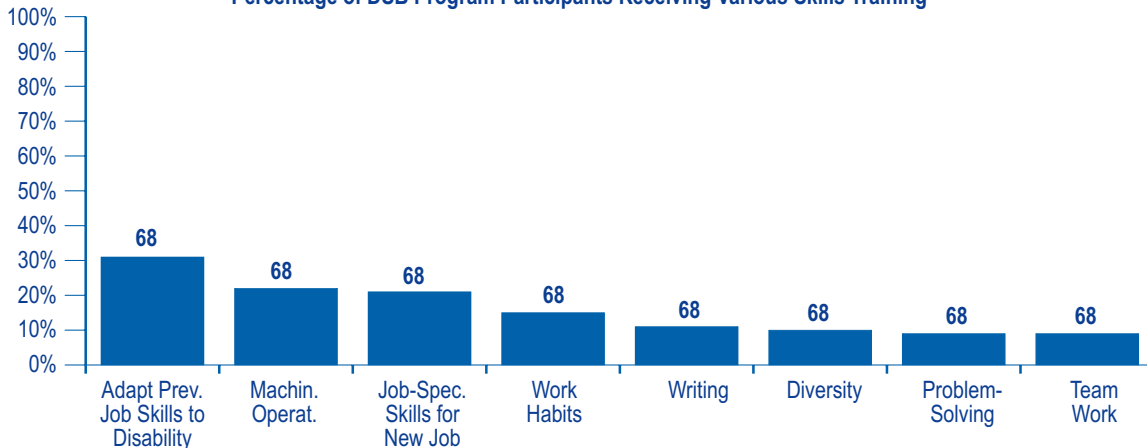


FIGURE 3

Percentage of DSB Participants Receiving Various Skills Training Who Reported Their Skills Improved a Little or a Lot

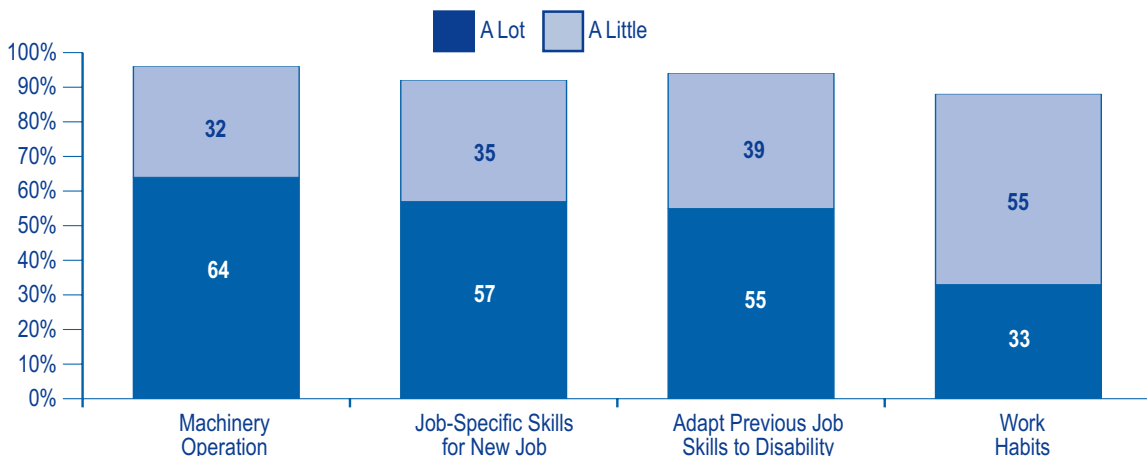


Figure 4 lists the support services clients most frequently said they needed. According to survey results, many clients responded they needed computer training (54 percent), information about job openings (42 percent), information about government services (42 percent), job counseling (38 percent), and transportation assistance (37 percent). As is the case in several other programs, participants report a substantial unmet need for information about job

openings. Unmet need refers to the percentage of clients who said they needed a service but either did not receive it, or what was received did not meet their needs. About a fifth of the former clients also report an unmet need for computer training.

Figure 5 lists other support services, unique to DSB programs, which many clients said they needed. Twenty-seven percent of clients reported needing help keeping a job.

FIGURE 4

DSB Program Participants Needing a Service and Percentages Leaving With Needs Unmet

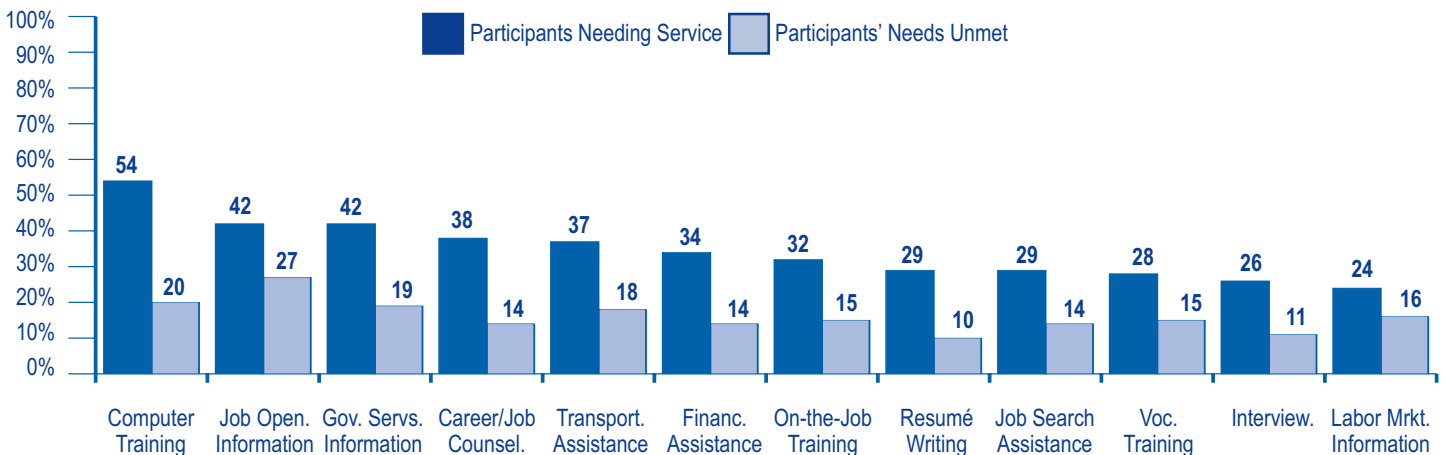
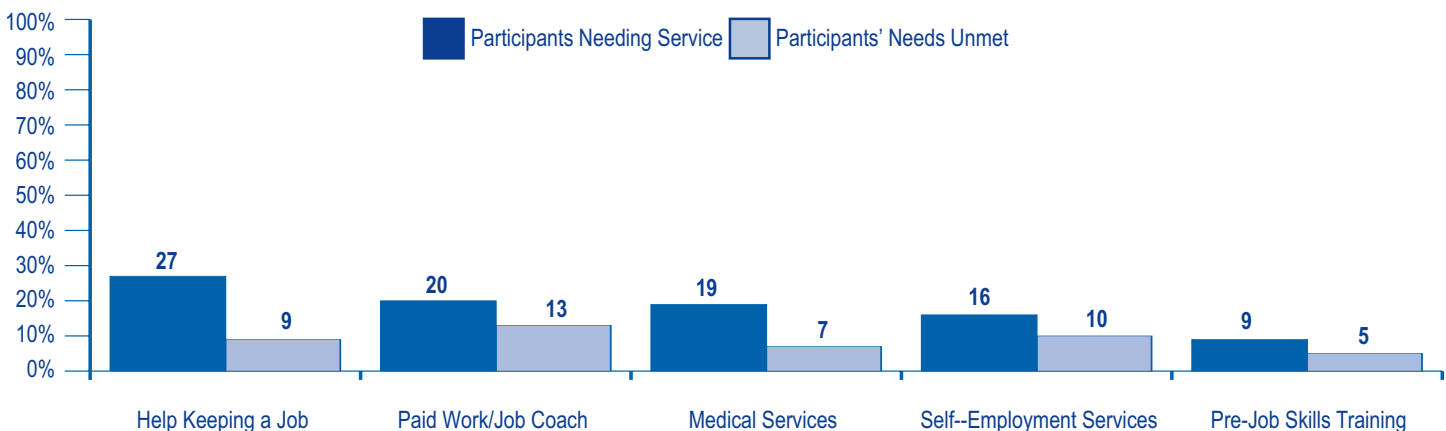


FIGURE 5

DSB Program Participants Needing Additional Support Services and Percentages Leaving With Needs Unmet



Many clients also needed medical services (19 percent), and paid work (20 percent) where a job coach or other support person works alongside or visits regularly. Over half of those who required paid work with a job coach did not have their needs met. Pre-Job Skills training, required by 9 percent of clients, refers to training in basic workplace skills such as getting to work on time or following directions.

Employment and Earnings

According to the survey responses, 70 percent of the 2001-02 clients were employed during the period six to nine months after leaving their program. To find out more about the former clients' postprogram employment and earnings, we matched records with ESD wage files from Washington and neighboring states. These files contain information only on those individuals with employment reported for Unemployment Insurance (UI) purposes (85 to 90 percent of the total employment in state, with self-employment being the largest type of employment not covered).

Forty-one percent of all former clients had employment reported in ESD wage files during the third quarter after leaving the program (see Figure 6). Among those who were considered rehabilitated upon leaving the program (i.e., those who had been working for 90 days prior to exit), 62 percent had reported employment the third quarter after exit. Again, please note ESD wage files do not capture some types of employment.

Among former clients who were working during the third postprogram quarter, the median hourly wage was \$13.55;

25 percent of the participants earned less than \$9.08 an hour, and another 25 percent earned more than \$25.61. Sixty-one percent worked full-time and median annualized earnings were \$20,006. The typical (median) participant had sufficient earnings to support a household of 4.5 persons above the poverty level.

FIGURE 6
Employment and Earnings of DSB Participants
in the Third Quarter After Leaving Program

	2001-02	
	All	Rehabilitated
Percentage self-reporting employment during third quarter after leaving program	70	
Percentage with employment reported by employers to ESD the third quarter after leaving program	41	62
Median quarterly hours worked, of those working	430	430
Percentage employed full-time of those working (averaging 30 or more hours/week)	61	61
Median annualized earnings of those working	\$20,006	\$20,534
Size of household in which median earnings would support at poverty level	4.5	4.7
Size of household in which median earnings would support at twice poverty level	1.3	1.4
Median hourly wage of those working	\$13.55	\$13.93
Percentage receiving medical benefits from employment (self-reported)	62	
Percentage receiving pension benefits from employment (self-reported)	46	

Notes: Earnings and wages are expressed in first quarter 2003 dollars. Poverty levels are based on federal poverty guidelines identified by the Department of Health and Human Services for 2003.

Survey responses suggest 62 percent of those employed during the third quarter after exit had health benefits provided by their employer, and 46 percent had pension benefits. According to program administrative records, 29 percent of clients received Social Security Income at the start of the program; 21 percent received it at the end of the program. Sixteen percent received Social Security Disability Income at the start of the program and ten percent at the end.

Employment among former DSB clients is heavily concentrated in services, primarily social services and education (see Figure 7).

FIGURE 7
Industry of Employment Among Former DSB Clients

Industry Sector	Employment
Manufacturing	13%
Retail Trade	15%
Finance, Insurance, Real Estate	6%
Services	49%
Educational Services	13%
Social Services	19%
Temporary Help	4%
Other Services	13%
Public Administration	9%
Other	8%
TOTAL	100%

Given the relatively small number of clients leaving the program each year, we do not have sufficient data to examine differences in labor market outcomes by race, ethnicity, and gender.

Areas for Improvement

Only 41 percent of former clients had employment reported in ESD wage files during the third quarter after leaving the program. Considering their labor market outcomes, however, remember that DSB clients face substantial impediments to employment.

The majority of DSB clients who received specific training for a new job and/or training to adapt previous job skills to their disability reported these skills improved a lot. Former clients expressed some concerns, however, regarding support services. As was the case in other programs, participants report substantial unmet need for information about job openings. About a fifth of the former clients also report an unmet need for computer training.

Secondary Career and Technical Education

Secondary career and technical education (CTE) serves high school age youth in approximately 238 school districts and 10 vocational skills centers throughout the state. Its mission is to prepare students for successful roles in families, careers, and communities. Programs are designed to develop the skills, understanding, and attitudes needed by workers in their occupations. Instructional programs organized within career pathways include agriculture, family and consumer sciences, trade and industry, marketing education, business education, diversified occupations, technology education, cosmetology, health education, and others.

Because of data limitations, we limited our evaluation of this program to students who are identified by their school districts as vocational completers (districts define a vocational completer as someone who completed a vocational sequence, whether or not the student earns a diploma).¹ This strategy is different than the other programs included in the study, which were not limited to completers only.

For this study, the Office of Superintendent of Public Instruction (OSPI) provided information on 11,545 students who completed secondary CTE during the 2001-02 school year.² Demographic and course data were obtained from student records, and we secured employment-related information from matches with

Employment Security Department (ESD) wage records from Washington, Idaho, Montana, Alaska, and Oregon. Federal and military employment records were also included. We analyzed enrollment data from Washington community and technical colleges, public four-year institutions, and private career schools to examine the extent to which CTE students continued their education. In addition, 1,824 former students completed a telephone survey during the fall of 2003, providing additional information on their employment and satisfaction with the program. Survey responses were also collected from 337 firms that hired recent graduates from CTE programs.

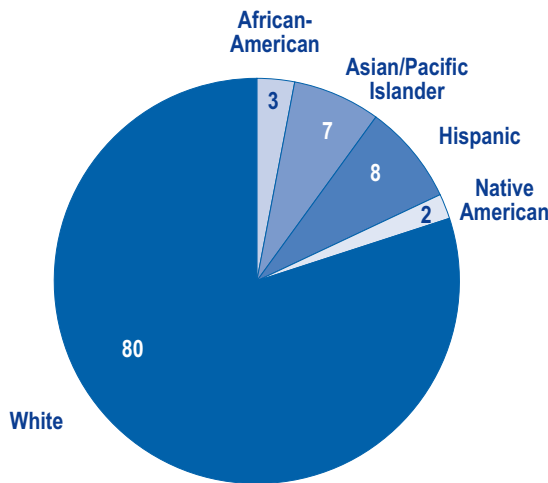
¹The state defines a student who completes 360 hours of sequenced vocational classes as a vocational completer. The designation of who is a completer, however, does vary across some school districts. Smaller schools with fewer resources, for example, will offer the most complete sequence they can, but it may be fewer than 360 hours. These schools may still consider the students who finish the sequence to be completers.

²Demographic data were provided on 16,786 vocational completers; 11,545 of these students provided identifiers that OSPI could use to match with administrative record data on employment and enrollment in further education.

Participant Characteristics

CTE students reflect the racial and ethnic makeup of the general state population (see Figure 1).³ Twenty percent of the students included in this study were people of color, and forty-six percent were female.

FIGURE 1
Percentage of Secondary CTE Students by Race and Ethnicity

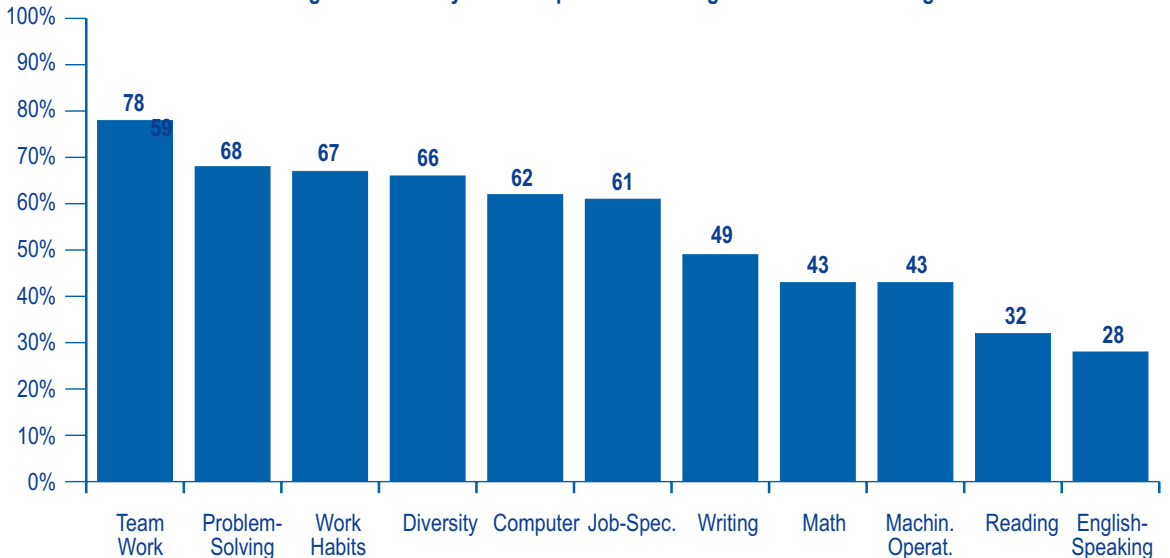


Competency Gains

According to the survey, 60 percent of students enrolled in secondary CTE to gain skills for a job, and about this same percentage reported receiving job-specific training. The majority of students also said they received training in team work, problem-solving, work habits, diversity, and computer skills as part of their education (see Figure 2). Fewer reported receiving instruction in writing, math, and reading skills.

³Seventy-nine percent of Washington residents, according to the 2000 Census, are non-Hispanic whites. Hispanics now comprise 7.5 percent of the state’s population. The racial composition figures depend upon how multiracial residents are counted. If those reporting more than one race are included, about 4 percent of our residents are African-American, nearly 3 percent are Native American, and just over 7 percent are Asian/Pacific Islander. Among those reporting only one race, 3 percent are African-American, under 2 percent are Native American, and 6 percent Asian/Pacific Islander.

FIGURE 2
Percentage of Secondary CTE Completers Receiving Various Skills Training



Most students said their skills in all categories improved at least a little. However, the percentage who said their skills improved a lot varied across the categories (see Figure 3). A majority of participants reported substantial improvement in machinery operation, job-specific, and computer software skills.⁴ Fewer than one third reported substantial improvement in math or reading skills.

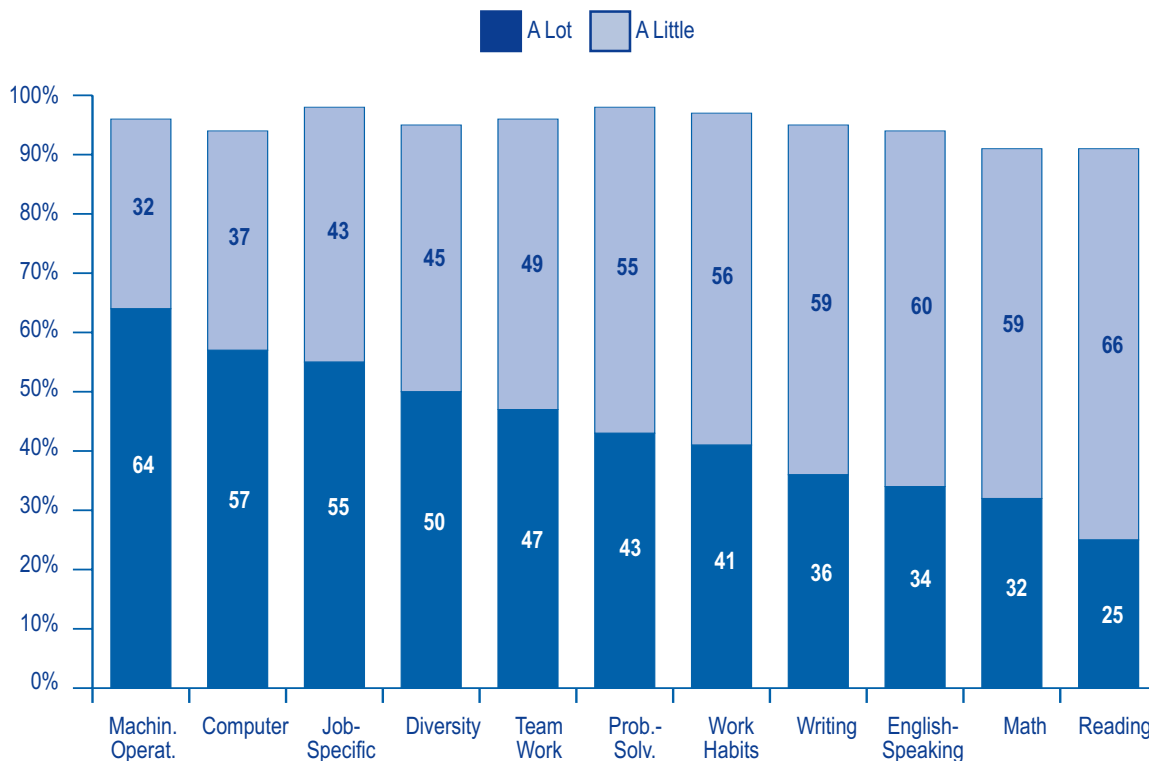
Among students who were employed when surveyed, 55 percent said their CTE was related to their job, about the same as was reported two years ago.

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

⁴Fifty-five percent reported substantial improvement in their job-specific skills; this is virtually the same percentage reported two years ago.

FIGURE 3

Percentage of Secondary CTE Completers Receiving Various Skills Training Who Reported Their Skills Improved a Little or a Lot



Participant Satisfaction

According to the survey, former students were generally satisfied with their CTE programs. Ninety-six percent said the program met their objectives, with fifty-seven percent reporting their objectives had definitely been met. Ninety-five percent were satisfied with the program overall. These levels of satisfaction are similar to those reported two years earlier.

Students were generally very satisfied with the facilities and equipment used in their training, the length of the program, and the quality of teaching. Satisfaction levels were relatively low with respect to advice on selecting a program and the usefulness of training to their career. Even in these areas, however, over 85 percent reported being somewhat satisfied, though fewer than half reported being very satisfied.

In general, former high school CTE students reported needing fewer support services than other groups we studied, and

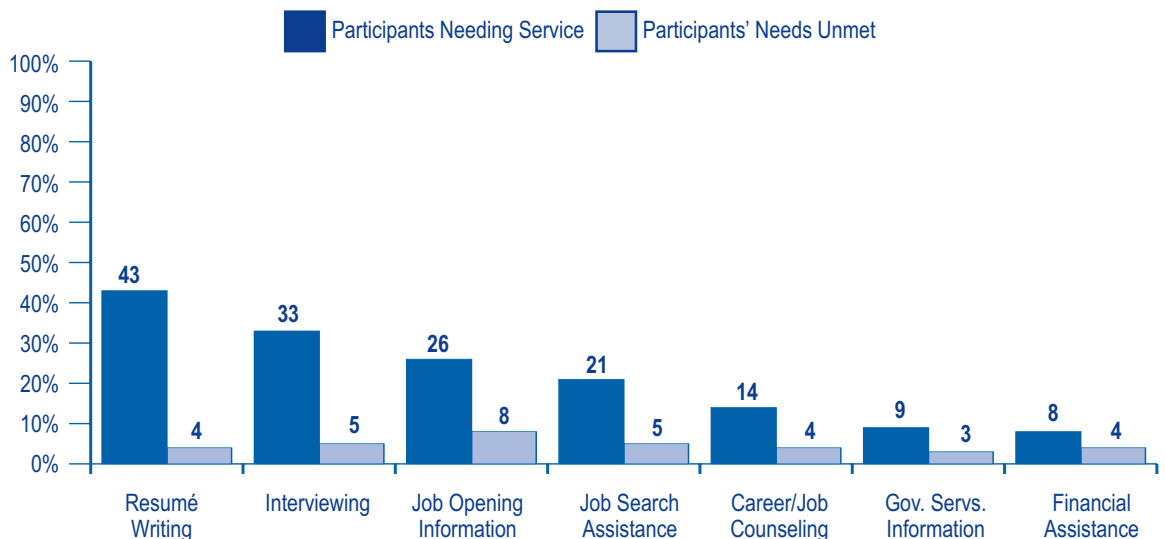
when they did need these services they generally received them (see Figure 4). The services most frequently needed by students were assistance with resumé writing and job interviewing.

Employer Satisfaction

The employer survey asked firms to evaluate new employees who recently completed a CTE program. Eighty-one percent of employers said they were either very or somewhat satisfied with the overall quality of work of these new employees (see Figure 5). Most employers were at least somewhat satisfied with the job-specific, workplace, and basic skills of former secondary CTE graduates. The percentage of employers who were very satisfied with these various skills varied. Only about one third were very satisfied with job-specific skills, work habits, and communication skills. One quarter were very satisfied with computer skills, and less than a fifth were very satisfied with math skills.

FIGURE 4

Secondary CTE Students Needing a Service and Percentages Leaving With Needs Unmet



Employment and Earnings

According to the survey, 74 percent of the 2001-02 secondary CTE completers were employed during the period six to nine months after leaving school. Based on the

ESD wage records in Washington and neighboring states, we found 58 percent of the former students had reported employment during the third quarter after they left their program (see Figure 6). Note these records

FIGURE 5

Percentage of Employers Satisfied With New Employees Who Had Recently Completed a Secondary CTE Program

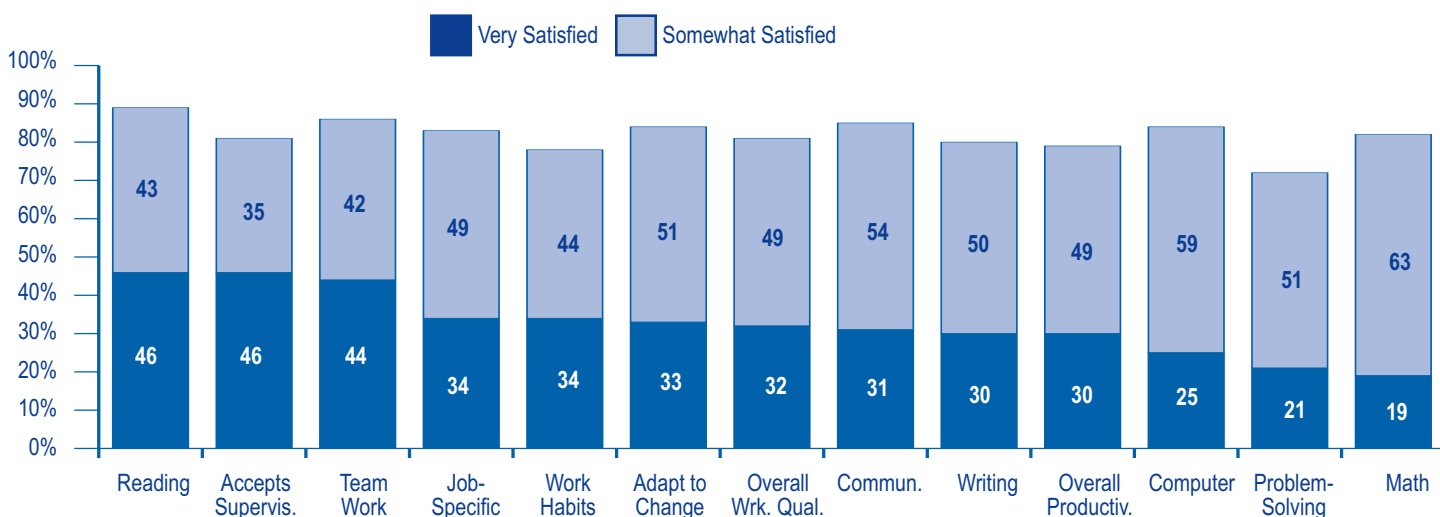


FIGURE 6

Employment and Earnings of Secondary CTE Completers in the Third Quarter After Leaving Program

	1995-96	1997-98		1999-00		2001-02	
	All	All	Not Enrolled in School	All	Not Enrolled in School	All	Not Enrolled in School
Percentage self-reporting employment during third quarter after leaving program	80	79		75		74	
Percentage with employment reported by employers to ESD the third quarter after leaving school	68	62		58		58	
Percentage with reported employment and/or enrolled in higher education		74		75		78	
Median quarterly hours worked, of those working	289	274	328	259	332	259	320
Percentage employed full-time of those working (averaging 30 or more hours/week)	33	29	37	29	41	28	38
Median annualized earnings of those working	\$8,053	\$8,635	\$10,287	\$8,328	\$10,584	\$8,454	\$10,354
Size of household in which median earnings would support at poverty level	0.9	1.0	1.4	0.9	1.5	0.9	1.4
Size of household in which median earnings would support at twice poverty level	0.4	0.5	0.6	0.5	0.6	0.5	0.6
Median hourly wage of those working	\$7.20	\$7.82	\$8.05	\$8.40	\$8.54	\$8.19	\$8.25
Percentage receiving medical benefits from employment (self-repored)	34	35		40		35	
Percentage receiving pension benefits from employment (self-reported)	17	17		18		16	

Notes: Earnings and wages are expressed in first quarter 2003 dollars. Poverty levels are based on federal poverty guidelines identified by the Department of Health and Human Services for 2003.

underestimate total employment rates.⁵ In all, 78 percent were either employed (in employment reported to ESD) or enrolled in a two- or four-year college or private career school during the third quarter following their program. Also note that our data on postsecondary enrollment is incomplete.⁶ Despite the economic downturn, the total placement rate for those leaving CTE programs increased between 1999-00 and 2001-02.

The median wage for Class of 2002 completers was \$8.25 per hour. Though this wage may seem low, it is important to remember these are young, entry-level workers. According to the survey responses, 35 percent of those employed had medical benefits provided by their employer, and 16 percent had pension benefits.

Employment of former secondary CTE students is heavily concentrated in retail trade (department stores, grocery stores, eating places) and services (see Figure 7).

Earnings varied by gender. As is true in most other programs we studied, male students had higher quarterly earnings than female students. Among those working during the third quarter after leaving school, the typical woman earned only 86 percent as much as men; she worked fewer

hours and received lower hourly wages. Hourly wage rates did not vary substantially by race or ethnicity. The number of hours worked did, however, and as a result African-Americans earned about 84 percent as much as whites.

School records suggest 7.5 percent of the students included in this study had a disability. The employment rate and earnings of vocational completers who had a disability were not substantially different from those who did not. They were, however, much less likely to be enrolled in higher education during the third quarter after exit (23 percent versus 46 percent).

FIGURE 7
Industry of Employment of Secondary CTE Students
in the Third Quarter After Leaving School

Industry Group	Employment
Agriculture, Forestry, Fishing	2.3%
Mining	0.1%
Construction	3.9%
Manufacturing	4.8%
Food and Kindred	1.0%
Lumber and Wood	0.9%
Other Manufacturing	2.9%
Transportation, Communications, Utilities	2.2%
Wholesale Trade	3.1%
Retail Trade	50.0%
Department Stores	6.7%
Grocery Stores	5.1%
Eating and Drinking Places	0.9%
Other Retail Trade	17.3%
Finance, Insurance, Real Estate	3.0%
Services	29.2%
Hotels and Lodging	1.2%
Cosmetology	1.0%
Temporary Help Supply	1.7%
Health Services	5.3%
Child Care	1.4%
Residential Care	0.9%
Other Services	17.6%
Public Administration	1.7%
TOTAL	100.0%

⁵Washington’s ESD wage file includes 85 to 90 percent of the employment in the state. ESD wage files do not include information on self-employment, and this is the main reason why employment reported by ESD is lower than what is self-reported by the survey respondents.

⁶We have data on enrollments in all of the community and technical colleges and public four-year universities in the state. We do not have information on enrollments in Washington’s private colleges and in out-of-state schools.

Net Impacts

Every four years the Workforce Training and Education Coordinating Board conducts net impact and cost-benefit analyses of workforce development programs. The last net impact study, which was conducted in 2002, examined the experience of participants who left programs during the 1999-00 and 1997-98 program years. Study results were presented in the last edition of *Workforce Training Results*, and these results are reproduced here for your information.

The net impact analysis, conducted by the W.E. Upjohn Institute for Employment Research, attempts to estimate what happens to program participants as compared to what would have happened if there were no program. The objective is to determine the short-term and long-term impacts of program participation on employment, wages, hours worked, quarterly earnings, and receipt of Unemployment Insurance (UI) benefits and public assistance.

In order to estimate these impacts, individuals who participated in the program were compared to individuals who had similar characteristics, but who didn't participate in it.⁷ The comparison group was selected from a general survey of high school seniors conducted by OSPI. This Graduate Follow-Up Study was used to identify both students who completed CTE, as well as comparable students who had not. Short-term net impacts were derived by examining outcomes for individuals who left school during the 1999-00 school year and long-term impacts for individuals who left during 1997-98.

Figure 8 shows the short-term net impacts of completing CTE. During the third quarter after the 1999-00 students graduated from school, there were positive net impacts on employment and earnings. CTE was associated with an increase of 5.5 percentage points in employment reported to ESD. Among those with reported employment, the impact on hours worked in the quarter was 11.4, and the impact on mean quarterly earnings was \$112. The impacts on welfare take-up rates were insignificant.

⁷The following characteristics were used in the selection of comparison group members: race, ethnicity, gender, disability status, participation in need-based special programs, grade point average, graduation from high school, region, public assistance receipt, employment history, industry, and earnings.

FIGURE 8
Short-Term Net Impact Results for Secondary CTE
Students Who Left School During 1999-00

	Net Impact
Employment: percentage in reported employment	5.5
Mean Hourly Wage: of those working	\$0.29*
Mean Hours Worked: per quarter for those working	11.4
Mean Quarterly Earnings: of those working	\$112
Temporary Assistance for Needy Families (TANF): percentage receiving aid	0.0*
Food Stamps: percentage receiving	-0.4
Medical Benefits: percentage receiving	-0.6**

Short-term refers to impacts observed in the third quarter after leaving the program.

** Not statistically significant at the 0.10 level.*

The long-term impacts, observed 8 to 11 quarters after 1978-99 students left school, are even stronger (see Figure 9). The employment rate for CTE students was 5.7 percentage points higher than that for the comparison group. Among those with reported employment, the impact on the mean hourly wage was \$0.50, the impact on hours worked in the quarter was 11.4, and the impact on mean quarterly earnings was \$451. Again, there were no significant impacts on welfare or medical benefits. There was a small positive effect of program participation on receipt of UI.

Benefits and Costs

The cost-benefit analysis examines the value of the net impact on earnings, employee benefits (estimated at 20 percent of earnings), social welfare benefits, UI benefits, and certain taxes.⁸ Benefits and costs are evaluated for the observed period of time and are forecast out to the age of 65 based on a statistical model. In order to compare benefits and costs in terms of net present values, postprogram benefits and costs are discounted by 3 percent per year, and all figures are stated in 2001 dollars. The benefits and costs presented here are based on impacts estimated for participants leaving programs in 1997-98, because a longer-term follow-up is required for this analysis.

FIGURE 9
Long-Term Net Impact Results for Secondary CTE
Students Who Left School During 1997-98

	Net Impact
Employment: percentage in reported employment	5.7
Mean Hourly Wage: of those working	\$0.50
Mean Hours Worked: per quarter for those working	27.1
Mean Quarterly Earnings: of those working	\$451
TANF: percentage receiving aid	0.1*
Food Stamps: percentage receiving	0.1*
Medical Benefits: percentage receiving	-0.3*
UI: percentage receiving	1.0

Longer-term refers to impacts observed 8 to 11 quarters after leaving the program.
 * Not statistically significant at the 0.10 level.

The program cost is the difference in the cost of a student completing CTE compared to the cost of another type of high school program.⁹ (The difference is primarily due to smaller student/teacher ratios in vocational education.) The intent of the cost-benefit evaluation is to analyze the net value of completing a vocational type of program, rather than the net value of completing high school.

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

⁹The marginal cost to the state is reflected by the vocational funding enhancement that school districts receive for each CTE student; \$720 per full-time equivalent student. We add to this the Carl D. Perkins Vocational and Technical Education funds allocated to CTE in the Washington State; \$150 on a full-time equivalent student basis.

CTE substantially enhances the lifetime earnings of program completers. Gains in earnings and employee benefits far outweigh the costs of CTE to the public.

For each CTE completer, the marginal cost to the public (taxpayer) is roughly \$870 over the length of their enrollment (see Figure 10). During the first two-and-a-half years after leaving school, the average completer will gain \$3,041 in earnings. During the course of their working life to age 65, they will gain about \$59,000 in earnings and \$12,000 in employee benefits. These are net gains compared to the earnings of similar individuals who did not receive the training.

Impacts on the receipt of social welfare benefits are minor. UI benefits, however, are expected to increase by \$3,201 over a completer’s working lifetime. (Since the former students are more likely to be working most of the time, they are more likely to qualify for UI when they do suffer unemployment.) The total public (taxpayer) cost is more than offset by expected gains in additional social security, Medicare, federal income, and state sales taxes—almost \$15,000 per vocational completer.

Areas for Improvement

The majority of students were satisfied with the quality of their CTE program. Most were either employed or enrolled in a two- or four-year college during the third quarter after leaving their program. Despite the economic downturn, the total placement rate for those leaving CTE programs increased between 1999-00 and

2001-02. Moreover, the net impact analysis suggests the program substantially increases the lifetime earnings of CTE completers.

Whereas the evaluation results are generally positive, there are areas that could be improved. Student and employer surveys suggest more resources should be devoted toward training in math skills. Relatively few students reported receiving math instruction, and among those that did, fewer than one third said these skills

FIGURE 10
Benefits and Costs of Secondary CTE

	First 2.5 Years After Program		Forecast to Age 65	
	Participant	Public	Participant	Public
Earnings	\$3,041		\$59,363	
Employee Benefits	\$608		\$11,873	
Taxes	-\$765	\$765	-\$14,930	\$14,930
UI Benefits	\$10	-\$10	\$3,201	-\$3,201
TANF Benefits*	-\$140	\$140	\$123	-\$123
Food Stamp Benefits	-\$19	\$19	\$332	-\$332
Medical Benefits	\$12	-\$12	\$88	-\$88
Program Costs		-\$870		\$870
TOTAL	\$2,747	\$32	\$60,050	\$10,316

*TANF benefits reflect the value of cash grants, child care, and other client support services.

improved a lot. Employers also reported they were not as satisfied with these students' math skills as they were with many of their other skills; fewer than one fifth were very satisfied with the math skills of new employees who completed a CTE program.

The former students included in this evaluation are young, entry-level workers. It is not surprising, therefore, that their median wage is relatively low—\$8.25 per hour. Among those working during the third quarter after leaving school, half were working in retail trade; over 20 percent had jobs in eating establishments. More should be done to encourage students to gain the skills needed to enter higher wage industries.

As was found in previous evaluations, the postprogram wage rates of female students were lower than those for males. Secondary CTE should continue to strive to eradicate differences based upon gender. Secondary CTE should also continue to attempt to improve outcomes for students with disabilities. These students currently are much less likely than other students to go on to postsecondary education or training.

Workforce Investment Act Title I-B Program for Youth

The Workforce Investment Act Title I-B Youth program (WIA) prepares youth for academic and employment success. On July 1, 2000, WIA replaced the Job Training Partnership Act (JTPA) of 1982 (evaluated in previous editions). In order to receive services, youth must be 14 through 21 years old, low income, and meet other criteria such as needing additional assistance to complete an educational program or to secure and hold employment. To be low income, one must be a welfare or food stamp recipient, homeless, a foster child, or have a family income below 70 percent of the lower living standard income level.

Eligible youth are assessed to determine academic, skill level, and support service needs. Strategies are developed for each person based on the assessment results. They may receive counseling, tutoring, job training, mentoring, or work experience. Other strategies include summer employment, study skills training, or instruction in obtaining a GED or equivalent. Youth may access information services through WorkSource, the state's one-stop career center system. Youth ages 18 through 21 may be coenrolled in WIA Title I-B Adult programs. At least 30 percent of the WIA Title I-B Youth funds must be used to provide activities for eligible out-of-school youth.

The Employment Security Department (ESD) administers the program at the state level. Twelve local workforce development councils, in consultation with chief local

elected officials, oversee WIA activities in local areas. Local youth councils assist the councils with the Title I-B Youth Program.

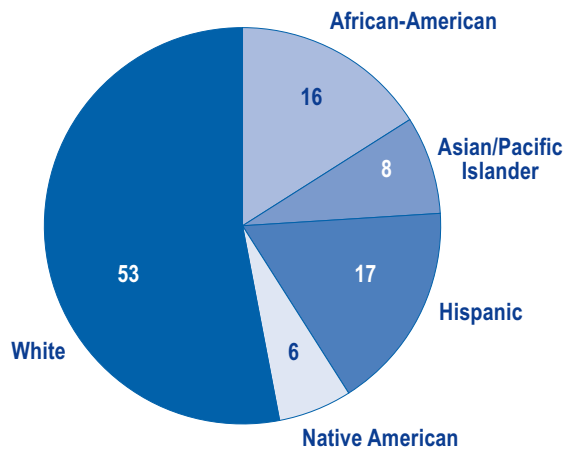
For this study, participant records were obtained for 2,244 youth who left the program from July 1, 2001, through June 30, 2002. The typical (median) participant was in the program for 10 months. This study includes information from ESD wage files from Washington, Idaho, Montana, Alaska, and Oregon. Federal and military employment records were also included. In addition, 478 of the former participants completed a telephone survey, providing further information on their employment and satisfaction with the training.

Participant Characteristics

WIA Title I-B Youth participants were more racially and ethnically diverse than the state general population. Forty-seven percent were people of color. African-American, Hispanic, and Native American youth were represented at levels above their proportions in the state population (see Figure 1).¹ Half of the participants were female.

¹Seventy-nine percent of Washington residents, according to the 2000 Census, are non-Hispanic whites. Hispanics now comprise 7.5 percent of the state's population. The racial composition figures depend upon how multiracial residents are counted. If those reporting more than one race are included, about 4 percent of our residents are African-American, nearly 3 percent are Native American, and just over 7 percent are Asian/Pacific Islander. Among those reporting only one race, 3 percent are African-American, under 2 percent are Native American, and 6 percent Asian/Pacific Islander.

FIGURE 1
Percentage of WIA Title I-B Youth Participants by Race and Ethnicity



Many WIA Title I-B Youth participants faced substantial barriers to success in school and the labor market. One third were high school dropouts when they entered the program.² Almost one quarter (23 percent) had records of arrest or conviction, 20 percent had a disability, and about one third lived in households that were receiving public assistance.

²These are defined as youth who had no high school degree and who were not enrolled in school at registration.

Competency Gains

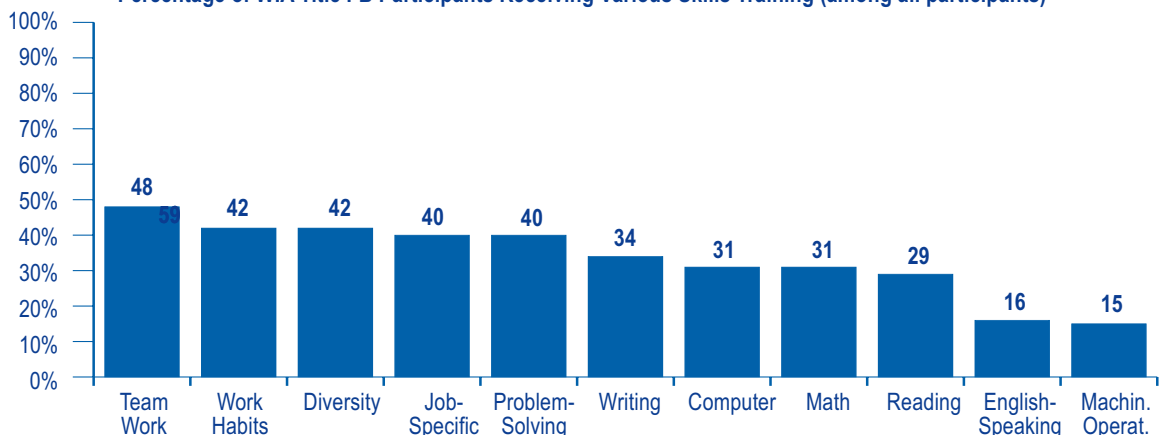
Based on survey results, the majority of WIA Title I-B youth entered the program to improve their job skills, get help in finding a job, and to get hands-on job training. Eighty percent enrolled to get skills for a new job, seventy-one percent to obtain job search assistance, and seventy-nine percent to get on-the-job training. About one third of the participants cited improving reading or math skills as a reason for enrolling.

When surveyed, 40 percent of participants reported they received training in specific job skills as part of their program; virtually the same percentage reported for the last year of JTPA.³ Forty to forty-eight percent of participants received training in various workplace skills (team work, work habits, diversity⁴ and problem-solving skills). About one third of the participants received training in writing, computer, math, and reading skills (see Figure 2).

³Among the youth leaving WIA Title I-B during 2001-02, 63 percent said they had received some form of training as part of their program. Among those receiving any training, 64 percent said they received training in job-specific skills.

⁴This refers to training in how to “work with people who are different from you.”

FIGURE 2
Percentage of WIA Title I-B Participants Receiving Various Skills Training (among all participants)



Among those who received particular types of training, almost all reported their skills had improved, at least a little (see Figure 3). The proportions reporting substantial skill improvement, however, varied across training categories. Relatively high percentages of participants who received training in job-specific skills, work habits, and diversity reported their skills improved a lot. Relatively low percentages reported substantial gains in math, writing, and reading skills. Among those employed after the program, 65 percent said their training was related to their job; an increase over the 59 percent reported two years ago for JTPA.

Promoting academic success is also an objective of the program. Administrative records provide information on school enrollment and high school completion for WIA Title I-B youth.⁵ Among former younger youth⁶ who exited WIA Title I-B during 2001-02, many had obtained a high school diploma or GED by the first quarter

after leaving the program, and many were enrolled in high school (see Figure 4). However, the data suggest 39 percent were neither in school nor had obtained a diploma or GED upon leaving WIA Title I-B.⁷

⁵These records are collected through the System, Knowledge, Information Systems data reporting system maintained by ESD.

⁶These youth were ages 14 to 18 when registering in WIA.

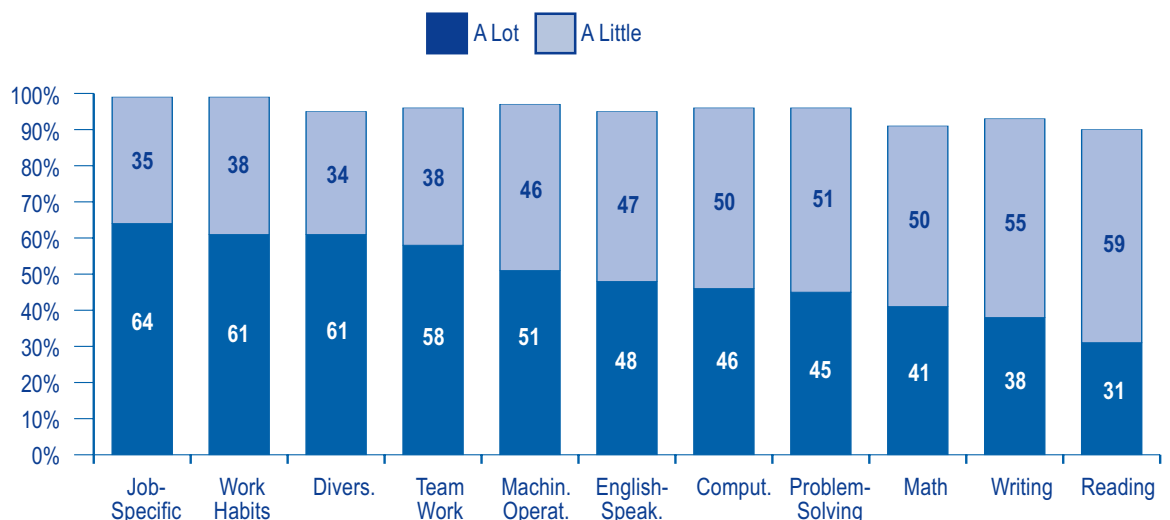
⁷Administrative data for all WIA Title I-B Youth, ages 14 to 21 at WIA registration, also suggest that 39 percent of those leaving the program during 2001-02 were not enrolled and had not obtained a diploma or GED at exit.

FIGURE 4
Educational Status of WIA Title I-B Younger Youth Upon Leaving the Program During 2001-02

Obtained a High School Diploma	23%
Obtained a GED	13%
Still Enrolled in High School at Exit	25%
Not in School, no Diploma or GED	39%

Note: Diploma or GED could be obtained anytime during enrollment and up to the first quarter after exit.

FIGURE 3
Percentage of WIA Title I-B Youth Receiving Various Skills Training Who Reported Their Skills Improved a Little or a Lot



Participant Satisfaction

Survey results revealed participants were quite satisfied with the training and support services they received as part of their WIA Title I-B Youth program. Ninety-three percent of the participants surveyed said they had met their educational objectives in the program. Overall satisfaction was comparable to levels reported two years ago for JTPA. Ninety-six percent were satisfied with the overall quality of the program.

Based on the survey results, most of the participants who needed employment and other support services received them (see Figure 5). The services most frequently needed by participants were information on job openings, assistance with resumé writing, interviewing, and job search assistance. Most participants had their needs

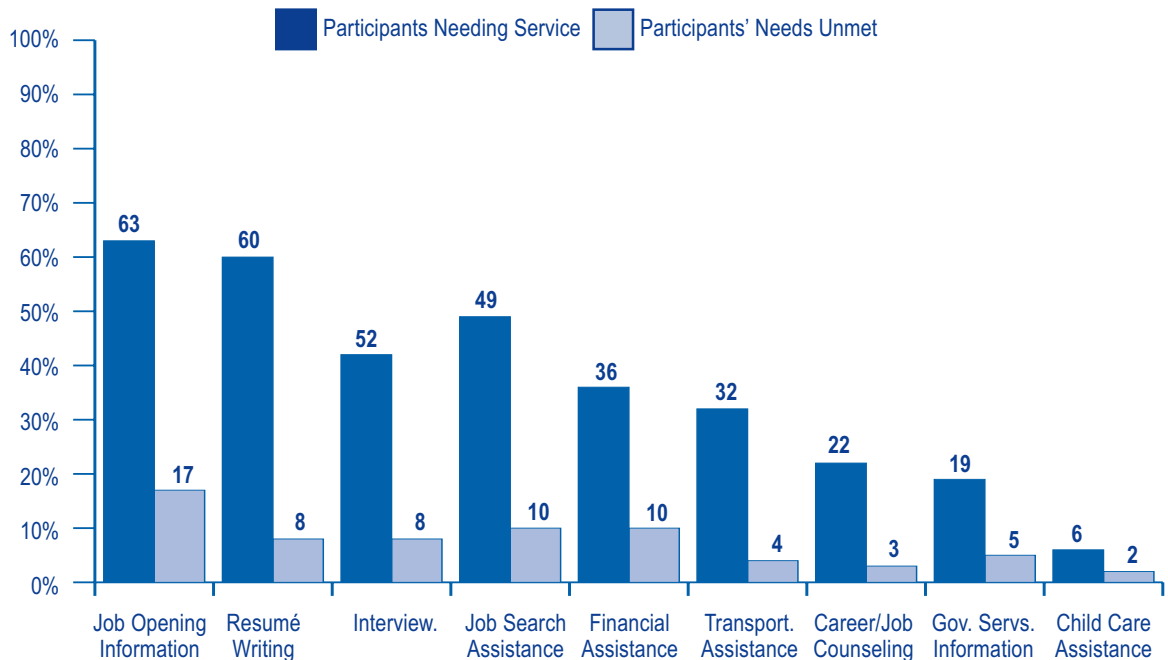
in these areas met. The greatest unmet need, reported by 17 percent of participants, was for job opening information.

Employment and Earnings

According to survey responses, 66 percent of the 2001-02 WIA Title I-B youth were employed during the period six to nine months following the program (see Figure 6). To find out more about the former participants' postprogram employment and earnings, we matched participant records with ESD wage files from Washington and neighboring states. These files contain information only on those individuals with employment reported for unemployment insurance purposes (85 to 90 percent of the total employment in state, with self-employment being the largest type of employment not covered).

FIGURE 5

WIA Title I-B Youth Needing a Service and Percentages Leaving With Needs Unmet



Forty-seven percent of the participants had employment reported to ESD during the third quarter after they left the program. About 20 percent of the former WIA Title I-B Youth participants were still enrolled in school during this quarter. Among those who were not, 52 percent had reported employment.⁸ Less than one third of these youth worked full-time (averaging of 30 hours or more per week) during the third quarter.

⁸Program administrative records, Unemployment Insurance wage record matches, and matches with public two- and four-year colleges and universities provide a rough picture of postprogram work and school enrollment statuses of WIA youth. The data suggest that youth leaving WIA Title I-B during 2001-02 were engaged in the following activities during the third quarter after exit—20 percent were enrolled in school (and not working), 10 percent were working and in school, 37 percent were working (and not in school), and 33 percent were neither in school nor working. Note, however, that these data underestimate both employment and school enrollment.

FIGURE 6

Employment and Earnings of WIA Title I-B Youth Participants in the Third Quarter After Leaving Program

	1995-96* All Participants	1997-98* All Participants	1999-00* All Participants	2001-02 All Participants	2001-02 Not in High School
Percentage self-reporting employment during third quarter after leaving program	66	76	74	66	
Percentage with employment reported by employers to ESD the third quarter after leaving program	50	59	55	47	52
Median quarterly hours worked, of those working	258	250	247	234	253
Percentage employed full-time of those working (averaging 30 or more hours/week)	32	27	28	27	29
Median annualized earnings of those working (not in higher education)	\$6,545	\$6,941	\$7,598	\$7,549	\$8,213
Size of household in which median earnings would support at poverty level	0.7	0.8	0.9	0.8	0.9
Size of household in which median earnings would support at twice poverty level	0.4	0.4	0.4	0.4	0.5
Median hourly wage of those working (not in higher education)	\$6.69	\$7.04	\$7.89	\$7.90	\$7.97
Percentage receiving medical benefits from employment (self-reported)	36	35	40	38	
Percentage receiving pension benefits from employment (self-reported)	20	18	18	17	

Notes: Earnings and wages are expressed in first quarter 2003 dollars. Poverty levels are based on federal poverty guidelines identified by the Department of Health and Human Services for 2003.

*Figures for 1995 through 2000 are for the JTPA II-C Youth Program.

Among those not enrolled in high school or higher education, the median hourly wage was \$7.97, and median annualized earnings were \$8,213. Though these earnings levels are low, it is important to remember these participants were young, entry-level workers, and many of them faced substantial barriers to success in the labor market. Wages rates among former youth participants, as one would expect, exhibited less variation than was observed in programs serving adults. The distribution of wages received by former WIA Title I-B Youth participants was:

	<i>Hourly Wage</i>
Lowest 25 percent	Below \$7.31
Second 25 percent	\$7.31 - \$7.97
Third 25 percent	\$7.97 - \$9.28
Highest 25 percent	Above \$9.28

According to the survey responses, 38 percent of those employed had health benefits provided by their employer, and 17 percent had pension benefits.

Postprogram employment among WIA Title I-B youth is heavily concentrated in retail trade and services, with 22 percent in eating and drinking establishments (see Figure 7).

Several factors need to be considered when comparing outcomes for program participants over time. WIA replaced JTPA on July 1, 2000; the results through 2000 in Figure 6 are for JTPA Title II-C. Youth leaving programs during 2001-02 entered a much weaker labor market than did those leaving during 1999-00. The characteristics of these youth also changed. Especially

important is the greater enrollment of younger youth under WIA Title I-B than was the case during the last year of JTPA; the percentage of participants aged 16 or younger at registration increased from 24 percent to 40 percent. Younger youth are less likely to be employed than older youth.

Gender differences in postprogram hours worked, earnings, and wages were not significant among former WIA Title I-B youth. The variation in labor market outcomes by race and ethnicity was also less substantial than among participants in other programs.

Among the WIA Title I-B youth leaving the program during 2001-02, 20 percent reported having a disability. Postprogram hours worked and earnings, but not hourly wages, were significantly lower for these

FIGURE 7
Industry of Employment of WIA Title I-B Youth
in the Third Quarter After Leaving Program

Industry Group	Employment
Agriculture, Forestry, Fishing	2.2%
Construction	3.3%
Manufacturing	6.0%
Transportation, Communication, Utilities	1.1%
Wholesale Trade	2.5%
Retail Trade	42.8%
Department Stores	4.4%
Grocery Stores	4.8%
Eating & Drinking Places	22.4%
Other Retail	11.1%
Finance, Insurance, Real Estate	2.2%
Services	36.9%
Temporary Help Supply	4.0%
Health Services	5.7%
Social Services	6.1%
Other Services	21.2%
Public Administration	2.9%
TOTAL	100%

participants. Median annual earnings for those with disabilities were 81 percent that of those with no reported disability.

Net Impacts

Every four years the Workforce Training and Education Coordinating Board (Workforce Board) conducts net impact and cost-benefit analyses of workforce development programs. The last net impact study, which was conducted in 2002, examined the experience of participants who left programs during the 1999-00 and 1997-98 program years. Study results were presented in the last edition of *Workforce Training Results*, and these results are reproduced here for your information.

The net impact analysis, conducted by the W.E. Upjohn Institute for Employment Research, attempts to estimate what happens to these participants as compared to what would have happened if they had not enrolled

in the program. The objective is to determine the short-term and long-term impacts of program participation on employment, wages, hours worked, quarterly earnings, and receipt of Unemployment Insurance (UI) benefits and public assistance.

In order to estimate these impacts, individuals who participated in the program were compared to individuals who had similar characteristics, but who didn't participate in it. The comparison group members were selected from registrants to the state's ESD. Short-term net impacts were derived by examining outcomes for individuals who exited the programs (or from the ESD) in fiscal year 1999-00 and long-term impacts for individuals who exited in fiscal year 1997-98.

Figure 8 shows the short-term net impacts of the program. During the third quarter after the 1999-00 participants left training,

FIGURE 8
Short- and Long-Term Net Impact Results for JTPA Title II-C Youth Who Left Program During PY 1999-00 or PY 1997-98

	Short-Term 1999-00 Exitors	Long-Term 1997-98 Exitors
Employment: percentage in reported employment	-4.0*	5.3
Mean Hourly Wage: of those working	\$0.96*	-\$0.71*
Mean Hours Worked: per quarter for those working	10.4*	2.3*
Mean Quarterly Earnings: of those working	\$86*	-\$72*
Temporary Assistance to Needy Families (TANF): percentage receiving aid	7.9	-0.7*
Food Stamps: percentage receiving	8.4	5.0
Medical Benefits: percentage receiving	16.3	2.9*
UI: percentage receiving		3.5

Short-term refers to impacts observed in the third quarter after leaving the program. Long-term refers to impacts observed 8 to 11 quarters after leaving the program.

** Not statistically significant at the 0.10 level.*

there were no statistically significant impacts on employment, hourly wages, hours worked, or quarterly earnings. There was a positive impact on the hourly wage rate, among those with reported employment. Program participation was associated with short-term increases in the receipt of social welfare benefits.⁹

The long-term net impacts are also shown in Figure 8. These are the impacts observed 8 to 11 quarters after participants left the program during the 1997-98 program year. Again, the impacts on the hours worked and earnings (among those working) are not statistically significant. There is, however, a significant positive impact (5.3 percent) on employment in the longer term. Note: this is the difference between participant results and the employment of similar individuals who did not participate in the WIA Title I-B Program for Youth. The impacts on social welfare benefits moderate in the longer term.

Benefits and Costs

The cost-benefit analysis estimates the value of the net impact on earnings, employee benefits (estimated at 20 percent of earnings), social welfare benefits, UI benefits, and certain taxes.¹⁰ Program costs include both direct program costs and support payments borne by the state, as well as the foregone earnings borne by program participants. Benefits and costs are calculated for the observed period of time and are forecast out to the age of 65 based on a statistical model. In order to compare benefits and costs in terms of net present values, postprogram benefits and costs are discounted by 3 percent per year, and all figures are stated in 2001 dollars.

The benefits and costs presented here are based on impacts estimated for participants leaving programs in 1997-98, because a longer-term follow-up is required for this analysis.

For each JTPA Title II-C participant, the public (taxpayer) cost is \$2,325 over the length of their enrollment, and the participant cost is \$343 in foregone earnings while training (see Figure 9). During the first two-and-a-half years after leaving the program, program participation does not increase the average trainee's earnings. Lifetime earnings are increased, however, because of positive impacts on employment. During the course of working life to age 65, the average trainee will gain about \$30,150 in net earnings (earnings minus foregone earnings) and about \$6,100 in employee benefits. These are net gains compared to the earnings of similar individuals who did not receive the training. The ratio of participant benefits to program costs, not considering impacts on social welfare benefits or taxes, is \$36,269 to \$2,325, or 16 to 1.

⁹A few participant characteristics, associated with barriers to employment, were not directly controlled for in the net impact analysis because of data constraints. Data for the comparison group did not include information on offender status, substance abuse, or single-parent status. In order to examine the sensitivity of the estimated impacts to these omitted variables, the analysis was also conducted for the subset of participants who were not substance abusers, ex-offenders, or single parents. Removing these hard-to-serve participants did not significantly alter the estimated employment or earnings impacts. It did, however, change the estimated impacts on social welfare benefit receipt; the impacts became negative.

¹⁰Upjohn estimated the impact of the net change in earnings on social security, Medicare, federal income, and state sales taxes.

The total public (taxpayer) costs is less than the program costs because program participation is associated with increased tax revenues. From the time of leaving training to age 65, the public is expected to gain over \$7,600 per participant in additional social security, Medicare, federal income, and state sales taxes.

Areas for Improvement

When reviewing the results of this evaluation, remember WIA Title I-B serves youth who are disadvantaged. Many of the participants included in this study faced substantial barriers to success in school and the labor market.

Most participants were very satisfied with the program, and support services remain a strong area for the WIA Title I-B Youth Program, as it was for JTPA. Based on the survey results, most of the participants who needed employment and other support services received them. The greatest unmet need was for job opening information.

Program administrators should consider placing even greater resources into promoting high school completion. Among former youth who exited WIA Title I-B during 2001-02, many did obtain a high school diploma, and many were enrolled in high school upon leaving the program. However, too many were neither in school nor had obtained a diploma.

FIGURE 9

Benefits and Costs of JTPA Title II-C for Youth

	First 2.5 Years After Program		Forecast to Age 65	
	Participant	Public	Participant	Public
Earnings	-\$529		\$30,510	
Employee Benefits	-\$106		\$6,102	
Taxes	\$133	-\$133	-\$7,673	\$7,673
UI Benefits	\$175	-\$175	\$4,456	-\$4,456
TANF Benefits*	-\$2,261	\$2,261	-\$942	\$942
Food Stamp Benefits	-\$54	\$54	-\$3,694	\$3,694
Medical Benefits	\$142	-\$142	\$1,060	-\$1,060
Foregone Earnings	-\$343		-\$343	
Program Costs		-\$2,325		-\$2,325
TOTAL	-\$2,843	-\$460	\$29,476	\$4,468

*TANF benefits reflect the value of cash grants, child care, and other client support services.

Perhaps more attention should be given to basic skills instruction. According to survey results, among the WIA Title I-B youth who received basic skills training, relatively few reported substantial gains in math, writing and reading skills.

Earnings among former participants, as is typical of young, entry-level workers, were relatively low. One problem is employment

among former WIA Title I-B youth is heavily concentrated in retail trade and lower-wage services. More should be encouraged to receive the job-specific skills training required for higher-wage jobs.