BC Student Outcomes
APPSO • BGS • DACSO • DEVSO

2012 APPSO

Apprenticeship Student Outcomes Survey

report of findings

BRITISH COLUMBIA

ita industry training authority

Contents

Acknowledgements

The Apprenticeship Student Outcomes (APPSO) Survey is one of four annual surveys that make up the BC Student Outcomes project (http://outcomes.bcstats.gov.bc.ca/Default/Home.aspx). The APPSO Survey targets former apprenticeship students who have completed the final level of their technical training; the Diploma, Associate Degree, and Certificate Student Outcomes (DACSO) Survey collects information from former students from diploma, associate degree, and certificate programs; the Developmental Student Outcomes (DEVSO) Survey focuses on former students who took Adult Basic Education and English as a Second Language programs; and the Baccalaureate Graduates Survey (BGS) is for graduates from all public degree-granting institutions.

The BC Student Outcomes surveys are conducted with funding from the Ministry of Advanced Education, Innovation and Technology (AEIT) and the participating British Columbia post-secondary institutions. Additional funding for the APPSO Survey is provided by the Industry Training Authority (ITA) and for the DEVSO Survey by Citizenship and Immigration Canada, through the Ministry of Jobs, Tourism and Skills Training.

The British Columbia Student Outcomes Research Forum (http://outcomes.bcstats.gov.bc.ca/TheForum/ForumInfo.aspx) oversees all aspects of the project, from data collection to the reporting of survey results. The Forum represents a longstanding partnership among the ministry responsible for post-secondary education, participating post-secondary institutions, and system-wide organizations, such as the Senior Academic Administrators' Forum, the Council of Senior Student Affairs Leaders, the BC Registrars' Association, and the BC Council on Admissions and Transfer.

BC Stats acts as steward of the APPSO, BGS, DACSO, and DEVSO data and is responsible for providing operational support, day-to-day management, advice, and reports, as directed by the Forum.

Highlights

The 2012 Apprenticeship Student Outcomes (APPSO) Survey targeted former students who completed the final year of their apprenticeship training in a B.C. post-secondary institution between July 1, 2010 and June 30, 2011. From January to April 2012, 3,701 former students from 37 post-secondary or training institutions (14 public and 23 private) completed the survey, by telephone or online. The overall response rate was 55 percent. The following are highlights from the survey findings.

Former apprenticeship students

- 91 percent of respondents were male; the median age for all respondents was 27
- 31 percent of respondents took pre-apprenticeship training: a trades foundation course or entry-level trades training
- 39 percent had some other post-secondary education
- 52 percent of those with previous post-secondary education or training had achieved a prior credential
- 51 percent of respondents were in one of three program groups: Welding & Precision Production, Electrician, or Carpentry
- 81 percent of respondents took their in-school apprenticeship training in public post-secondary institutions

In-school experiences

- 95 percent of respondents said they were *very satisfied* or *satisfied* with their in-school training
- 84 percent of respondents said their apprenticeship training program helped them (*very well* or *well)* to use mathematics appropriately
- 83 percent said their program helped them (*very well* or *well) w*ork effectively with others
- 85 percent said the quality of their instruction was *very good* or *good*
- 65 percent said the length of their program was *about right*
- 71 percent said the availability of their technical training courses was *very good* or *good*
- 83 percent of respondents rated the content of their training *very good* or *good* at covering the standards used in their field
- 76 percent of the respondents said they received their British Columbia Certificate of Qualification (C of Q)
- 94 percent reported that their training was *very useful* or *somewhat useful* to them in preparing to write the certification exam

Workplace experiences

- 90 percent of respondents with workplace experience said they were *very satisfied* or *satisfied* with their overall workplace training
- 90 percent said their in-school technical training was *very related* or *somewhat related* to their workplace experience

Employment

- 96 percent of respondents were in the labour force (employed or looking for work)
- 9 percent of those in the labour force were unemployed
- 87 percent of respondents were employed
- 97 percent of employed respondents were working full-time
- 6 percent of employed respondents were self-employed
- 47 percent had done work placements with their current employer
- 80 percent of employed respondents took less than one month to find a job
- 91 percent of employed respondents said their employment was *very related* or *somewhat related* to their in-school training
- 94 percent said the knowledge and skills they gained through their training had been *very useful* or *somewhat useful* in performing their job
- $28 was the median hourly wage of respondents who were employed at the time of the survey

Introduction

Apprenticeship has a long history as a means of training the next generation of skilled trades people. In the face of looming skills shortages, effective apprenticeship training is more important than ever. Under B.C.'s apprenticeship model, training is delivered across the province in partnership with the Industry Training Authority, public post-secondary and private training institutions, and employers. Prospective apprentices can choose from over 100 trades in a wide range of trades and industry occupations.

For most apprentices, the majority of their time is spent on-the-job, although in-school technical training will take 15 to 20 percent of their apprenticeships. A traditional apprenticeship usually requires four years to complete, although options requiring less time are available. A successful apprentice is one who completes the technical training and the required work hours, passes examinations, and is recommended for certification by the sponsoring employer to earn a "ticket" to work in a skilled trade. That credential or Certificate of Qualification (C of Q) is recognized in British Columbia; many trades also offer an Interprovincial (IP) Red Seal, which is recognized across Canada as a signal that the apprentice passed a standardized national exam.

The ministries of Advanced Education, Innovation and Technology (AEIT) and Jobs, Tourism and Skills Training (JTST), the Industry Training Authority (ITA), and the institutions that provide technical training share a commitment to expand and improve delivery of apprenticeship training in B.C. Information provided by the annual Apprenticeship Student Outcomes survey is an important part of that process.

About the 2012 Apprenticeship Survey

The 2012 Apprenticeship Student Outcomes (APPSO) Survey is the eighth annual survey of former apprenticeship students. A total of 6,714 apprentices who completed the final year of their apprenticeship training at a B.C. post-secondary institution between July 1, 2010 and June 30, 2011 were eligible for this survey. The survey was conducted, by telephone and web, from January to April 2012; there were 3,701 respondents, making the response rate 55 percent. The respondents were from 37 post-secondary or training institutions (14 public and 23 private) and had completed 217 apprenticeship courses. (For more information on the survey, see Appendix A: Apprenticeship Survey Methodology.)

To provide insight into the apprenticeship experience, former students were asked to:

- rate aspects of their in-school and workplace training;
- evaluate the usefulness of the knowledge and skills they gained;
- quantify their level of satisfaction with their training; and
- describe their post-training employment and further education.

Data from the apprenticeship student survey are currently used by AEIT and ITA for policy development and to monitor the effectiveness of the training system. Participating B.C. post-secondary institutions use information from the annual survey for program and curriculum reviews, for marketing and recruitment, and to assist prospective students with career decisions.

Feedback from former foundation or pre-apprenticeship trades training students is currently collected in the annual Diploma, Associate Degree, and Certificate Student Outcomes (DACSO) Survey, so AEIT and the institutions also have access to pertinent and valuable outcomes information for non-apprenticeship and pre-apprentice trades programs.

The 2012 APPSO survey included respondents from programs that were previously surveyed in DACSO. The ITA now offers apprenticeship completion and certification at different levels for certain programs, and the cohort selection criteria for APPSO were changed to include former students from these progressive credential programs. In 2012, this change resulted in larger numbers of former cook and welding students (in programs disaggregated into Professional Cook 1, 2, and 3 and Welder C, B, and A) and a handful of respondents from some carpentry (residential construction) programs and parts and warehousing programs. (See Appendix B: Trades Programs Moved from DACSO to APPSO, for a discussion of the impact of the changes made to the cohort selection criteria for the APPSO survey.)

About this report

This report presents a summary of the findings from the 2012 APPSO survey. In some cases, comparisons are made with the results from previous years' apprenticeship surveys. When the terms *former students* or *former apprentices* are used, they refer only to the former apprenticeship students who responded to one of the Apprenticeship Student Outcomes surveys. Note that the respondents whose results are reported here are not necessarily representative of all the former students who were eligible for the survey.

The report is organized into the following sections:

- details about the former students who were surveyed and what they studied;
- their in-school experiences;
- their workplace training experiences; and
- their subsequent labour force participation, employment, and occupations.

The survey respondents had apprenticed in a variety of trades. The trade programs named in this report have been organized according to the Classification of Instructional Programs (CIP) coding and grouped into nine categories to simplify reporting. To see how these program groups relate to institutions' program names, see Appendix C: Apprenticeship Program Groups and Institutions' Programs.

The body of the report includes analyses by the program groups; the appendices include tables of results by the nine program groups with some additional results by individual CIP. Please see Appendix D: Response Rates by Program for a list of the program groups with added results for six individual programs. The appendix shows the number of former students eligible for the survey, the number of respondents, and the response rate by program group.

Former Apprenticeship Students

The 2012 Apprenticeship Student Outcomes Survey incorporated questions about students' previous education, including other trades training and credentials already completed. They were also asked to report their citizenship or immigration status and Aboriginal identity. Information on age and gender came from administrative records. The 3,701 former students who were interviewed had completed technical training in 217 different courses across B.C.—the programs have been organized into nine apprenticeship program groups, most of which are self-explanatory.[1] The category of "Other Construction Trades" included programs such as Roofer and Glazier. Another category, called "Other Trades," included Horticulture, Crane Operators, and Heavy Equipment Operators.

Who were former apprenticeship students?

The 2011 and 2012 survey cycles have seen an increase in the percentage of females responding to the surveys: 9 percent of survey respondents were female, up from 5 percent in the 2010 survey. The largest number of females, by far, was in the Culinary Arts & Personal Services group. The change in cohort criteria (moving programs from DACSO to APPSO) had an impact, but did not account for all of the increase in female participation.[2]

The largest number of female respondents was from the Culinary Arts & Personal Services group

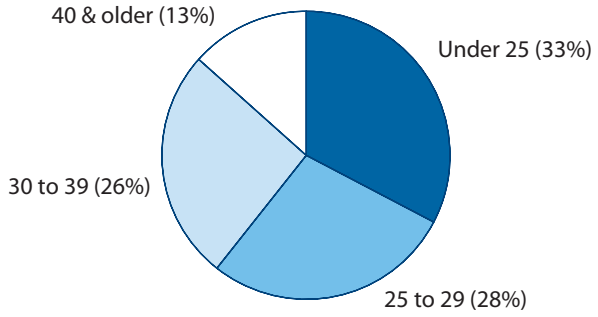
Program groups	Female respondents	Percent of group
Automotive & Other Mechanics	10	3%
Carpentry	24	5%
Culinary Arts & Personal Services	194	41%
Electrician	22	4%
Industrial & Heavy Duty Mechanics & Repair	16	4%
Other Construction Trades	6	4%
Other Trades	13	18%
Plumbing	9	2%
Welding & Precision Production	44	6%
Total	**338**	**9%**

1 The hundreds of courses offered by institutions have been grouped using their CIP coding into nine program categories for reporting. To see which courses from each institution are included in each program group, refer to Appendix C: Apprenticeship Program Groups and Institutions' Programs.

2 See Appendix B: Trades Programs Moved from DACSO to APPSO, for a discussion of the impact of changes to the APPSO cohort selection criteria.

As a group, the former apprenticeship students who responded to the survey were a little older than many other post-secondary students.[3] At the time of the APPSO survey, the age of respondents ranged from 17 to 72; the median age was 27. A majority (61 percent) of respondents were under 30; over one-quarter (26 percent) were in the age group of 30 to 39.

A majority of APPSO respondents were under 30



Note: Age is at the time of the survey.

There were some differences in age by apprenticeship program group. Some groups seem to attract older students: the median age for apprentices from Industrial & Heavy Duty Mechanics & Repair was 33, while for those from Culinary Arts & Personal Services, it was 24. The addition of shorter-term culinary arts programs with progressive credentials has had an impact on the median age of this group.

The age of respondents varied by apprenticeship program group

Program groups	Age
Automotive & Other Mechanics	27
Carpentry	27
Culinary Arts & Personal Services	24
Electrician	28
Industrial & Heavy Duty Mechanics & Repair	33
Other Construction Trades	30
Other Trades	31
Plumbing	28
Welding & Precision Production	25
Total	**27**

Note: Age is at the time of the survey. Median ages are shown.

In 2012, 7 percent of respondents identified themselves as Aboriginal; in 2011 it was 6 percent, which was up from 4 percent in 2010. A majority (71 percent) of those who self-identified as Aboriginal in 2012 further identified themselves as First Nations.

The APPSO survey included questions about country of origin and citizenship status, and in 2012, 88 percent of respondents said they were born in Canada. Of the 12 percent whose country of origin was not Canada, 66 percent were citizens and 29 percent were

3 The median age of respondents to the Diploma, Associate Degree, and Certificate Student Outcomes Survey was 25 in 2012.

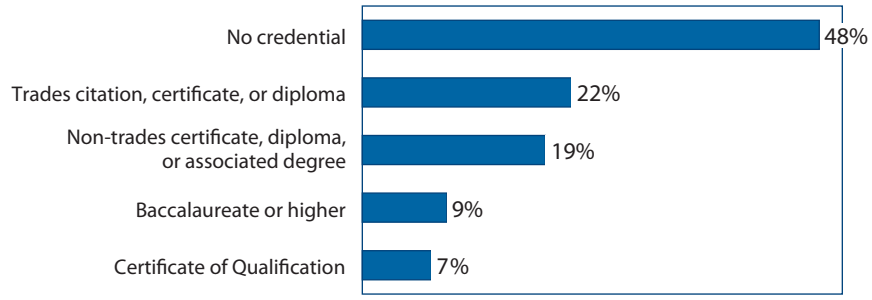
permanent residents while they were taking their training. The findings from the 2011 survey were similar.

What previous education did respondents have?

Former students were asked to report on any post-secondary education they had taken before beginning their apprenticeships: 57 percent had taken pre-apprenticeship training or other post-secondary education. Almost one-third (31 percent) of respondents had taken pre-apprenticeship training: a trades foundation course or entry-level trades training.[4] The majority (88 percent) of those who took pre-apprenticeship training studied in the same trade as their apprenticeship. A relatively high proportion of respondents (39 percent) had taken other post-secondary education, and a significant number (14 percent) had taken both pre-apprenticeship training and other post-secondary studies.

Over half (52 percent) of those who had previous post-secondary training or education achieved a credential from their prior training. The most common was a trade citation, certificate, or diploma, although almost as many had a non-trades certificate, diploma, or associate degree.

Many respondents had previous post-secondary credentials



Note: percentages are based on those who had taken previous post-secondary education, including pre-apprenticeship training. Respondents could have more than one type of post-secondary credential.

What apprenticeship programs did survey respondents take?

The former apprenticeship students surveyed in 2012 had completed training in 217 trade courses, which have been organized into nine program groups. Over half of the respondents were in one of the following groups: Welding & Precision Production, Electrician, or Carpentry.

There were some slight differences in the programs taken by respondents to the 2011 APPSO Survey, but the distribution of respondents over the program groups is similar—Welding & Precision Production and Electrician program groups are the largest and the top three groups account for more than 50 percent of respondents.

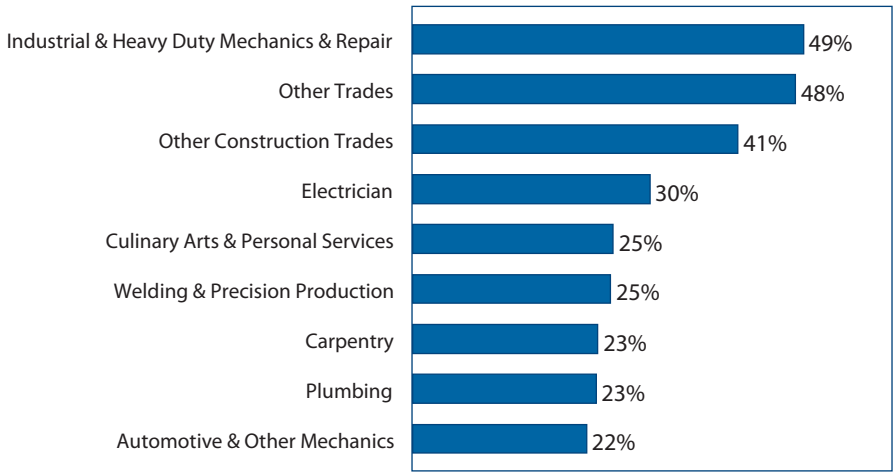
4 The ITA framework for pre-apprenticeship training refers to Foundation Industry Training, which has replaced the training programs previously known as Entry-Level Trades Training (ELTT).

The three largest program groups accounted for half of the respondents

Program group	2012 Respondents	2012 Percent	*2011 Respondents*	*2011 Percent*
Welding & Precision Production	789	21%	*869*	*24%*
Electrician	592	16%	*553*	*15%*
Carpentry	509	14%	*430*	*12%*
Culinary Arts & Personal Services	476	13%	*418*	*12%*
Plumbing	427	12%	*459*	*13%*
Industrial & Heavy Duty Mechanics & Repair	360	10%	*305*	*8%*
Automotive & Other Mechanics	332	9%	*322*	*9%*
Other Construction Trades	145	4%	*163*	*5%*
Other Trades	71	2%	*80*	*2%*
Total	**3,701**	**100%**	***3,599***	***100%***

Overall, 28 percent of respondents said they relocated from their home community to attend their in-school apprenticeship training. That percentage varied by program group: almost half of the former students from Industrial & Heavy Duty Mechanics & Repair moved to study, while just over one-fifth of those from Automotive & Other Mechanics programs relocated.

Many respondents relocated from their home communities for their apprenticeship training



Did apprentices study in public or private institutions?

The majority (81 percent) of the former apprenticeship students who were surveyed in 2012 had studied in public institutions—19 percent of respondents had taken their training in private institutions. This percentage is consistent with the 2010 and 2011 findings. In earlier years, the percentage of respondents from private institutions climbed steadily from 2005 (11 percent) to 2009 (22 percent) before dropping in 2010.

The majority of respondents attended public post-secondary institutions

Public Institutions	Respondents	% of Total Respondents
B. C. Institute of Technology	838	23%
Okanagan College	413	11%
Camosun College	272	7%
Vancouver Community College	267	7%
College of New Caledonia	235	6%
Thompson Rivers University	233	6%
Kwantlen Polytechnic University	189	5%
Vancouver Island University	173	5%
College of the Rockies	85	2%
Selkirk College	77	2%
North Island College	74	2%
Northern Lights College	65	2%
Northwest Community College	56	2%
University of the Fraser Valley	20	1%
Total	**2,997**	**81%**

Close to one-fifth of respondents attended private institutions

Private Institutions	Respondents	% of Total Respondents
Pacific Vocational College	183	5%
Piping Industry Trade School (PIAB)	86	2%
Electrical Industry Training Institute	63	2%
R.C.A.B.C. Roofing Institute	43	1%
Northwest Culinary Academy of Vancouver Inc.	40	1%
Sheet Metal Workers Training Centre	40	1%
Joint Apprentice Refrigeration Trade School	38	1%
The Finishing Trades Institute of BC	33	1%
Discovery Community College	31	1%
Trowel Trades Training Association	20	1%
B.C. Wall & Ceiling Association	18	<1%
IUOE Local 115 Training Association	15	<1%
White Spot Ltd.	13	<1%
Funeral Service Association of BC	12	<1%
Salvation Army Cascade Culinary Arts School	12	<1%
B.C. Floor Covering Joint Conference Society	10	<1%
Enform Canada	10	<1%
Piledrivers, Divers, Bridge, Dock, Loc. 2404	10	<1%
Broadband Institute	8	<1%
Christian Labour Association of Canada	7	<1%
Quadrant Marine Institute	5	<1%
Riverside College	#	<1%
Secwepemc Cultural Education Society	#	<1%
Total	**704**	**19%**

Note: Low numbers are masked to preserve confidentiality.

For some program groups the majority of training is offered by public institutions; for others, the majority of training is done by private institutions or organizations. For example, almost all (97 percent) of the respondents from Automotive & Other Mechanics programs

studied in a public institution, while a large majority (80 percent) of those who apprenticed in Other Construction Trades did their training in a private institution.

For some trades the majority of training is done in public institutions; for other trades, training is done in private institutions

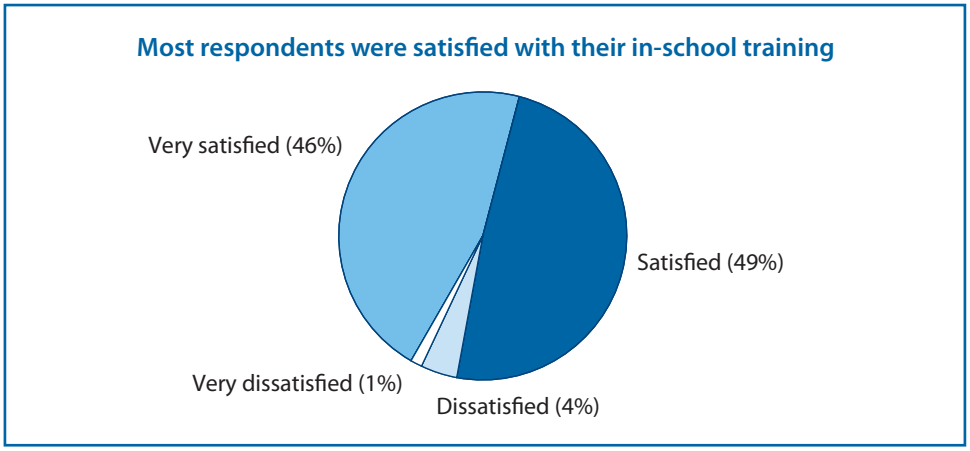
Program groups	Public	Private
Automotive & Other Mechanics	97%	3%
Carpentry	94%	6%
Culinary Arts & Personal Services	84%	16%
Electrician	91%	9%
Industrial & Heavy Duty Mechanics & Repair	87%	13%
Other Construction Trades	20%	80%
Other Trades	38%	62%
Plumbing	40%	60%
Welding & Precision Production	91%	9%
All programs	**81%**	**19%**

In-School Experiences

The 2012 survey included a number of questions intended to help evaluate in-school apprenticeship training. Respondents were asked about the length of training, availability of courses, and to provide ratings of the quality of their instruction, the content of their program, and the opportunities they were given to develop skills.

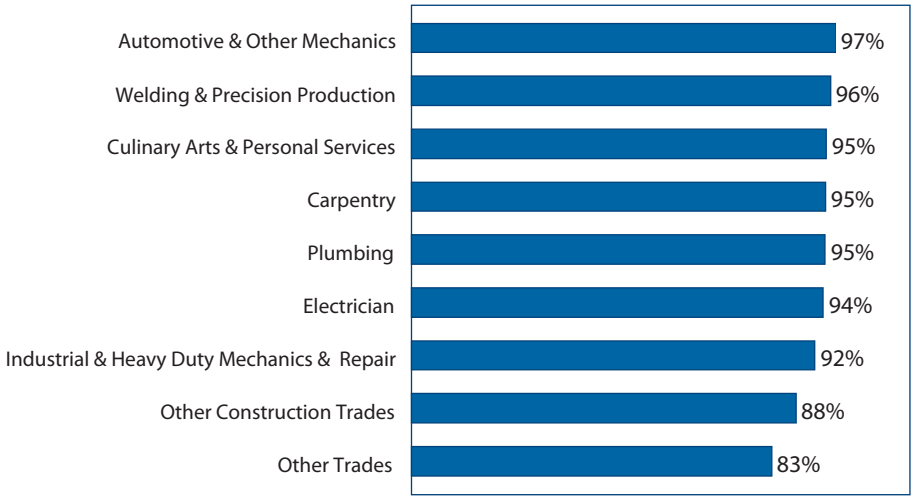
How satisfied were respondents with their in-school training?

Most respondents (95 percent) said they were *very satisfied* or *satisfied* with the in-school education they received as part of their apprenticeship program. Overall satisfaction with in-school training has been consistently high since this survey began in 2005.



Across program groups, the overall satisfaction rating was similar, although there was some moderate variation.

Most respondents from each program groups gave a rating of *very satisfied* or *satisfied* to their in-school training



Did in-school training provide opportunities to develop skills?

Respondents rated the extent to which their in-school training provided them with opportunities to develop a number of analytical and personal skills. If a particular skill was not relevant to their training, it was marked *not applicable*. Over 80 percent of respondents said their training did v*ery well* or *well* helping them develop a number of important employability skills, such as *use mathematics appropriately, work effectively with others,* and *use tools and equipment.*

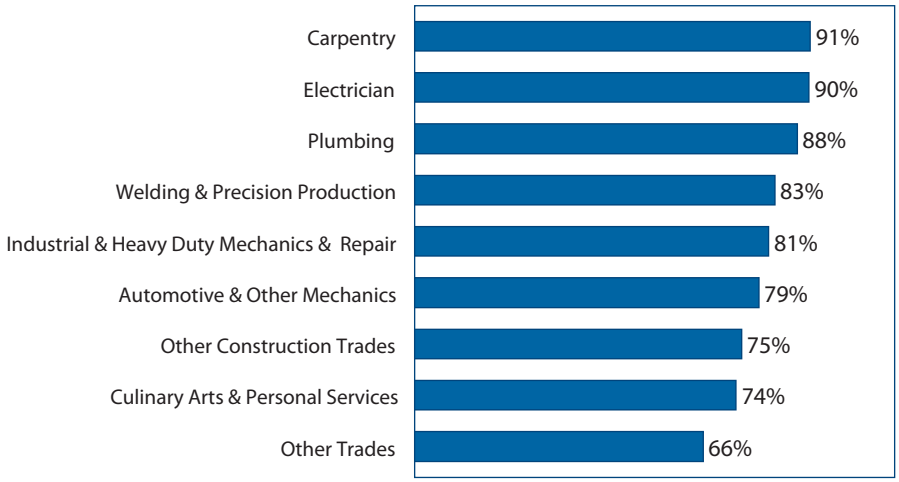
Apprenticeship programs helped students develop skills

Skill	Very well or well	Not applicable
Use mathematics appropriately	84%	4%
Work effectively with others	83%	9%
Use tools and equipment	83%	1%
Analyse and think critically	83%	4%
Learn on your own	83%	3%
Read and comprehend appropriate material	82%	4%
Resolve issues or problems	78%	6%
Write clearly and concisely	74%	41%
Speak effectively	74%	44%

Note: The percentage of very well or well was calculated excluding those who said not applicable; therefore, the two columns added together may exceed 100%.

Respondents from different program areas gave different ratings for their skill development. Taking *use mathematics appropriately* as an example, 91 percent of former Carpentry students said their program helped them develop the skill, compared with 74 percent of respondents from Culinary Arts & Personal Services.

Respondents' ratings of how well their training helped them develop the skill to *use mathematics* varied by program



Note: The percentages are of those who said *very well* or *well*, calculated excluding those who said *not applicable.*

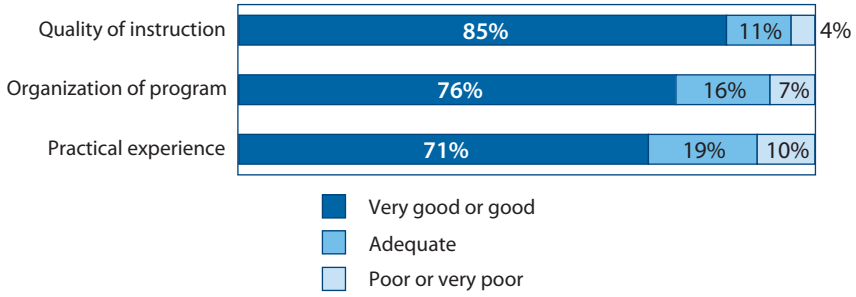
For a detailed list of skills ratings by program groups and some individual programs, see Appendix E: Ratings of In-School Training by Program, under "How well did in-school training help former students develop skills?"

How did respondents rate the quality of their in-school training?

Former students were asked to rate certain aspects of their in-school training using a 5-point scale: *very good, good, adequate, poor,* or *very poor*. They were instructed to identify any items they thought did not apply to their studies, although virtually all respondents thought the items mentioned applied to their studies.

Respondents gave particularly high ratings to the quality of instruction. They also provided favourable ratings to the organization of the program and the amount of practical experience during the in-school portion of the training.

The majority of respondents gave high ratings to the *quality of instruction*

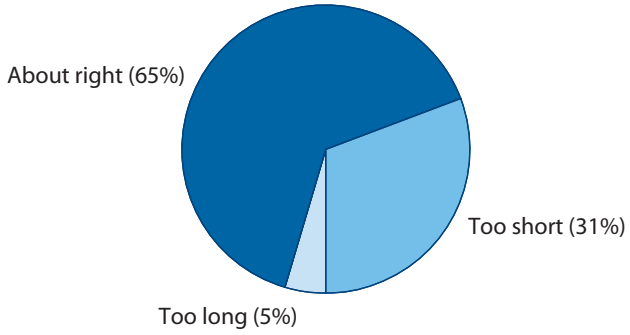


Note: The percentages are calculated excluding those who said *not applicable.*

Respondents' ratings of the quality of various aspects of in-school training have not varied much over time, although compared with earlier survey results, the ratings have been a little higher in the last three years. Differences between years since 2010 have been negligible. However, ratings did vary by apprenticeship program group. Please see Appendix E: Ratings of In-School Training by Program, under "How did respondents rate aspects of in-school training?"

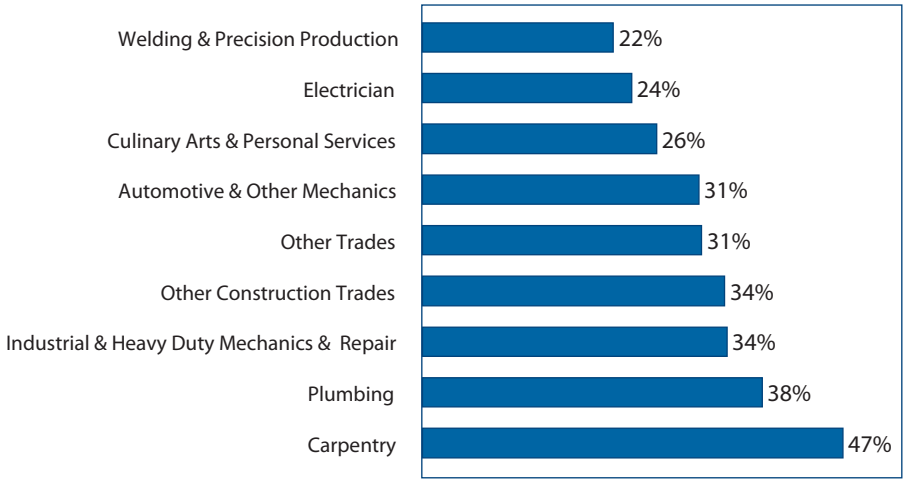
When asked about the length of their training, almost two-thirds (65 percent) of respondents said the length of their program was about right to cover the material taught. A significant proportion of respondents felt that the courses were too short; very few said they were too long.[5]

A majority of respondents said the length of their program was about right



Overall, just under one-third of respondents thought their program did not give them enough time to cover the material adequately; however, by program group, this percentage varied from 22 percent of Welding & Precision Production respondents to 47 percent of Carpentry respondents.

A number of respondents said their program was too short

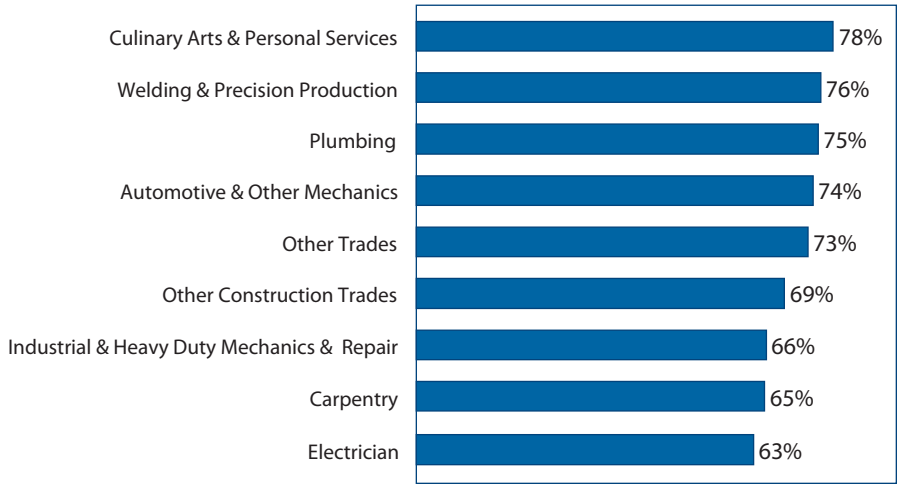


5 For details, please see Appendix E: Ratings of In-School Training by Program, under "How did respondents rate the length of in-school training?"

The former students surveyed were also asked to rate the availability of their technical training courses throughout their apprenticeship. The scale used was 5-points, from *very good* to *very poor*. Overall, a majority of 71 percent said the *availability of courses* was *very good* or *good*; another 21 percent said it was *adequate*. This finding is a slight improvement over the 2011 results, where 67 percent of respondents said the availability of courses was *very good* or *good*.

By program group, *availability* varied from 78 percent to 63 percent of respondents who said it was *very good* or *good*.

The percentage of respondents who gave high ratings for *availability of technical training courses* varied by program group

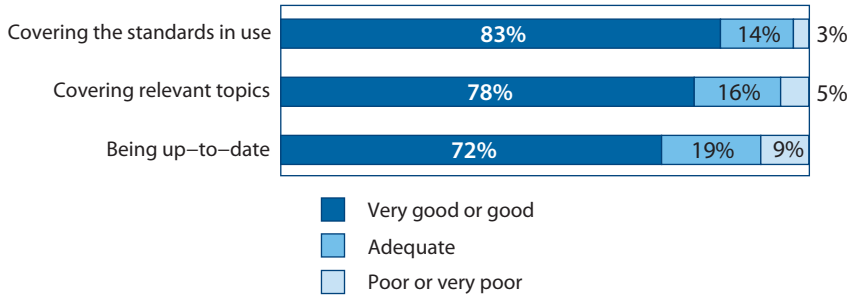


Note: Percentages are calculated excluding those who said *not applicable*.

How did respondents rate the content of their in-school training?

Former apprenticeship students were asked to rate the content of their in-school training in the following areas: *covering the standards being used in their fields*, *covering the topics most relevant to their fields*, and *being up-to-date*. These areas were rated on a 5-point scale, from *very good* to *very poor*. In each case, a majority of respondents gave either a *very good* or *good* rating.

The majority of respondents rated the content of their training *very good* or *good*



Note: Percentages were calculated excluding those who said *not applicable.*

Ratings of the content areas have not varied much over the years the APPSO survey has been collecting data, although in 2010, they went up slightly, and have been similar since. The results vary somewhat by program group, although in each case a majority of respondents gave ratings of *very good* or *good*. The ratings for certain programs showed more variability—please see Appendix E: Ratings of In-School Training by Program, under "How did respondents rate the content of the program's in-school training?" for details.

How could in-school training be improved?

The former apprentices surveyed were asked how the training in their programs could be improved. Most respondents (90 percent) answered the question, and of those who provided a response, 28 percent said the program was fine or needed no improvement. Many of the respondents who made suggestions for improvement commented on more than one topic.

At least 20 percent of those who made a suggestion noted that they felt their in-school program should be longer. Their comments were consistent, although there was some overlap with requests for more practical or hands-on experience.

The program should be longer, maybe eight weeks, to allow more time to get through all the material.

The course could have been a week or two longer.

Lengthen the program and add more practical experience because the field environment is very different than school.

... An extra week in class and a week in the shop would have been good.

More time for the whole program, perhaps a week added to each level.

There needs to be more time at the end to get the practical material done.

Approximately 18 percent of the responses focussed on requests for more hands-on or practical experience. Many respondents preferred a practical, rather than theoretical, approach to the material.

The program should have more hands-on class time or lab time.

More practical and not as much theory would be an improvement.

More hands-on practice would help. Seeing work in the field at job sites would be beneficial as well.

Add more practical and hands-on training, and troubleshooting lessons.

More hands-on learning with equipment and more real life scenarios should be included.

About 15 percent of those who commented had suggestions to improve the teaching of the program. A large number of the comments were that the instructors should be more available to help individual students. Many thought greater consistency in teaching would help; others noted that instructors needed more real-world experience or up-to-date knowledge.

The instructors are too inconsistent; some were great, others were awful.

Ensure that instructors are willing to help students and are available to do so.

More one-on-one time with the teacher and smaller class sizes would improve the program.

Teachers should have more up-to-date knowledge and computer skills.

... The instructors are far removed from the actual trade.

There were quite a few comments about tools and equipment—approximately 11 percent of the responses. Some respondents noted that the program would be better if there were more tools available and more time was spent with the equipment, but most focussed on the need for more up-to-date tools and equipment.

They need more tools. Currently the students have to wait to use the tools, especially the bigger tools.

The program needs to get more up-to-date equipment in the labs.

Update the tools and maintain current practices to stay relevant to the industry....

Newer equipment to use in the practical part of the program would improve the training.

... We learned about obsolete tools and methods of building that were outdated.

About 9 percent of the responses mentioned the certification exam; most suggesting students could be better prepared for it and should be told more about what would be on it.

The program could have a better curriculum in third and fourth year to prepare students for the IP exam....

The teachers should be knowledgeable about what is on the IP exam....

The course could include more of the information needed for the IP exam.

A more well-rounded review and a better summary of everything would help students before writing their Interprovincial exam.

We need more practice exams on the IP before the actual exam.

How many respondents received certification?

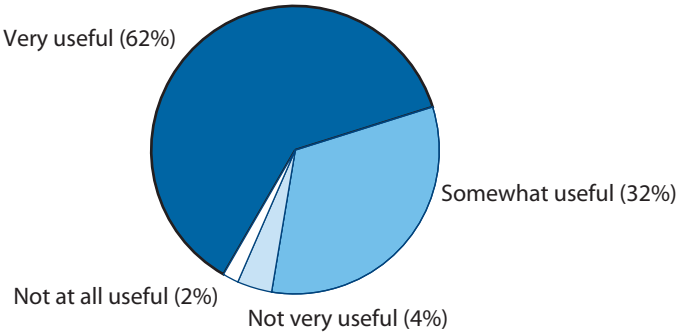
Three-quarters (76 percent) of the respondents said they received their British Columbia Certificate of Qualification (C of Q)—many with Interprovincial or Red Seal endorsement.[6] To receive certification, apprentices must successfully complete a number of work-based training hours, complete or successfully challenge all required levels of technical training, pass examinations, and be recommended for certification by their employer-sponsors (also referred to as employer sign-off).

The results varied by program group: for example, 85 percent of former Plumbing students were certified, compared with 65 percent of those from Welding & Precision Production programs. Please see Appendix F: Qualification or Certification by Program.

All respondents were asked how useful the knowledge and skills they gained from in-school training were in preparing to write their certification examinations. Approximately 5 percent of respondents said the question was *not applicable,* but of those who responded, most (94 percent) agreed that what they gained from their training was *very useful* or *somewhat useful* to them in preparing to write the certification exam.

6 In 2011, virtually the same percentage (75 percent) of respondents said they had received certification. In 2010, however, 83 percent of respondents said they had received certification—the drop to 75 percent in 2011 cannot be explained by the addition of the cook and welder programs that were previously surveyed in DACSO. Controlling for the addition of those programs still resulted in a significant drop, from 84 to 78 percent. The decline might be related to labour market conditions that make it difficult for apprentices to complete required work-based training hours.

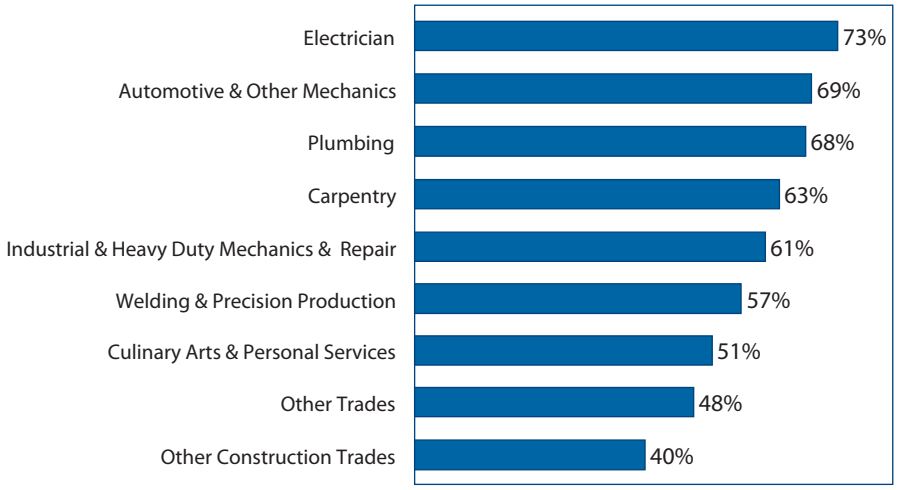
Most respondents said the knowledge and skills they gained in their program were useful in preparing to write the certification exam



Note: Percentages were calculated excluding those who said *not applicable.*

Overall, almost two-thirds (62 percent) of respondents said the knowledge and skills they gained were *very useful* to them. This percentage varied considerably across program groups, from 73 percent of former Electrician students to 40 percent of those from Other Construction Trades. For more details, please see Appendix G: Usefulness of In-School Training by Program, under "How useful were the knowledge and skills gained in the program in preparing for the certification exam?"

For most program groups, a majority of respondents said the knowledge and skills they gained were *very useful* in preparing to write the certification exams



Note: Percentages were calculated excluding those who said *not applicable.*

Workplace Experiences

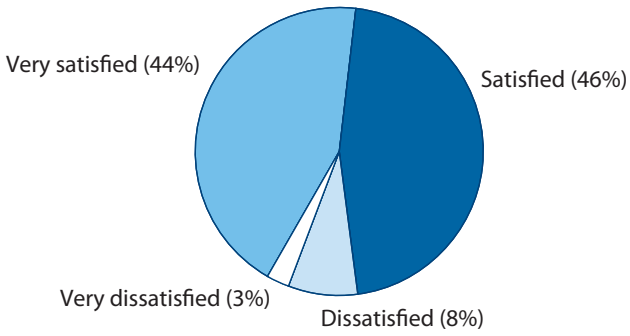
Respondents to the 2012 APPSO Survey were asked if their program included workplace training outside their institution, either through a work placement or employment as an apprentice. The respondents who said *yes* were asked about their on-the-job experiences: first, to provide a rating of their overall satisfaction with their workplace experience; second, to say how related their workplace experience was to their in-school training; and finally, to make suggestions to improve the workplace experience.

Just under half (47 percent) of respondents said they had workplace experiences outside of the institution where they took their training. The majority (71 percent) of the respondents who did not have workplace training outside the institution were from the programs that were previously surveyed in DACSO. Workplace participation rates varied considerably by program group—please see Appendix H: Evaluation of Workplace Experience, under "Did program include workplace training outside the institution, either though a work placement or employment as an apprentice?"

How satisfied were respondents with their workplace training?

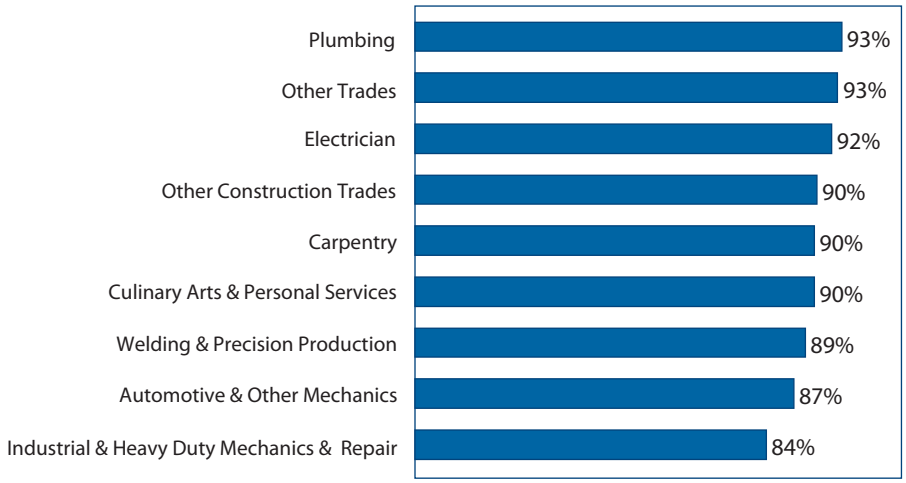
Most survey respondents (90 percent) said they were *very satisfied* or *satisfied* with their overall workplace training experience. This finding is similar to that of 2011, except the percentage of respondents saying they were ***very*** *satisfied* increased from 35 to 44 percent.

Most respondents were satisfied with their workplace training



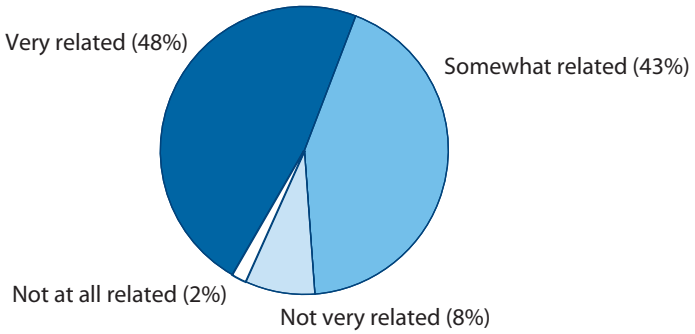
Satisfaction levels across program groups were similarly high, although there was some moderate variation.

Most respondents from each program groups gave a rating of *very satisfied* or *satisfied* to their workplace training



Most (90 percent) of the former apprenticeship students surveyed said their in-school technical training was related—*very related* or *somewhat related*—to their workplace experience. Very few said their in-school and workplace training were completely unrelated.

Most former students said their workplace experience was related to their in-school training



The proportion of respondents who said their in-school training was *very related* or *somewhat related* to their workplace experience was consistently high across all program areas, ranging from 98 percent (Other Trades) to 86 percent (Electrician). There was more variation in the percentages of those who said the training was *very related*—please see Appendix H: Evaluation of Workplace Experience, under "How related was in-school training to the workplace experience?"

How could workplace experiences be improved?

The 47 percent of respondents who answered yes to the question, "Did your program include workplace training outside your institutions, either through a work placement or employment as an apprentice," were asked to make suggestions to improve the workplace experiences for apprentices. Of those who responded to the question, 55 percent said everything was fine or no improvement was required. Of the comments that were recorded, over one-quarter (26 percent) focussed on the need for more training time with employers or journeymen and for better training.

... Apprenticeship should have more one-on-one experience with a journeyman.

The experience could be improved by more specific training.

There should be more skilled certified carpenters teaching the apprentices.

There should be better guidelines for what the employer should be teaching the employee.

It would be a good idea for some journeymen to receive training on how to train an apprentice and to be designated as the mentor.

In about 12 percent of the responses, former apprentices were concerned with practical or hands-on training, and suggested there needed to be more.

I think that we should have been shown more practical experience on the job.

Field trips out to other shops to see what it's all about would have helped.

There should have been more hands-on training.

They could have included more practical jobs, not just the odd jobs.

More practical experience would be an improvement.

Approximately 10 percent of the comments said the workplace experience should have more variety or a wider range of experience.

There should be more variation in training, more diversity of experience.

Improve the work experience by providing a wider variety of experience.

You could do different types of jobs to get a broader range of experience.

The workplace experience could be improved with more variety in the work duties.

Employment

Former apprenticeship students were asked a number of questions to determine their labour force status. Employed respondents were asked about their occupation, hours of work, earnings, and the relation of their current employment to their apprenticeship training.

What was the labour force participation of respondents?

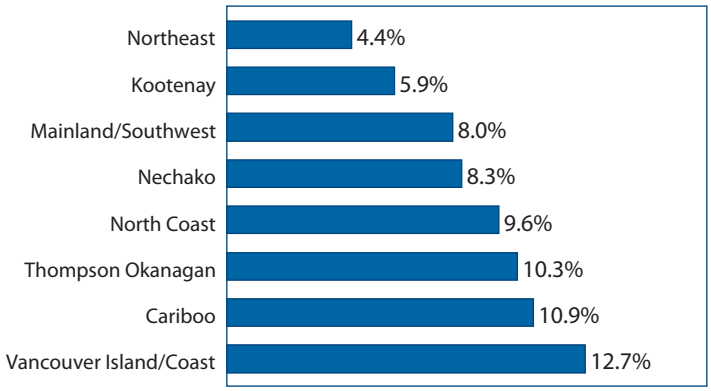
Almost all (96 percent) of the former students surveyed were in the labour force; that is, employed or looking for work. In comparison, the labour force participation rate (unadjusted) for the B.C. population aged 20 to 54 was 83 percent in March of 2012.[7]

The labour force participation rate was consistently high across the program groups, ranging from 93 percent for Culinary Arts & Personal Services to 100 percent for Industrial & Heavy Duty Mechanics & Repair.

The unemployment rate—the number unemployed as a percentage of respondents in the labour force—was 9.1 percent. This rate is down somewhat from the rate of 2011 respondents (10.9 percent). The unemployment rate varied significantly by program group, ranging from 2.8 to 13.2 percent. Please see Appendix I: Labour Market Outcomes, under "What were the labour force participation and unemployment rates?"

The unemployment rate also varied by region, ranging from a low of 4.4 percent in the Northeast region to 12.7 percent in the Vancouver Island/Coast region.[8]

The unemployment rate of respondents varied by region



Note: The unemployment rate is the number of unemployed as a percentage of respondents in the labour force. Regions shown are the B.C. Development Regions. Coding into regions is based on respondents' postal codes at the time of the survey.

7 Source: Statistics Canada, Labour Force Survey, 2012.

8 The regions are the B.C. Development Regions, described here: http://www.bcstats.gov.bc.ca/StatisticsBySubject/Geography/ReferenceMaps/DRs.aspx.

What were respondents' employment outcomes?

At the time of the survey, 87 percent of survey respondents were employed at a job or business. In approximately the same time period, March 2012, the employment rate (unadjusted) for the B.C. population aged 20 to 54 was 77 percent.[9]

Most employed respondents had only one job and it was probably a permanent, full-time position rather than a part-time or temporary one. Likewise, most respondents were employed by someone else rather than being self-employed (6 percent were self-employed).

Most employed respondents had a full-time, permanent position with an employer

Note: Percentages above are based on employed respondents.

The employed former apprenticeship students were asked if they had done any work placements with their current employer: 47 percent said yes. This percentage has been dropping since 2009. The addition of former students from cook and welding programs, which were included in the DACSO survey before 2010, accounted for part of this drop, since those respondents were much less likely to have done a work placement with their current employer. However, even when the respondents from the moved programs are discounted, the decline remains significant. Of respondents who were in programs that have always been surveyed in APPSO, 64 percent of 2011 survey respondents had done a work placement with their current employer, and by the 2012 survey, that number declined to 53 percent.

The respondents who did not do a work placement with their current employer were asked how long they took to find their employment. Almost all (95 percent) found a job within six months. Including those who had a work placement with their current employer, 80 percent of employed respondents were either continuing in their job or found a job within one month; after six months, 97 percent of employed respondents had found their jobs.

Employment rates differed by region, varying somewhat across the province. Most respondents to the APPSO Survey are located in B.C., and while attempts were made to survey former apprenticeship students who have left the province, it was more difficult to locate those who had moved to other provinces or out of the country. Based on valid postal codes, 95 percent of 2012 respondents were in B.C. and about 2 percent were in other Canadian provinces at the time of the survey.[10] The employment rate of these out-of-B.C. respondents was 91 percent.[11]

9 Source: Statistics Canada, Labour Force Survey, 2012.

10 The location of 3 percent of respondents was unknown.

11 Interpret this result with caution; the number is low and the respondents may not be representative of other former apprentices who left the province.

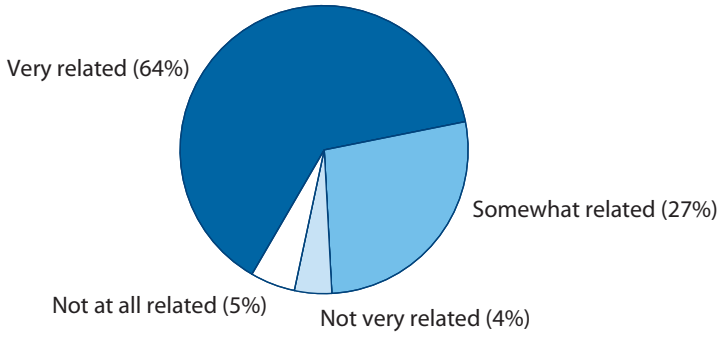
Respondents' employment rates varied somewhat by region

Note: The B.C. regions shown are aggregated from the B.C. Development Regions. Coding into regions is based on respondents' postal codes at the time of the survey. Only 2 percent of respondents were in other Canadian provinces at the time of the survey.

How related were respondents' jobs to their in-school training?

Employed respondents were asked to judge the extent to which their job was related to the in-school training they took. If they had more than one job,[12] they were asked to think about their main job; the one at which they worked the most hours. The correlation between respondents' training and their employment is quite high—91 percent of those who answered the question said their employment was *very related* or *somewhat related* to their in-school training. This overall percentage has not changed from the 2011 survey finding; however, the percentage of those who said *very related* has increased from 61 to 64 percent.

Most employed respondents said their current job was related to their apprenticeship training

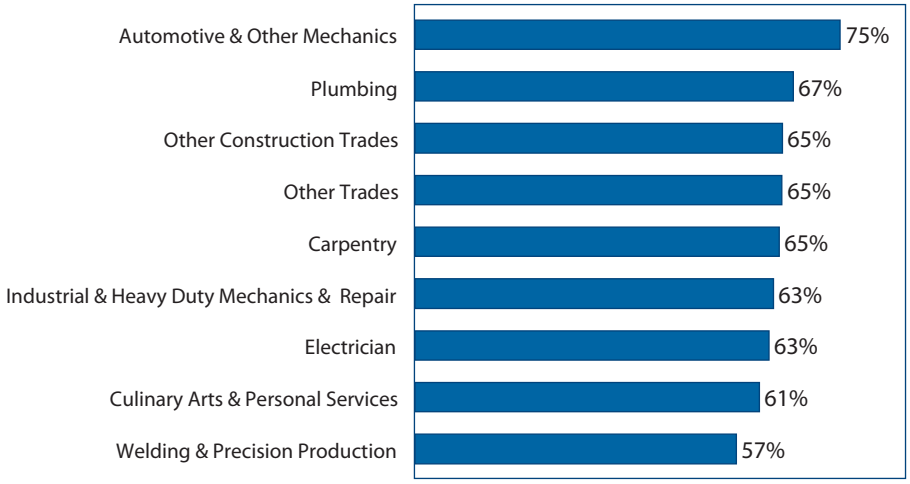


Note: Percentages above are based on employed respondents.

The percentage of employed respondents who said their jobs were *very related* to their training varied across program group, ranging from 57 percent for former Welding & Precision Production students to 75 percent for Automotive & Other Mechanics.

12 Approximately 7 percent of employed respondents had two jobs, and only 1 percent had three or more jobs.

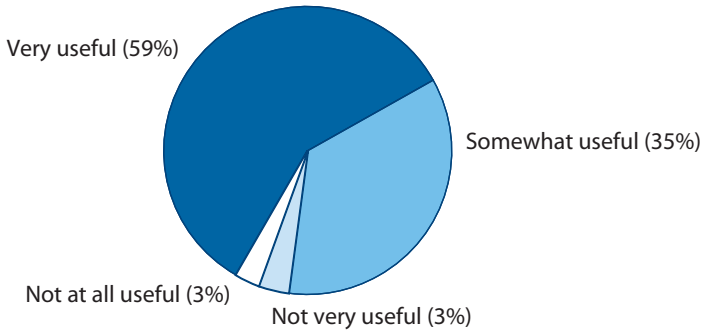
For each program group, a majority of respondents said their job was *very related* to their in-school training



Note: Percentages above are based on employed respondents.

Former students were also asked to say how useful the knowledge and skills they gained through their studies had been in performing their job. Again, a very large majority (94 percent) of respondents said they had been *very* or *somewhat useful*: 59 percent said *very useful* and 35 percent said *somewhat useful*.

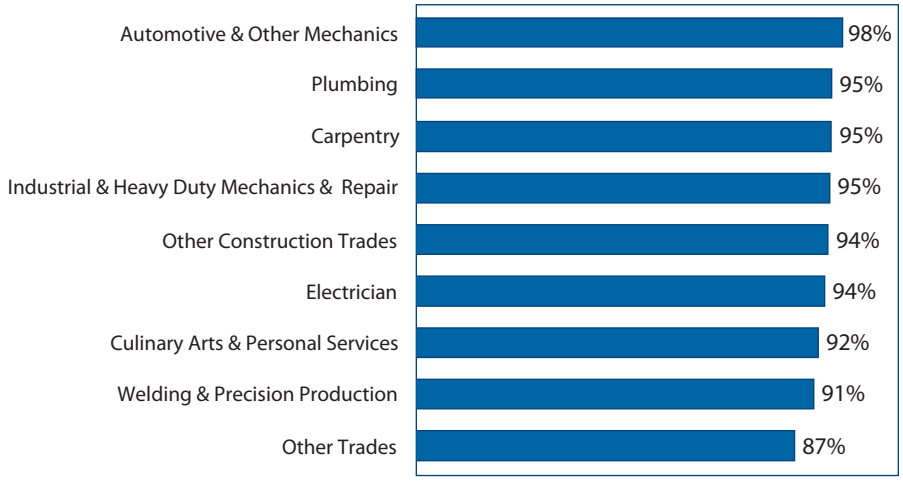
Respondents said the knowledge and skills they gained were useful performing their job



Note: Percentages above are based on employed respondents.

The ratings across apprenticeship program groups were consistently high—from 87 to 98 percent of respondents from each group said the knowledge and skills they gained were useful for their employment. (For detailed results by program group see Appendix G: Usefulness of In-School Training by Program, under "How useful were the knowledge and skills gained in the program for performing your job?)

For most program groups, almost all respondents said the knowledge and skills they gained were *very useful* or *useful* for performing their job



Note: Percentages above are based on employed respondents.

What occupations did respondents have?

A substantial majority—81 percent—of the employed respondents were working in Trades, Transport, and Equipment Operators and Related Occupations.[13] The remainder of the respondents were spread thinly across all the other occupational categories, although 13 percent were in Sales and Service Occupations.[14]

There is a good correlation between former students' apprenticeship programs and their subsequent occupations. For example, of the respondents who apprenticed in the program group of Electrician, 85 percent were employed in Electrical Trades & Telecommunications Occupations.[15] (For detailed results see Appendix J: Common Occupations by Program Group.)

What was the wage of respondents employed at the time of the survey?

The employed former apprenticeship students were asked to report their gross salary or wage before deductions. If they had more than one job, they were asked to report the wage from their main job, the one at which they worked the most hours. Respondents could report their wages by whatever time period they wished (hour, day, week, and so on); an *hourly* wage was derived from the information provided and confirmed by the respondent during the interview.

13 The National Occupational Classification (NOC) system, which is a taxonomy of occupations in the Canadian labour market, was used to assign codes (4-digit codes) to the occupations former students had at the time of the survey. The codes and their associated names are used to describe occupations and to aggregate them into occupational categories. The grouping of occupations called "Trades, Transport, and Equipment Operators and Related Occupations" is at the highest or most aggregated level (1-digit). The respondents who had more than one job were asked to describe their main job.

14 The majority of respondents who were employed in Sales and Service Occupations were from Culinary Arts programs.

15 This grouping of occupations is at the 3-digit NOC level.

At the time of the survey, the median hourly wage of employed respondents was $28. Until 2010, the median hourly wage among former apprenticeship students had increased steadily since the 2005 survey—wage figures in previous years were: $24 (2005), $25 (2006), $27 (2007), $28 (2008), $29 (2009 and 2010) and $27 (2011).[16] The 2012 wage is slightly higher than the 2011 median. As there was in the 2011 results, there is some evidence to suggest that the overall wage is lower than it would have been without the addition of the programs that were moved from DACSO.

The hourly wage varies across the different trades occupations. Among the 10 most common occupations for 2012 respondents, the median hourly wage ranges from a high of $35 for Machinery & Transportation Equipment Mechanics to $14 for Chefs & Cooks.

Hourly wage varies significantly by occupation

Occupation	Respondents	Hourly wage
Electrical Trades & Telecommunications	456	$31
Metal Forming, Shaping & Erecting	400	$27
Carpenters & Cabinetmakers	301	$26
Machinery & Transportation Equipment Mechanics	266	$35
Plumbers, Pipefitters & Gas Fitters	260	$28
Chefs & Cooks	248	$14
Motor Vehicle Mechanics	227	$27
Contractors & Supervisors, Trades & Related	187	$30
Other Construction Trades	65	$27
Masonry & Plastering Trades	27	$25

Note: The wages above are medians; the occupation groups are at the NOC 3-digit level.
The occupations shown are the top ten, accounting for 84 percent of employed respondents.

16 These median wage amounts have not been adjusted for inflation.

Conclusion

Apprenticeship training has a long history in British Columbia and is more important today than ever. The provincial bodies responsible for apprenticeship have worked to develop an effective model for training a new generation of skilled workers, who will be needed to meet projected labour market shortages. The Apprenticeship Student Outcomes (APPSO) Survey provides crucial information on former apprenticeship students, which is used for policy and program development and accountability purposes.

The 2012 APPSO Survey collected information from former apprenticeship students who trained in one of the over 200 courses offered by public or private institutions. While the majority studied in a public post-secondary institution, approximately one-fifth of respondents were from private training institutions.

The percentage of female respondents to the survey has more than doubled since 2005. The addition of former apprenticeship students from shorter-term cook and welder programs has contributed significantly to the increase. However, the percentage of female respondents is still low and the typical former apprentice is a male who trained in a construction trade.

Well over half of the survey respondents had previous post-secondary education; many already had a trades qualification or credential. Almost one-third had taken pre-apprenticeship or industry foundation training.

Since 2005, respondents to the APPSO survey have reported high levels of overall satisfaction with their in-school training. Almost all of the former apprenticeship students surveyed in 2012 said they were *very satisfied* or *satisfied*. They also gave positive ratings to many aspects of their in-school training. In particular, they said their training helped them develop skills, such as the abilities to *use mathematics appropriately, work effectively with others,* and *use tools and equipment.* These skills are especially valuable for employment in trades occupations.

As they have in previous years, respondents gave high ratings to the *quality of instruction.* They also provided favourable ratings to the *organization of the program* and the *amount of practical experience during the in-school portion of the training.* Likewise, respondents were likely to say the content of their training (*covering the standards being used in their fields*, *covering the topics most relevant to their fields*, and *being up-to-date*) was *very good* or *good*. A majority of respondents gave those same ratings to the availability of technical training courses throughout their apprenticeship—the 2012 rating was somewhat improved over the 2011 result.

The majority of former apprenticeship students said the length of their in-school program was adequate, although almost one-third said it was too short. The percentage saying the program was too short has been consistent over the last few years, but does vary considerably by program group, with former Carpentry students being the most likely in 2012 to say their in-school training was too short.

Many respondents offered suggestions to improve the in-school training. A large number of comments focussed on the need for more time to cover the material, supporting the finding that a significant number of respondents thought the program was too short. Other comments noted that more time should be spent on practical or hands-on training. In spite of the high ratings given to the quality of instruction, there were a number of suggestions to improve teaching; many respondents noted there were problems due to inconsistency of instruction or lack of availability of teachers for one-on-one training.

When asked directly to rate the content of their program with regard to being up-to-date, the majority of respondents were positive; however this item got a lower rating than other items did. A number of the verbatim comments supported the notion that tools and equipment needed to be updated.

By the time they were surveyed, three-quarters of respondents had achieved their certificate of qualification. Whether they had their certificate or not, most respondents agreed that what they gained from their training was *very useful* or *somewhat useful* in preparing to write the certification exam.

Fewer than half of the respondents to the 2012 survey said they worked outside their training institution, either through a work placement or employment as an apprentice. The addition of programs like the short-term cook and welder programs has had an impact—the majority of those who did not work outside the institution were from the programs that were previously surveyed in DACSO.

Most of the former apprenticeship students surveyed were satisfied with their workplace experience and said their in-school technical training was *very related* or *somewhat related* to their workplace experience. Over half of the respondents said their workplace experience had been fine and needed no improvements; others made suggestions to improve the experience: more and better training from journeymen or employers, more hands-on or practical training, and more variety of tasks.

The labour force participation rate of the former apprentices surveyed in 2012 was high—as it has been every year since 2005. The unemployment rate was down a little from the level reported in 2011. Across the province rates varied considerably, but compared with 2011, each of the B.C. Development Regions showed improvement.

For respondents who were working at the time of the survey, the conditions of their employment were good: most had one job only and it was a permanent, full-time position. A large proportion of those working were still employed with their workplace training employer—this proportion, however, has been dropping since 2009. The addition of former students from shorter-term cook and welding programs, who were not likely to have done a work placement with their employer, accounted for part of this drop.

Most respondents said their job was related to their apprenticeship training. Further, they said the knowledge and skills they gained through their training were useful to them in the performance of their jobs. There was a good correlation between respondents' apprenticeship training and their occupations at the time of the survey, and the average wage by occupation showed some improvements over 2011 results.

The former apprenticeship students surveyed in 2012 gave consistently high ratings of their in-school and workplace training, and their labour force participation and employment rates were above the B.C. averages. These positive outcomes are good for those who have completed their apprenticeships and good for the future of trades in the province.

Appendices

Appendix A: Apprenticeship Survey Methodology

Cohort

The survey cohort included all apprenticeship students who *completed the final year of their apprenticeship programs* at a participating B.C. post-secondary institution. The following criteria were used to define the survey cohort: all apprenticeship students who completed the final year of their apprenticeship programs between July 1, 2010 and June 30, 2011 at a B.C. public post-secondary institution or at a B.C. private training institution.

Since apprenticeship students may take different parts of their apprenticeship programs at different institutions, the *last* institution that the student attended was considered the institution of record and that institution was asked to submit the name in their cohort file. The cohort extract included elements such as name, address, telephone number, program description, gender, birth date, program start date, and completion date.

There were 37 B.C. post-secondary institutions that participated in this project—14 of them were public. These public institutions provided 81 percent of the cohort. The cohort of students from private institutions was provided by the Industry Training Authority. The following tables list the participating institutions, the number of former apprentices from each who were eligible for the survey, the number who responded to the survey, and the response rate.

Participating public institutions

Public Institutions	Eligible for Survey	Respondents	Response Rate
British Columbia Institute of Technology	1569	838	53%
Camosun College	485	272	56%
College of New Caledonia	415	235	57%
College of the Rockies	146	85	58%
Kwantlen Polytechnic University	329	189	57%
North Island College	152	74	49%
Northern Lights College	106	65	61%
Northwest Community College	95	56	59%
Okanagan College	826	413	50%
Selkirk College	115	77	67%
Thompson Rivers University	418	233	56%
University of the Fraser Valley	41	20	49%
Vancouver Community College	515	267	52%
Vancouver Island University	317	173	55%
Public Institutions Total	**5,529**	**2,997**	**54%**

Participating private institutions

Private Institutions	Eligible for Survey	Respondents	Response Rate
B.C. Floor Covering Joint Conference Society	17	10	59%
B.C. Wall & Ceiling Association - Surrey	30	18	60%
Broadband Institute (Yulescape)	10	8	80%
Christian Labour Association of Canada	13	7	54%
Discovery Community College	78	31	40%
Electrical Industry Training Institute	90	63	70%
Enform Canada	19	10	53%
Funeral Service Association of BC	16	12	75%
IUOE Local 115 Training Association	28	15	54%
Joint Apprentice Refrigeration Trade School	60	38	63%
Northwest Culinary Academy of Vancouver Inc.	65	40	62%
Pacific Vocational College	308	183	59%
Piledrivers, Divers, Bridge, Dock, Loc. 2404	17	10	59%
Piping Industry Trade School (PIAB)	132	86	65%
Quadrant Marine Institute	#	#	63%
R.C.A.B.C. Roofing Institute	80	43	54%
Riverside College	#	#	63%
Salvation Army Cascade Culinary Arts School	17	12	71%
Secwepemc Cultural Education Society	#	#	50%
Sheet Metal Workers Training Centre	61	40	66%
The Finishing Trades Institute of BC	58	33	57%
Trowel Trades Training Association	39	20	51%
White Spot Ltd.	27	13	48%
Private Institutions Total	**1,185**	**704**	**59%**

Note: Low numbers are masked, to preserve confidentiality.

The cohort extracts were assembled and reviewed for completeness and then passed to the survey contractor for data collection.

Data collection

Field testing of the survey instrument was done January 5 to January 6, 2012, using a sub-sample of the available cohort—81 former students were surveyed. The data collection contractor noted some references that could cause confusion with a few respondents and recommended a minor wording change to three questions, to improve consistency.

The data collection contractor undertook a number of steps to contact former students, including:

- Sending personalized emails to all email addresses and re-mailing periodically to non-respondents
- For records with multiple phone numbers, calling all numbers to determine the correct number
- Leaving a voice mail and toll-free number for the former students to call at their convenience
- Using a number of directories to trace former students whose phone numbers were missing or incorrect
- Asking for a forwarding number, where possible
- Sending emails with the toll-free number, where possible

The survey was conducted from January 13 to April 17, 2012. The average administration time of the telephone survey was 13.5 minutes. This was the second year that an online survey option was offered, and of the 3,701 survey completions, 818 were done online. The online response rate was 12 percent; the telephone rate was 43 percent—the overall response rate was 55 percent.

The following table shows the disposition of the survey cohort that was submitted for data collection.

Final dispositions, 2012 Apprenticeship Student Outcomes Survey

Call Result	Number	% of Cohort
Telephone Survey Completion	2,883	43%
Online Survey Completion	818	12%
Non-Qualifiers (e.g. did not attend during cohort time)	107	2%
Non-Qualifier (Still in Same Program)	18	0%
No Phone Number/Incomplete Number	75	1%
Not in Service/Wrong Number	634	9%
Business (Not Employed There)	14	0%
DA Searched, new leads unconfirmed	177	3%
DA Searched, all new leads incorrect	274	4%
Fax/Modem Line/Busy signal/No answer	48	1%
Left Message/Call Again	848	13%
Respondent Wants to Do Online	144	2%
Respondent Refusal	324	5%
Second Respondent Refusal	129	2%
Incomplete Survey (Won't Continue)	9	0%
Soft Appointment	97	1%
Hard Appointment	14	0%
Moved/Left Toll-Free Number	21	0%
Travel/Moved out of Canada/US	42	1%
Travel Within Canada/US	23	0%
Problem Communicating/Language Case	13	0%
Deceased/Serious Illness/Incapable/In Prison/Shelter	2	0%
Total all records	**6,714**	**100%**

Analysis and Reporting

BC Stats was responsible for cleaning and validating the data received from the data collection contractor. Based on these data—the responses to the survey questionnaire—the necessary variables were derived for analysis and reporting. Data from the 2012 survey were first released through the web-based Student Outcomes Reporting System (SORS) on June 25, 2012. Apprenticeship SORS provides access to eight years of APPSO Survey data in a variety of formats. The public version of Apprenticeship SORS—available on the student outcomes website under "Search BC Post-Secondary Student Survey Results"—was released at the same time and provides information for the general public in report form. The most recent three years of data are combined to produce reports at the individual trade or program level.

Analysis for this report included frequencies, crosstabs, and comparison of means; in addition, statistical tests were used to determine if the observed differences between groups were statistically significant. A statistically significant result is one that cannot reasonably be explained by chance alone.

Limitations

The former students who were interviewed—55 percent of those eligible for surveying—were those from the cohort who could be located and who agreed to be surveyed. They may not be representative of all former students.

Percentages

For consistency and ease of presentation, most percentages in the report text, tables, and charts have been rounded and may not always add to 100.

Unless otherwise noted, each percentage is based on the number of students who gave a valid response to the question—those who refused the question, or said *don't know*, were not included in the calculation.

Appendix B: Trades Programs Moved from DACSO to APPSO

In 2010, there was a change to the cohort selection criteria that had an impact on a few of the APPSO program groups that are analysed in the report. In 2010, the program areas including cook and welding programs were affected. For the 2011 survey cycle, the cohort selection criteria were expanded somewhat and the resulting cohort that was moved from the Diploma, Associate Degree, and Certificate Student Outcomes (DACSO) Survey was larger than that of the previous year and included a few former carpentry students, from Residential Construction programs. The selection criteria used in 2012 were the same as those used in 2011; the resulting cohort from the programs that were moved from DACSO to APPSO was similar to that of 2011, with the addition of a handful of former students from Parts and Warehousing programs.

From the 2012 Apprenticeship Student Outcomes Survey Cohort Submission Instructions:

Apprenticeable Programs:
A number of programs listed on the ITA website now have different levels at which students are eligible to write the Certificate of Qualification (C of Q) exam (e.g., Welding, Cook Training, Parts and Warehousing/Partsperson, Planermill Maintenance Technician). Although these programs may not be delivered like typical apprenticeship programs, they are now designated as apprenticeable by the Industry Training Authority (ITA) and must be included in the APPSO cohort.

There were 807 respondents from programs formerly in DACSO; they were in the apprenticeship program groups of Carpentry, Culinary Arts & Personal Services, Industrial & Heavy Duty Mechanics & Repair, and Welding & Precision Production. The majority of respondents from the groups Culinary Arts & Personal Services and Welding & Precision Production were from programs previously in DACSO. The impact of this cohort change is most noticeable in the demographics of the respondents and in their employment outcomes.

Respondents from the affected program groups

Program group	From programs previously in DACSO		From programs already in APPSO		Total program group	
	n	%	n	%	n	%
Carpentry	33	6%	476	94%	509	100%
Culinary Arts & Personal Services	256	54%	220	46%	476	100%
Industrial & Heavy Duty Mechanics & Repair	23	6%	337	94%	360	100%
Welding & Precision Production	495	63%	294	37%	789	100%

The characteristics of these respondents from programs previously in DACSO were somewhat different than those of traditional apprenticeship students: these respondents were younger on average, more likely to be female and more likely to self-identify as Aboriginal. They tended to give higher ratings; when asked how well their training had helped them develop skills, they were more likely than others to give a *very well* rating. They were also more likely to give high ratings (especially *very good*) to aspects of their programs, such as instruction and program organization.

The differences in measures noted in the previous paragraph are based on the overall results—for each program group, the ratings of those from programs formerly in DACSO are not consistently higher, and in fact, there are only a few cases where the differences in ratings are statistically significant.

Employment outcomes were also impacted by the addition of respondents who would previously have been surveyed in DACSO, although across groups, the differences were not always pronounced. For example, labour force participation was not too different between those from programs previously in DACSO and the other respondents; with the exception of the Carpentry program group, the differences are not statistically significant. The unemployment rates, however, have been affected by the addition of the younger and less experienced respondents, and there are differences by group. Certification rates were different, as well: the respondents from programs previously in DACSO were less likely than other respondents to have achieved their Certificate of Qualification by the time they were surveyed.

Employment Outcomes

Program group	From programs previously in DACSO	From programs previosly in APPSO	Total program group
	%	%	%
Labour force			
* Carpentry	76%	97%	95%
Culinary Arts & Personal Services	93%	92%	93%
Industrial & Heavy Duty Mechanics & Repair	100%	100%	100%
Welding & Precision Production	94%	96%	94%
Unemployment			
* Carpentry	24%	10%	11%
* Culinary Arts & Personal Services	17%	7%	13%
* Industrial & Heavy Duty Mechanics & Repair	13%	3%	4%
* Welding & Precision Production	15%	10%	13%
Certification			
Carpentry	79%	82%	82%
Culinary Arts & Personal Services	59%	67%	63%
* Industrial & Heavy Duty Mechanics & Repair	40%	84%	81%
* Welding & Precision Production	57%	78%	65%

* statistically significant differences between the programs previously in DACSO and those that were already in APPSO

Appendix C: Apprenticeship Program Groups and Institutions' Programs

Institution names and codes

Code	Institution Name
BCFC	B.C. Floor Covering Joint Conference Society
BCIT	British Columbia Institute of Technology
BCWCA	B.C. Wall & Ceiling Association - Surrey
BROAD	Broadband Institute (Yulescape)
CAM	Camosun College
CCAS	Salvation Army Cascade Culinary Arts School
CLAC	Christian Labour Association of Canada
CNC	College of New Caledonia
COTR	College of the Rockies
DCC	Discovery Community College
EITI	Electrical Industry Training Institute
ENFORM	Enform Canada
FSABC	Funeral Service Association of BC
FVAL	University of the Fraser Valley
JARTS	Joint Apprentice Refrigeration Trade School
JTS	The Finishing Trades Institute of BC
KWN	Kwantlen Polytechnic University
NIC	North Island College
NLC	Northern Lights College
NWCAV	Northwest Culinary Academy of Vancouver Inc.
NWCC	Northwest Community College
OETC	IUOE Local 115 Training Association
OKN	Okanagan College
PDBD	Piledrivers, Divers, Bridge, Dock, Loc. 2404
PIPE	Piping Industry Trade School (PIAB)
PVC	Pacific Vocational College
QUADR	Quadrant Marine Institute
RCABC	R.C.A.B.C. Roofing Institute
RIVER	Riverside College
SECWE	Secwepemc Cultural Education Society
SEL	Selkirk College
SMWTC	Sheet Metal Workers Training Centre
TRU	Thompson Rivers University
TTTA	Trowel Trades Training Association
VCC	Vancouver Community College
VIU	Vancouver Island University
WSPOT	White Spot Ltd.

Program Group	Institution		Institution's Program Name	Respondents
Automotive & Other Mechanics				
	BCIT		Aerostructures Apprentice	3
			Automotive Technician Acura/Honda(AHAP) Apprentice	9
			Automotive Technician Apprentice	31
			Automotive Technician GM (ASEP) Apprentice	14
			Commercial Transport Apprentice	27
			Motorcycle Mechanic Apprentice	6
	CAM		Automotive Service Technician - Apprenticeship Training	13
	CNC		Automotive Mechanics IV	11
			Commercial Transport Mechanic - 4th Year	6
	COTR		Automotive Service Technician Apprenticeship Year 4	10
	KWN		Apprentice-Automotive Service	11
	OKN		Apprentice Auto Body	#
			Apprentice Auto Paint/Refinishing	4
			Apprentice Automotive Refinishing Prep Technician	#
			Apprentice Automotive Service Technician	26
			Apprentice Commercial Transport Vehicle Mechanic	5
			Apprentice RV Technician	3
	QUADR		Marine Service Technician Apprenticeship	5
	RIVER		Automotive Service Technician 1 Apprenticeship	5
	TRU		Commercial Transport Vehicle Apprenticeship	17
	VCC		Auto Collision Repair Apprentice Level 3	20
			Auto Paint & Refinishing Apprentice Level 1	12
			Auto Refinishing Prep Apprentice Level 1	7
			Auto Tech Apprentice Level 4	35
			Diesel Commercial Transport Mechanic Apprentice Level 4	17
			Diesel Heavy Duty Mechanics Apprentice Level 4	20
	VIU		Automotive Apprenticeship	11
Carpentry				
	BCIT		Carpentry Apprentice	105
	CAM		Carpenter - Apprenticeship Training	42
	CNC		Carpentry IV	24
			Residential Framing Technician	9
	COTR		Carpentry Apprenticeship Year 4	17
	DCC		Residential Construction Framing Technician Apprenticeship	31
	KWN		Apprentice-Carpentry	38
	NLC		Carpentry Apprentice Level 4	14
		*	Residential Construction Trades Training	5
	NWCC		Carpentry Apprentice - Level 4	15
	OKN		Apprentice Carpentry	81
		*	Residential Construction	28
	SEL		Apprentice Year 4-Carpentry	30
	TRU		Carpentry Apprentice	32
	VIU		Carpentry Apprenticeship	38

Note: Low numbers are masked, to preserve confidentiality.
*Programs previously in DACSO.

Program Group	Institution		Institution's Program Name	Respondents
Culinary Arts & Personal Services				
	CAM		Professional Cook - Apprenticeship Training	22
		*	Professional Cook Foundation - Level 1	20
		*	Professional Cook Foundation - Level 2	5
	CCAS		Professional Cook 1 Apprenticeship	7
			Professional Cook 2 Apprenticeship	5
	CNC	*	CTC Culinary Arts	6
		*	Professional Cook I	4
		*	Professional Cook II	14
			Professional Cook II	8
	COTR	*	Professional Cook 1	7
			Professional Cooking Apprenticeship Year 3	#
	FSABC		Embalmer and Funeral Director Apprenticeship	8
			Funeral Director Apprenticeship	4
	FVAL		Cook Training Certificate	5
	NIC	*	Professional Cook 1 Certificate	15
		*	Professional Cook 2 Certificate	4
	NLC		Cook 1/Camp Cook	10
	NWCAV		Professional Cook 1 Apprenticeship	39
			Professional Cook 2 Apprenticeship	#
	NWCC	*	Professional Cook 1	4
		*	Professional Cook 2	8
			Professional Cook Apprentice - Level 3	#
	OKN		Apprentice Cook	12
		*	Culinary Arts Certificate	21
		*	Culinary Arts Level 1 Dual Credit	10
	SEL		Professional Cook ACE-IT	6
	TRU		Meat Cutting Apprenticeship	5
			Professional Cook 1	6
			Professional Cook 2	7
	VCC		Baking & Pastry Apprentice Level 3	5
			Cook Foundation	18
		*	Culinary Arts	106
			Culinary Arts - Aboriginal Specialty	#
			Culinary Arts Apprentice 3	25
	VIU		Baking Apprenticeship	9
		*	Culinary Arts - Previously Foundation	32
	WSPOT		Professional Cook 1 Apprenticeship	10
			Professional Cook 2 Apprenticeship	3
Electrician				
	BCIT		Electrical Apprentice	245
	CAM		Electrician - Apprenticeship Training	47
	CNC		Electrical Apprentice IV	30
	COTR		Electrical Apprenticeship Year 4	20
	EITI		Power Line Technician Apprenticeship	51
	NIC		Apprenticeship Technical Training: Construction Electrician	20
	NLC		Electrician Apprenticeship Level 4	12
	NWCC		Electrical Apprentice - Level 4	4
	OKN		Apprentice Electrician	79
	SEL		Apprenticeship Year 4 - Electrical	25
	TRU		Electrical Apprenticeship	42
	VIU		Electrical/Electronic Technician Apprenticeship	17

Note: Low numbers are masked, to preserve confidentiality.
*Programs previously in DACSO.

Program Group	Institution		Institution's Program Name	Respondents
Industrial & Heavy Duty Mechanics & Repair				
	BCIT		Heat/Frost Insulation Apprentice	5
			Heavy Duty Mechanic Apprentice	21
			Industrial Instrumentation Apprentice	29
			Millwright Apprentice	34
			Refrigeration Apprentice	9
	BROAD		Community Antenna TV Technician Apprenticeship	8
	CNC		Heavy Duty Mechanic IV	22
			Millwright IV	39
	COTR		Heavy Duty Mechanics Apprenticeship Year 4	8
			Industrial Mechanic Apprenticeship Year 4	#
			Logistics & Distribution Apprenticeship Year 3	4
	JARTS		Refrigeration and Air Conditioning Mechanic (Refrigeration Mechanic)	38
	KWN		Apprentice-Millwright	22
			Apprentice-Partsperson	7
		*	Citation in Parts & Warehousing	15
	NIC		Apprenticeship Technical Training: Millwright	3
	NLC		Heavy Duty Technician Apprentice Level 4	9
	OKN		Apprentice Heavy Duty Equipment	18
	TRU		Heavy Duty Mechanics Apprenticeship	9
			Industrial Electrical Apprenticeship	21
	TRU	*	Parts/Warehousing Foundation	8
	VIU		Heavy Duty Mechanics Apprenticeship	22
			Refrigeration Apprenticeship	8
Other Construction Trades				
	BCFC		Floor Covering Installer Apprenticeship	6
			Hardwood Floorlayer Apprenticeship	4
	BCWCA		Lather (Interior Systems Mechanic) (Wall & Ceiling Installer) Apprenticeship	18
	CNC		Residential Building Maintenance Worker Level 3	9
	JTS		Glazier Apprenticeship	17
			Painter And Decorator Apprenticeship	16
	RCABC		Roofer (Roofer, Damp and Waterproofer) Apprenticeship	33
	SECWE		Residential Building Maintenance Worker Apprenticeship	#
	TRU		Glazier Apprenticeship	20
	TTTA		Bricklayer (Mason) Apprenticeship	14
			Concrete Finisher (Cement Mason) Apprenticeship	3
			Tilesetter Apprenticeship	3
Other Trades				
	CLAC		Heavy Equipment Operator Apprenticeship	7
	CNC		Mobile Crane Operator	3
	EITI		Utility Arborist Apprenticeship	12
	KWN		Apprentice-Landscape Horticulture	21
	NWCC		Heavy Equipment Operator Technician	3
	OETC		Heavy Equipment Operator Apprenticeship	14
			Mobile Crane Operator - Lattice Boom Friction Apprenticeship	#
	PDBD		Piledriver And Bridgeworker Apprenticeship	10

Note: Low numbers are masked, to preserve confidentiality.
*Programs previously in DACSO.

Program Group	Institution		Institution's Program Name	Respondents
Plumbing				
	BCIT		Gasfitting Apprentice	10
			Plumbing Apprentice	58
			Steamfitting Apprentice	5
	CAM		Domestic/Commercial Gasfitter - Apprenticeship Training	3
			Plumber - Apprenticeship Training	35
			Sprinkler Fitter - Apprenticeship Training	7
			Steam/Pipefitter - Apprenticeship Training	6
	ENFORM		Rig Technician Apprenticeship	10
	NIC		Apprenticeship Technical Training: Plumbing	9
	NLC		Plumber Apprentice Level 4	#
	OKN		Apprentice Plumbing	23
	PIPE		Plumber Apprenticeship	44
			Steamfitter-Pipefitter Apprenticeship	19
	PVC		Domestic/Commercial Gasfitter Apprenticeship	36
			Plumber Apprenticeship	121
			Sprinkler System Installer Apprenticeship	26
	TRU		Plumbing Apprenticeship	13
Welding & Precision Production				
	BCIT		Boilermaker Apprentice	3
			Ironworker - Reinforcing Apprentice	8
			Ironworker Generalist Apprentice	10
			Joinery (Cabinetmaker) Apprentice	29
			Machinist Apprentice	31
			Metal Fabricator Apprentice	24
			Sawfitting Apprentice	7
			Sheet Metal Apprentice	11
		*	Welding Level A	14
		*	Welding Level B	25
		*	Welding Level C Foundation	65
	CAM		Metal Fabricator - Apprenticeship Training	6
			Sheet Metal Worker - Apprenticeship Training	10
			Welder - Apprenticeship Training	#
		*	Welding "C" Foundation	38
		*	Welding Level A	7
		*	Welding Level B	9
	CNC	*	CTC Welding	3
		*	CTC Welding / Fitting	8
			Machinist IV	#
		*	Welding - Level A	6
		*	Welding - Level B	6
			Welding - Level B	#
		*	Welding - Level C	23
	COTR	*	Welding A Level	#
			Welding Apprenticeship Level 4	4
		*	Welding B Level	4
		*	Welding C Level	7

Note: Low numbers are masked, to preserve confidentiality.
*Programs previously in DACSO.

Program Group / Institution		Institution's Program Name	Respondents
Welding & Precision Production			
FVAL	*	Welding Level A Certificate	5
	*	Welding Level B Certificate	10
KWN	*	Certificate in Welding C (High School ACE-IT)	7
	*	Citation in Welding-Level A	13
	*	Citation in Welding-Level B	17
	*	Welding-Level C	38
NIC	*	Welding Level A	6
	*	Welding Level B	4
	*	Welding Level C	13
NLC		Welding Apprentice Level 4	#
	*	Welding Level A	#
	*	Welding Level B	6
	*	Welding Level C	5
NWCC	*	ACEIT Welding	4
	*	Welding A Module	4
	*	Welding C Module	12
OKN		Apprentice Joinery	11
		Apprentice Metal Fabricator	6
		Apprentice Sheet Metal	11
	*	Welding Level A Certificate	7
	*	Welding Level B Certificate	16
	*	Welding Level C	48
PIPE		Welder Level 'A' Apprenticeship	#
		Welder Level 'B' Apprenticeship	3
		Welder Level 'C' Apprenticeship	19
RCABC		Architectural Sheet Metal Worker Apprenticeship	10
SEL	*	Welding - Level "C"	7
	*	Welding-Level "A"	4
	*	Welding-Level "B"	5
SMWTC		Sheet Metal Worker Apprenticeship	40
TRU		Metal Fabricator Apprenticeship	7
	*	Welding Level A	10
	*	Welding Level B	9
	*	Welding Level C	27
VIU		Welding - Level 'A' Certificate	6
		Welding - Level 'B' Certificate	#
		Welding - Level 'C' Certificate	28

Note: Low numbers are masked, to preserve confidentiality.
*Programs previously in DACSO.

Appendix D: Response Rates by Program

Apprenticeship Program Group	Eligible for Survey	Respondents	Response Rate
Automotive & Other Mechanics	558	332	59%
Carpentry	935	509	54%
Culinary Arts & Personal Services	915	476	52%
Electrician	1,108	592	53%
Industrial & Heavy Duty Mechanics & Repair	608	360	59%
Other Construction Trades	254	145	57%
Other Trades	117	71	61%
Plumbing	749	427	57%
Welding & Precision Production	1,470	789	54%
OVERALL	**6,714**	**3,701**	**55%**

Individual Program (by CIP)	Eligible for Survey	Respondents	Response Rate
Automotive & Other Mechanics			
Automobile/Automotive Mechanics	277	176	64%
Electrician			
Lineworker	74	51	69%
Industrial & Heavy Duty Mechanics & Repair			
Heavy Equipment Maintenance	183	109	60%
Plumbing			
Pipefitter & Sprinkler Fitter	190	109	57%
Welding & Precision Production			
Welder	1,064	576	54%
Cabinetmaking & Millwork (Joinery)	65	40	62%

Note: The individual programs (by CIP) are pulled from the Program Group shown.

Appendix E: Ratings of In-School Training by Program

How well did in-school training help former students develop skills?

Apprenticeship Program Group	Use mathematics	Work with others	Use tools & equipment	Analyse & think critically
Automotive & Other Mechanics	79%	90%	88%	89%
Carpentry	91%	84%	90%	81%
Culinary Arts & Personal Services	74%	89%	92%	81%
Electrician	90%	77%	66%	82%
Industrial & Heavy Duty Mechanics & Repair	81%	79%	75%	81%
Other Construction Trades	75%	84%	82%	77%
Other Trades	66%	73%	77%	69%
Plumbing	88%	80%	78%	82%
Welding & Precision Production	83%	86%	92%	87%
OVERALL	**84%**	**83%**	**83%**	**83%**

Note: The percentages are of respondents who said *very well* or *well*, out of valid responses to the question, excluding those who said not applicable.

Individual Program (by CIP)	Use mathematics	Work with others	Use tools & equipment	Analyse & think critically
Automotive & Other Mechanics				
Automobile/Automotive Mechanics	81%	90%	91%	92%
Electrician				
Lineworker	82%	82%	84%	80%
Industrial & Heavy Duty Mechanics & Repair				
Heavy Equipment Maintenance	75%	80%	79%	84%
Plumbing				
Pipefitter & Sprinkler Fitter	84%	78%	70%	81%
Welding & Precision Production				
Welder	78%	87%	93%	87%
Cabinetmaking & Millwork (Joinery)	90%	74%	98%	92%

Notes: The percentages are of respondents who said *very well* or *well*, out of valid responses to the question, excluding those who said *not applicable*. The individual programs (by CIP) are pulled from the Program Group shown.

How well did in-school training help former students develop skills?

Apprenticeship Program Group	Learn on your own	Read & comprehend	Resolve issues or problems	Write clearly & consicely
Automotive & Other Mechanics	89%	84%	84%	81%
Carpentry	81%	81%	76%	71%
Culinary Arts & Personal Services	84%	82%	77%	72%
Electrician	76%	84%	78%	73%
Industrial & Heavy Duty Mechanics & Repair	78%	73%	77%	65%
Other Construction Trades	77%	76%	72%	66%
Other Trades	76%	72%	58%	67%
Plumbing	81%	84%	76%	76%
Welding & Precision Production	90%	85%	83%	81%
OVERALL	**83%**	**82%**	**78%**	**74%**

Note: The percentages are of respondents who said *very well* or *well*, out of valid responses to the question, excluding those who said not applicable.

Individual Program (by CIP)	Learn on your own	Read & comprehend	Resolve issues or problems	Write clearly & consicely
Automotive & Other Mechanics				
Automobile/Automotive Mechanics	92%	86%	88%	83%
Electrician				
Lineworker	69%	84%	76%	71%
Industrial & Heavy Duty Mechanics & Repair				
Heavy Equipment Maintenance	81%	72%	78%	67%
Plumbing				
Pipefitter & Sprinkler Fitter	78%	83%	81%	70%
Welding & Precision Production				
Welder	92%	86%	85%	84%
Cabinetmaking & Millwork (Joinery)	92%	82%	82%	74%

Notes: The percentages are of respondents who said *very well* or *well*, out of valid responses to the question, excluding those who said *not applicable*. The individual programs (by CIP) are pulled from the Program Group shown.

How did respondents rate aspects of in-school training?

Apprenticeship Program Group	Amount of practical experience	Program organization	Quality of instruction
Automotive & Other Mechanics	79%	83%	90%
Carpentry	73%	73%	82%
Culinary Arts & Personal Services	87%	76%	87%
Electrician	53%	72%	84%
Industrial & Heavy Duty Mechanics & Repair	57%	71%	79%
Other Construction Trades	64%	64%	75%
Other Trades	63%	63%	73%
Plumbing	57%	78%	86%
Welding & Precision Production	86%	82%	88%
OVERALL	**71%**	**76%**	**85%**

Note: The percentages are of respondents who said *very good* or *good*, out of valid responses to the question, excluding those who said *not applicable*.

Individual Program (by CIP)	Amount of practical experience	Program organization	Quality of instruction
Automotive & Other Mechanics			
Automobile/Automotive Mechanics	80%	86%	92%
Electrician			
Lineworker	78%	51%	84%
Industrial & Heavy Duty Mechanics & Repair			
Heavy Equipment Maintenance	65%	73%	75%
Plumbing			
Pipefitter & Sprinkler Fitter	48%	75%	81%
Welding & Precision Production			
Welder	91%	84%	90%
Cabinetmaking & Millwork (Joinery)	83%	70%	75%

Notes: The percentages are of respondents who said *very good* or *good*, out of valid responses to the question, excluding those who said *not applicable*. The individual programs (by CIP) are pulled from the Program Group shown.

How did respondents rate the length of in-school training?

Apprenticeship Program Group	About right	Too short	Too long
Automotive & Other Mechanics	66%	31%	3%
Carpentry	51%	47%	2%
Culinary Arts & Personal Services	67%	26%	7%
Electrician	71%	24%	5%
Industrial & Heavy Duty Mechanics & Repair	62%	34%	4%
Other Construction Trades	59%	34%	7%
Other Trades	61%	31%	7%
Plumbing	58%	38%	4%
Welding & Precision Production	73%	22%	5%
OVERALL	**65%**	**31%**	**5%**

Individual Program (by CIP)	About right	Too short	Too long
Automotive & Other Mechanics			
Automobile/Automotive Mechanics	64%	35%	1%
Electrician			
Lineworker	55%	43%	2%
Industrial & Heavy Duty Mechanics & Repair			
Heavy Equipment Maintenance	61%	37%	3%
Plumbing			
Pipefitter & Sprinkler Fitter	61%	33%	6%
Welding & Precision Production			
Welder	76%	17%	6%
Cabinetmaking & Millwork (Joinery)	65%	33%	3%

Note: The individual programs (by CIP) are pulled from the Program Group shown.

How did respondents rate the content of the program's in-school training?

Apprenticeship Program Group	Covering the standards in use	Covering relevant topics	Being up-to-date
Automotive & Other Mechanics	85%	82%	71%
Carpentry	83%	76%	71%
Culinary Arts & Personal Services	86%	87%	80%
Electrician	83%	72%	61%
Industrial & Heavy Duty Mechanics & Repair	73%	66%	61%
Other Construction Trades	77%	69%	63%
Other Trades	76%	74%	77%
Plumbing	85%	81%	79%
Welding & Precision Production	87%	84%	80%
OVERALL	**83%**	**78%**	**72%**

Note: The percentages are of respondents who said *very good* or *good*, out of valid responses to the question, excluding those who said *not applicable*.

Individual Program (by CIP)	Covering the standards in use	Covering relevant topics	Being up-to-date
Automotive & Other Mechanics			
Automobile/Automotive Mechanics	88%	83%	77%
Electrician			
Lineworker	78%	75%	49%
Industrial & Heavy Duty Mechanics & Repair			
Heavy Equipment Maintenance	64%	55%	46%
Plumbing			
Pipefitter & Sprinkler Fitter	77%	76%	72%
Welding & Precision Production			
Welder	90%	89%	85%
Cabinetmaking & Millwork (Joinery)	65%	68%	49%

Notes: The percentages are of respondents who said *very good* or *good*, out of valid responses to the question, excluding those who said *not applicable*. The individual programs (by CIP) are pulled from the Program Group shown.

Appendix F: Qualification or Certification by Program

Apprenticeship Program Group	Percent qualified	Number qualified
Automotive & Other Mechanics	80%	264
Carpentry	82%	410
Culinary Arts & Personal Services	63%	276
Electrician	87%	515
Industrial & Heavy Duty Mechanics & Repair	81%	288
Other Construction Trades	70%	99
Other Trades	55%	35
Plumbing	85%	363
Welding & Precision Production	65%	482
OVERALL	**76%**	**2,732**

Individual Program (by CIP)	Percent qualified	Number qualified
Automotive & Other Mechanics		
Automobile/Automotive Mechanics	79%	138
Electrician		
Lineworker	96%	49
Industrial & Heavy Duty Mechanics & Repair		
Heavy Equipment Maintenance	91%	99
Plumbing		
Pipefitter & Sprinkler Fitter	87%	94
Welding & Precision Production		
Welder	58%	304
Cabinetmaking & Millwork (Joinery)	73%	29

Note: The individual programs (by CIP) are pulled from the Program Group shown.

Appendix G: Usefulness of In-School Training by Program

How useful were the knowledge and skills gained in the program in preparing for the certification exam?

Apprenticeship Program Group	Very useful	Somewhat useful	Not very & not at all useful
Automotive & Other Mechanics	69%	26%	5%
Carpentry	63%	33%	3%
Culinary Arts & Personal Services	51%	42%	7%
Electrician	73%	23%	3%
Industrial & Heavy Duty Mechanics & Repair	61%	34%	6%
Other Construction Trades	40%	41%	20%
Other Trades	48%	40%	12%
Plumbing	68%	27%	6%
Welding & Precision Production	57%	38%	6%
OVERALL	**62%**	**32%**	**6%**

Note: Percentages were calculated excluding those who said *not applicable.*

Individual Program (by CIP)	Very useful	Somewhat useful	Not very & not at all useful
Automotive & Other Mechanics			
Automobile/Automotive Mechanics	69%	27%	4%
Electrician			
Lineworker	69%	27%	4%
Industrial & Heavy Duty Mechanics & Repair			
Heavy Equipment Maintenance	55%	38%	7%
Plumbing			
Pipefitter & Sprinkler Fitter	72%	22%	6%
Welding & Precision Production			
Welder	54%	40%	6%
Cabinetmaking & Millwork (Joinery)	28%	65%	8%

Notes: The percentages are calculated excluding those who said *not applicable*.
The individual programs (by CIP) are pulled from the Program Group shown.

How useful were the knowledge and skills gained in the program for performing your job?

Apprenticeship Program Group	Very useful	Somewhat useful	Not very & not at all useful
Automotive & Other Mechanics	69%	29%	2%
Carpentry	55%	40%	5%
Culinary Arts & Personal Services	60%	32%	8%
Electrician	52%	42%	6%
Industrial & Heavy Duty Mechanics & Repair	58%	37%	5%
Other Construction Trades	53%	42%	6%
Other Trades	52%	35%	13%
Plumbing	62%	33%	5%
Welding & Precision Production	61%	30%	9%
OVERALL	**59%**	**35%**	**6%**

Note: Percentages were calculated excluding those who said *not applicable.*

Individual Program (by CIP)	Very useful	Somewhat useful	Not very & not at all useful
Automotive & Other Mechanics			
Automobile/Automotive Mechanics	69%	30%	1%
Electrician			
Lineworker	69%	22%	10%
Industrial & Heavy Duty Mechanics & Repair			
Heavy Equipment Maintenance	55%	43%	3%
Plumbing			
Pipefitter & Sprinkler Fitter	64%	31%	5%
Welding & Precision Production			
Welder	62%	27%	11%
Cabinetmaking & Millwork (Joinery)	54%	40%	6%

Notes: The percentages are calculated excluding those who said *not applicable*.
The individual programs (by CIP) are pulled from the Program Group shown.

Appendix H: Evaluation of Workplace Experience

Did program include workplace training outside the institution, either through a work placement or employment as an apprentice?

Apprenticeship Program Group	Percent workplace	Number workplace
Automotive & Other Mechanics	54%	175
Carpentry	49%	249
Culinary Arts & Personal Services	55%	257
Electrician	46%	268
Industrial & Heavy Duty Mechanics & Repair	61%	219
Other Construction Trades	57%	82
Other Trades	61%	43
Plumbing	50%	212
Welding & Precision Production	27%	207
OVERALL	**47%**	**1,712**

Individual Program (by CIP)	Percent workplace	Number workplace
Automotive & Other Mechanics		
Automobile/Automotive Mechanics	54%	94
Electrician		
Lineworker	80%	40
Industrial & Heavy Duty Mechanics & Repair		
Heavy Equipment Maintenance	63%	69
Plumbing		
Pipefitter & Sprinkler Fitter	53%	57
Welding & Precision Production		
Welder	15%	86
Cabinetmaking & Millwork (Joinery)	56%	22

Note: The individual programs (by CIP) are pulled from the Program Group shown.

How related was in-school training to the workplace experience?

Apprenticeship Program Group	Very related	Somewhat related	Not very & not at all related
Automotive & Other Mechanics	59%	35%	6%
Carpentry	45%	45%	10%
Culinary Arts & Personal Services	58%	34%	7%
Electrician	34%	52%	14%
Industrial & Heavy Duty Mechanics & Repair	44%	44%	13%
Other Construction Trades	44%	48%	9%
Other Trades	51%	47%	2%
Plumbing	48%	45%	7%
Welding & Precision Production	50%	41%	9%
OVERALL	**48%**	**43%**	**10%**

Individual Program (by CIP)	Very related	Somewhat related	Not very & not at all related
Automotive & Other Mechanics			
Automobile/Automotive Mechanics	59%	36%	5%
Electrician			
Lineworker	63%	33%	5%
Industrial & Heavy Duty Mechanics & Repair			
Heavy Equipment Maintenance	38%	46%	16%
Plumbing			
Pipefitter & Sprinkler Fitter	54%	40%	5%
Welding & Precision Production			
Welder	53%	40%	7%
Cabinetmaking & Millwork (Joinery)	23%	68%	9%

Note: The individual programs (by CIP) are pulled from the Program Group shown.

Appendix I: Labour Market Outcomes

What were the labour force participation and unemployment rates?

Apprenticeship Program Group	Labour force participation	Unemployment rate
Automotive & Other Mechanics	98%	2.8%
Carpentry	95%	10.5%
Culinary Arts & Personal Services	93%	12.7%
Electrician	98%	6.1%
Industrial & Heavy Duty Mechanics & Repair	100%	3.6%
Other Construction Trades	98%	10.6%
Other Trades	97%	13.0%
Plumbing	97%	8.7%
Welding & Precision Production	94%	13.2%
OVERALL	**96%**	**9.1%**

Note: The unemployment rate is the number of unemployed as a percentage of respondents in the labour force.

Individual Program (by CIP)	Labour force participation	Unemployment rate
Automotive & Other Mechanics		
Automobile/Automotive Mechanics	99%	2.9%
Electrician		
Lineworker	100%	0.0%
Industrial & Heavy Duty Mechanics & Repair		
Heavy Equipment Maintenance	100%	0.9%
Plumbing		
Pipefitter & Sprinkler Fitter	94%	8.7%
Welding & Precision Production		
Welder	94%	15.4%
Cabinetmaking & Millwork (Joinery)	95%	7.9%

Note: The unemployment rate is the number of unemployed as a percentage of respondents in the labour force.
The individual programs (by CIP) are pulled from the Program Group shown.

Appendix J: Common Occupations by Program Group

Apprenticeship Program Area / Occupation Category		Number in Occupation	Percent in Occupation
Automotive & Other Mechanics			
	Motor Vehicle Mechanics	246	78%
	Machinery & Transportation Equipment Mechanics	26	8%
	Other trades and related occupations	6	2%
	Contractors & Supervisors, Trades & Related	5	2%
	Other Assembly & Related Occupations	5	2%
	Other Mechanics	5	2%
	Managers in Retail Trade	4	1%
	Other Installers, Repairers & Servicers	3	1%
	Recording, Scheduling & Distributing Occupations	3	1%
Carpentry			
	Carpenters & Cabinetmakers	304	70%
	Contractors & Supervisors, Trades & Related	68	16%
	Managers in Construction & Transportation	19	4%
	Trades Helpers and Labourers	11	3%
	Cleaners	3	1%
Culinary Arts & Personal Services			
	Chefs & Cooks	268	70%
	Butchers & Bakers	22	6%
	Food Counter Attendants & Kitchen Helpers	21	5%
	Technical Occupations in Personal Service	11	3%
	Unclassified Occupations	10	3%
	Retail Salespersons & Sales Clerks	7	2%
	Managers in Food Service & Accommodation	6	2%
	Managers in Retail Trade	4	1%
	Social Service Workers & Related	3	1%
Electrician			
	Electrical Trades & Telecommunications	461	85%
	Contractors & Supervisors, Trades & Related	43	8%
	Occupations in Electronics & Electrical Engineering	7	1%
	Unclassified Occupations	7	1%

Note: Occupations with fewer than three respondents are not shown; therefore, most program areas do not add to 100 percent. Occupation categories are the 3-digit NOC.

Apprenticeship Program Area / Occupation Category		Number in Occupation	Percent in Occupation
Industrial & Heavy Duty Mechanics & Repair			
	Machinery & Transportation Equipment Mechanics	236	68%
	Electrical Trades & Telecommunications	29	8%
	Occupations in Electronics & Electrical Engineering	27	8%
	Recording, Scheduling & Distributing Occupations	16	5%
	Contractors & Supervisors, Trades & Related	5	1%
	Longshore Workers & Material Handlers	4	1%
	Other Mechanics	4	1%
	Motor Vehicle Mechanics	3	1%
	Other Construction Trades	3	1%
	Technical Sales Specialists, Wholesale Trade	3	1%
Other Construction Trades			
	Other Construction Trades	69	55%
	Masonry & Plastering Trades	25	20%
	Contractors & Supervisors, Trades & Related	15	12%
	Cleaners	3	2%
	Other Assembly & Related Occupations	3	2%
Other Trades			
	Technical Occupations in Life Sciences	13	22%
	Contractors & Supervisors in Agriculture	12	20%
	Crane Operators, Drillers & Blasters	6	10%
	Heavy Equipment Operators	6	10%
	Trades Helpers & Labourers	3	5%
Plumbing			
	Plumbers, Pipefitters, & Gas Fitters	298	79%
	Contractors & Supervisors, Trades & Related	39	10%
	Machinery & Transportation Equipment Mechanics	8	2%
	Mine Service Workers, Oil & Gas Drilling Workers	6	2%
	Unclassified Occupations	5	1%
	Underground Miners, Oil & Gas Drillers	3	1%

Note: Occupations with fewer than three respondents are not shown; therefore, most program areas do not add to 100 percent. Occupation categories are the 3-digit NOC.

Apprenticeship Program Area Occupation Category		Number in Occupation	Percent in Occupation
Welding & Precision Production			
	Metal Forming, Shaping, & Erecting Occupations	428	66%
	Contractors & Supervisors, Trades & Related	27	4%
	Carpenters & Cabinetmakers	23	4%
	Machinists & Related Occupations	23	4%
	Trades Helpers & Labourers	22	3%
	Machinery & Transportation Equipment Mechanics	19	3%
	Other trades and related occupations	7	1%
	Unclassified Occupations	7	1%
	Longshore Workers & Material Handlers	6	1%
	Motor Vehicle & Transit Drivers	6	1%
	Other Installers, Repairers & Servicers	6	1%
	Cleaners	5	1%
	Electrical Trades & Telecommunications	5	1%
	Other Assembly & Related Occupations	5	1%
	Machine Operators & Related Work in Pulp & Paper	4	1%
	Machining, Metalwork, Woodwork & Related	4	1%
	Mine Service Workers, Oil & Gas Drilling Workers	4	1%
	Recording, Scheduling & Distributing Occupations	4	1%
	Labourers in Processing, Manufacturing & Utilities	3	<1%
	Managers in Manufacturing & Utilities	3	<1%
	Masonry & Plastering Trades	3	<1%

Note: Occupations with fewer than three respondents are not shown; therefore, most program areas do not add to 100 percent. Occupation categories are the 3-digit NOC.