



2013 APPRENTICESHIP STUDENT OUTCOMES SURVEY

report of findings

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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 focusses 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 and the participating British Columbia post-secondary institutions. Additional funding for the APPSO Survey is provided by the Industry Training Authority 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 Student Outcomes data and is responsible for providing operational support, day-to-day management, advice, and reports, as directed by the Forum.

Highlights

The 2013 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, 2011 and June 30, 2012. From January to April 2013, 3,486 former students completed the survey, by telephone or online. The overall response rate was 56 percent. The following are highlights from the survey findings.

Former apprenticeship students

- 89 percent of respondents were male; the median age for all respondents was 27
- 28 percent of respondents took pre-apprenticeship training: a trades foundation course or entry-level trades training
- 40 percent had some other post-secondary education
- 53 percent of those with previous post-secondary education or training had achieved a prior credential
- 54 percent of respondents were in one of three program groups: Welding & Precision Production, Electrician, or Culinary Arts & Personal Services
- 82 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*) analyse and think critically
- 83 percent said their program helped them (*very well* or *well*) read and comprehend materials
- 86 percent said the quality of their instruction was *very good* or *good*
- 66 percent said the length of their program was *about right*
- 84 percent of respondents rated the content of their training *very good* or *good* at covering the standards used in their field
- 89 percent of the respondents said they received their British Columbia Certificate of Qualification
- 93 percent reported that their training was *very useful* or *somewhat useful* to them in preparing to write the certification exam

Workplace experiences

- 91 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)
- 8.7 percent of those in the labour force were unemployed
- 88 percent of respondents were employed
- 96 percent of employed respondents were working full-time
- 5 percent of employed respondents were self-employed
- 58 percent had done work placements with their current employer
- 90 percent of employed respondents said their employment was *very related* or *somewhat related* to their in-school training
- 93 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

The Skills and Training Plan (announced September 2012) projects that there will be nearly one million job openings between 2012 and 2020 in British Columbia. Of these openings, 43 percent will need trades and technical training. It is anticipated that there will be a cumulative gap of 22,000 to 32,000 technical and trades workers in the province. The Skills and Training Plan is intended to help ensure British Columbians can take advantage of these job opportunities and address the potential shortage of workers.

Currently, there are more than 100 trades for which apprenticeship training is available in the province, offering career opportunities in a diverse range of occupations. The apprenticeship training system includes the Industry Training Authority (ITA), public post-secondary institutions, private training institutions, and employers. Approximately 80 percent of an apprentice's training is provided on-the-job; the remaining 20 percent is in-class technical training delivered at a post-secondary institution or by a private training provider.

The length of an apprenticeship varies by occupation, ranging from one to five years; the majority of apprenticeships require a minimum of four years to complete. A successful apprentice is one who completes the in-school technical training and the required work hours, passes examinations, and is recommended for certification by the sponsoring employer to earn a "ticket" in a skilled trade. That credential, referred to as a Certificate of Qualification (C of Q), is issued by the Industry Training Authority on behalf of the Province of British Columbia; about 50 trades are endorsed by the Interprovincial (IP) Red Seal program, which is recognized across Canada as a signal that the apprentice passed a standardized national exam.

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

About the 2013 Apprenticeship Survey

The 2013 Apprenticeship Student Outcomes (APPSO) Survey is the ninth annual survey of former apprenticeship students. A total of 6,200 apprentices who completed their apprenticeship training at a B.C. post-secondary institution between July 1, 2011 and June 30, 2012 were eligible for this survey. The survey was conducted, by telephone and web, from January to April 2013; there were 3,486 respondents, making the response rate 56 percent. The respondents had completed apprenticeship programs from 38 post-secondary or training institutions (14 public and 24 private). (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.

Data from the Apprenticeship Student Outcomes Survey are currently used by AVED 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, which provides AVED and the institutions with pertinent and valuable outcomes information for non-apprenticeship and pre-apprentice trades programs.

The 2013 APPSO Survey included 854 respondents from programs that were previously surveyed in DACSO. The ITA now offers apprenticeship completion and certification at different levels for certain programs, and starting in 2010, the cohort selection criteria for APPSO were changed to include former students from these progressive credential programs. In 2013, this meant the survey included large numbers of former cook (n = 266) and welding (n = 545) students (in programs disaggregated into Professional Cook 1 and 2 and Welder C, B, and A) and a handful of respondents from some carpentry (residential construction) programs (n = 26) and parts and warehousing programs (n = 17). (See [Appendix B: Progressive Credential Programs Moved from DACSO to APPSO](#), for a discussion of the impact of the inclusion of these programs in the APPSO Survey.)

In 2013, for the first time, a flag to identify former ACE IT students was included. The Accelerated Credit Enrolment to Industry Training (ACE IT) program allows high school students to take first level technical training that gives them dual credits for high school courses and apprenticeship or industry training courses. See [Appendix C: ACE IT Programs](#) for some information on the respondents who took these programs.

About this report

This report presents a summary of the findings from the 2013 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.

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 D: Apprenticeship Program Groups and Institutions' Programs](#).

The body of the report includes analyses by the program groups; the appendices include additional tables of results by the nine program groups. Please see [Appendix E: Response Rates by Program](#) for the number of former students eligible for the survey, the number of respondents, and the response rate by program group.

Former Apprenticeship Students

The 2013 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 3,486 former students who were interviewed had completed technical training in 38 different institutions across British Columbia. The programs they took have been organized into nine apprenticeship program groups, most of which are self-explanatory.¹

Who were former apprenticeship students?

The percentage of females responding to the APPSO Survey has increased over time, from 5 percent in 2010 to 11 percent in 2013. As in 2012, the largest number of females was in the Culinary Arts & Personal Services group. The increase in female participation has been impacted by the change in cohort criteria (moving programs from DACSO to APPSO).²

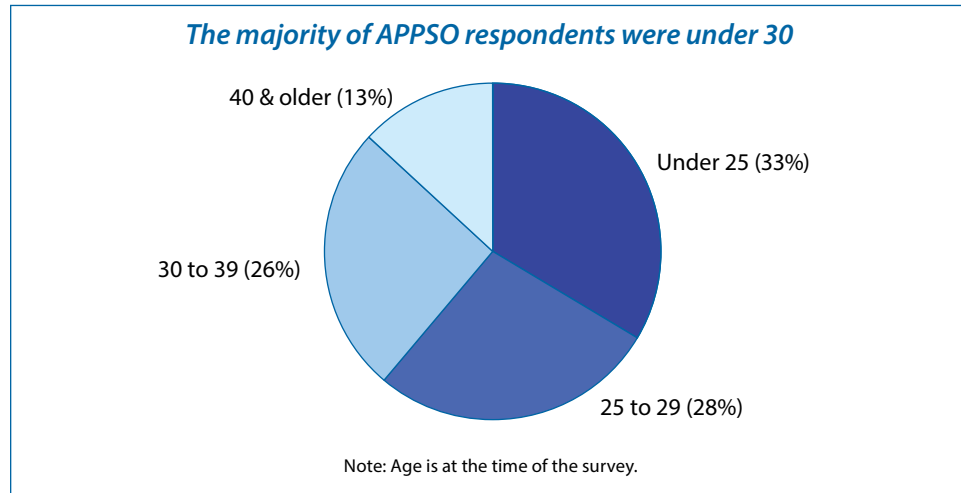
The largest number of female respondents was from the Culinary Arts & Personal Services program group

Program group	Female respondents	Percent of group
Automotive & Other Mechanics	#	#
Carpentry	22	6%
Culinary Arts & Personal Services	230	44%
Electrician	22	4%
Industrial & Heavy Duty Mechanics & Other Repair Trades	19	6%
Other Construction Trades	6	5%
Other Trades	19	13%
Plumbing	#	#
Welding & Precision Production	60	7%
Total	385	11%

Note: Low numbers have been masked to preserve confidentiality.

- 1 The hundreds of courses offered by institutions have been grouped using their CIP coding into nine program categories for reporting. 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. To see which courses from each institution are included in each program group, refer to [Appendix D: Apprenticeship Program Groups and Institutions' Programs](#).
- 2 See [Appendix B: Progressive Credential Programs Moved from DACSO to APPSO](#), for a discussion of the impact of changes to the APPSO cohort selection criteria.

At the time of the APPSO Survey, the age of respondents ranged from 17 to 73; the median age was 27. Consistent with the 2012 age distribution, the majority (61 percent) of respondents were under 30; over one-quarter (26 percent) were between the ages of 30 and 39.



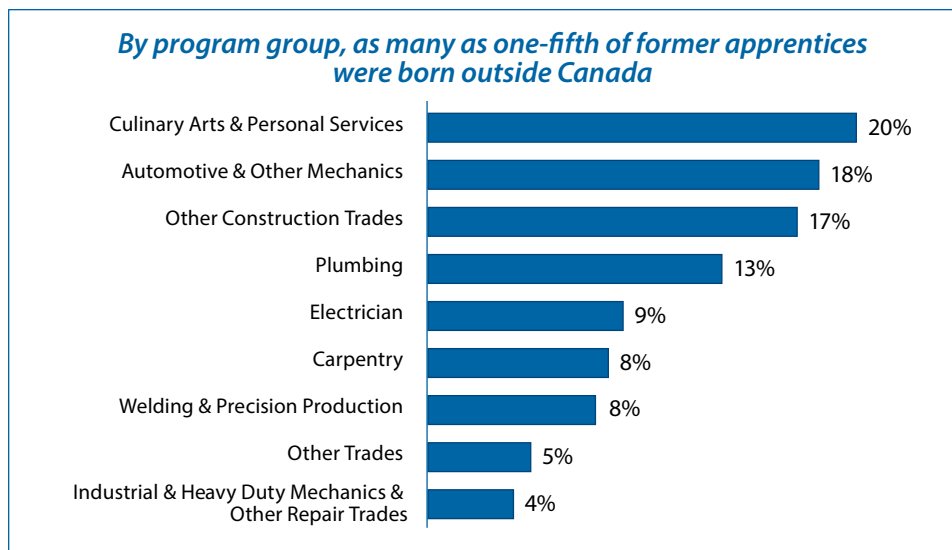
Age varied somewhat by apprenticeship program group. As in 2012, respondents from apprenticeship programs in Industrial & Heavy Duty Mechanics & Other Repair Trades (median: 31 years old) and Other Trades (median: 32 years old) tended to be older, while those from Culinary Arts & Personal Services programs (median: 24 years old) were likely to be younger.

The age of respondents varied by apprenticeship program group

Program group	Median Age
Automotive & Other Mechanics	27
Carpentry	27
Culinary Arts & Personal Services	24
Electrician	29
Industrial & Heavy Duty Mechanics & Other Repair Trades	31
Other Construction Trades	28
Other Trades	32
Plumbing	29
Welding & Precision Production	25
Overall	27

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

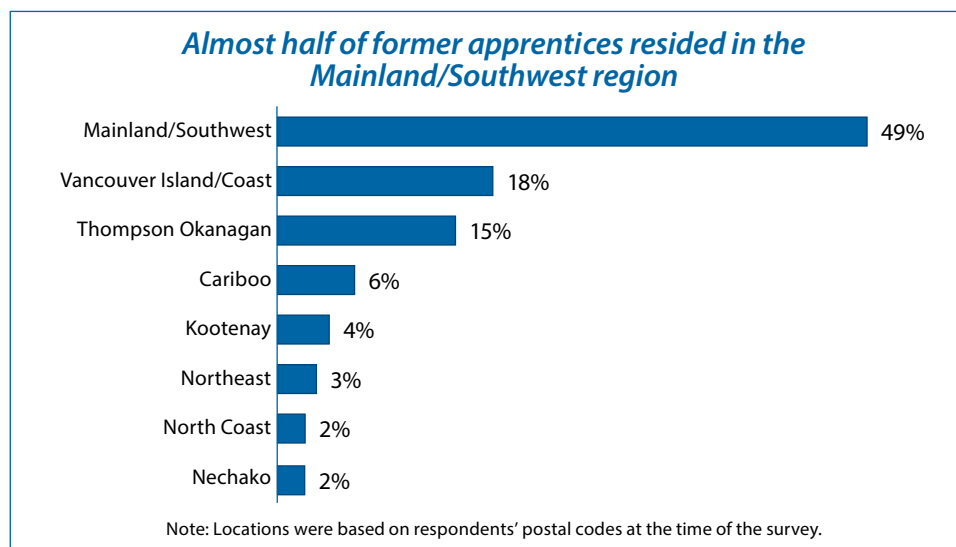
In 2013, 89 percent of respondents said they were born in Canada. There was variability across program groups—for example, 20 percent of former Culinary Arts & Personal Services apprentices were from outside of Canada, while 4 percent of former Industrial & Heavy Duty Mechanics & Other Repair Trades apprentices were born outside Canada.



Of the former apprentices whose country of origin was not Canada, 64 percent were citizens and 31 percent were permanent residents while they were taking their training. Citizenship and immigration status varied by program group—for example, the majority of former Automotive & Other Mechanics and Other Trades apprentices who were born outside of Canada were naturalized Canadians (76 percent and 86 percent, respectively).

In 2013, 8 percent of respondents who were Canadian-born identified themselves as Aboriginal; in 2012, it was 8 percent and in 2011, it was 7 percent, which was up from 5 percent in 2010. The majority (62 percent) of those who self-identified as Aboriginal in 2013 further identified themselves as First Nations. An additional 40 percent identified themselves as Métis.³

Respondents' region of residence at the time of the survey was predominantly in the Mainland/Southwest region (49 percent).



³ Respondents were allowed to provide multiple responses. As a result, the percentages total to more than 100 percent.

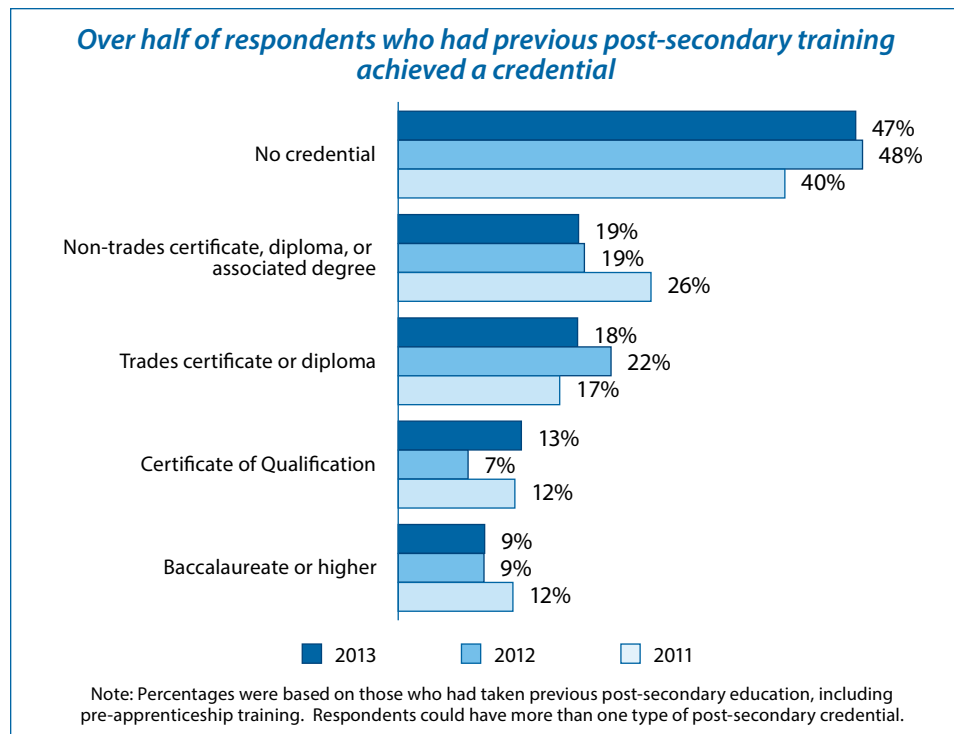
What previous education did respondents have?

Former students were asked if they had been in a high school apprenticeship program: 14 percent reported that they had. Respondents were also asked about any post-secondary education they had taken before beginning their apprenticeships. Over half (56 percent) had taken either pre-apprenticeship training or other post-secondary education.

Over one-quarter (28 percent) of respondents had taken pre-apprenticeship training—a trades foundation course or entry-level trades training.⁴ The majority (82 percent) of those who took pre-apprenticeship training studied in the same trade as their apprenticeship. This percentage has fluctuated over time—in 2012 and 2010, 88 percent reported that their pre-apprenticeship training and apprenticeship had been in the same trade; while in 2011 and 2009, 84 percent said they had studied the same trade during their pre-apprenticeship training and their apprenticeship.

A fairly high proportion of respondents (40 percent) had taken other post-secondary education, and a significant number (13 percent) had taken both pre-apprenticeship training and other post-secondary studies.

Over half (53 percent) of those who had previous post-secondary training or education achieved a credential from their prior training. Each year since 2011, the most common credentials have been a trades certificate or diploma and a non-trades certificate, diploma, or associate degree.



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).

What apprenticeship programs did survey respondents take?

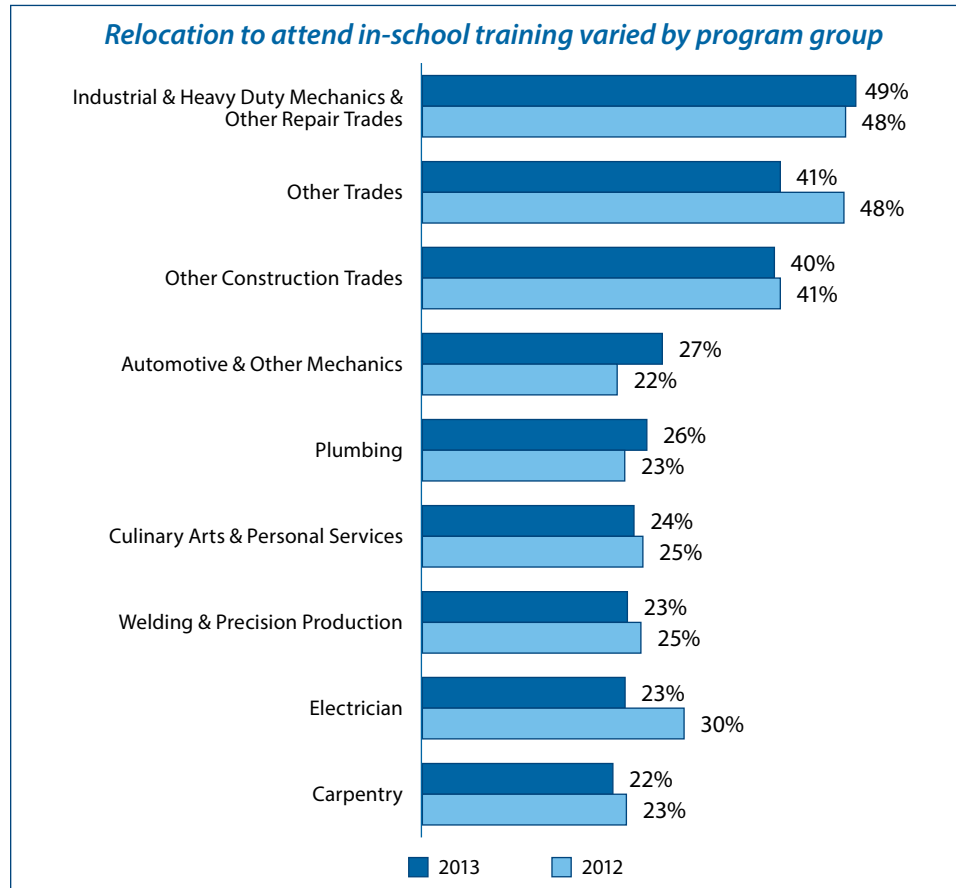
The former apprenticeship students surveyed in 2013 had completed training in a variety of trade programs, which have been organized into nine program groups. Over half of the respondents were in one of the following groups: Welding & Precision Production, Electrician, or Culinary Arts & Personal Services.

Compared to 2012, there were some small differences in the programs taken by respondents in 2013; however, the distribution of respondents over the program groups was similar—Welding & Precision Production and Electrician program groups were the largest, and the top four groups accounted for almost two-thirds of respondents.

The three largest program groups accounted for more than half of the respondents

Program group	2013		2012	
	Respondents	Percent	Respondents	Percent
Welding & Precision Production	828	24%	789	21%
Electrician	543	16%	592	16%
Culinary Arts & Personal Services	525	15%	476	13%
Carpentry	379	11%	509	14%
Plumbing	346	10%	427	12%
Industrial & Heavy Duty Mechanics & Other Repair Trades	337	10%	366	10%
Automotive & Other Mechanics	253	7%	326	9%
Other Trades	150	4%	71	2%
Other Construction Trades	125	4%	145	4%
Total	3,486	100%	3,701	100%

Overall, 28 percent of respondents said they relocated from their home community to attend their in-school apprenticeship training. Relocation varied by program group: almost half of the former students from Industrial & Heavy Duty Mechanics & Other Repair Trades moved to study, while just over one-fifth of former Carpentry students relocated. Relocation rates have fluctuated for most program groups.



Did apprentices study in public or private institutions?

The majority (82 percent) of the former apprenticeship students who were surveyed in 2013 had attended public institutions. This percentage has been consistent in findings dating back to 2010. Prior to stabilizing in 2010, the percentage of respondents that studied at private institutions increased over time—from 11 percent in 2005 to 22 percent in 2009.

The majority of respondents attended public post-secondary institutions

Public Institutions	Respondents	% of Total Respondents
B.C. Institute of Technology	826	24%
Okanagan College	333	10%
Camosun College	265	8%
Vancouver Community College	238	7%
Thompson Rivers University	223	6%
College of New Caledonia	194	6%
Kwantlen Polytechnic University	162	5%
Vancouver Island University	161	5%
University of the Fraser Valley	117	3%
North Island College	100	3%
Northwest Community College	71	2%
College of the Rockies	62	2%
Northern Lights College	57	2%
Selkirk College	43	1%
Total	2,852	82%

Almost one-fifth of respondents trained at private institutions

Private Institutions	Respondents	% of Total Respondents
Pacific Vocational College	122	3%
Piping Industry Apprenticeship Board	66	2%
Joint Apprentice Refrigeration Trade School	65	2%
Electrical Industry Training Institute	52	1%
R.C.A.B.C. Roofing Institute	41	1%
IUOE Local 115 Training Association	36	1%
Trowel Trades Training Association	35	1%
The Finishing Trades Institute of BC	33	1%
Northwest Culinary Academy of Vancouver Inc.	27	1%
Sheet Metal Workers Training Centre	24	1%
Salvation Army Cascade Culinary Arts School	22	1%
White Spot Ltd.	18	1%
Funeral Service Association of BC	15	<1%
Piledrivers, Divers, Bridge, Dock, Loc. 2404	15	<1%
Taylor Pro Training	13	<1%
Christian Labour Association of Canada	9	<1%
BC Wall & Ceiling Association	8	<1%
Enform Canada	8	<1%
Discovery Community College	6	<1%
VanAsep Training Society	6	<1%
BC Floor Covering Joint Conference Society	#	<1%
Riverside College	#	<1%
Quadrant Marine Institute	#	<1%
Secwepemc Cultural Education Society	#	<1%
Total	634	18%

Note: Low numbers have been 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 respondents who apprenticed in Carpentry programs (98 percent) and Automotive & Other Mechanics programs (97 percent) studied at a public institution, while most (93 percent) of those who apprenticed in Other Construction Trades did their training in a private institution.

Training in a public or private institution varied by program group

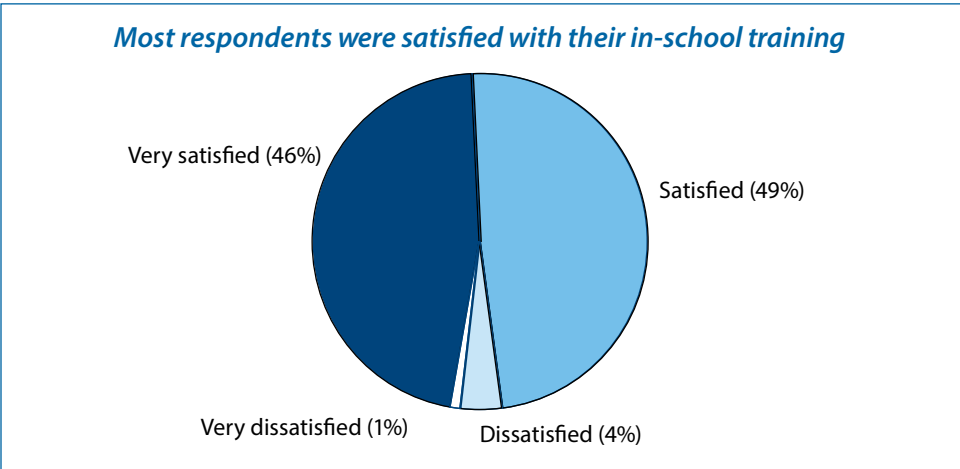
Program group	Public	Private	Total
Automotive & Other Mechanics	97%	3%	100%
Carpentry	98%	2%	100%
Culinary Arts & Personal Services	84%	16%	100%
Electrician	93%	7%	100%
Industrial & Heavy Duty Mechanics & Other Repair Trades	81%	19%	100%
Other Construction Trades	7%	93%	100%
Other Trades	37%	63%	100%
Plumbing	46%	54%	100%
Welding & Precision Production	95%	5%	100%
All programs	82%	18%	100%

In-School Experiences

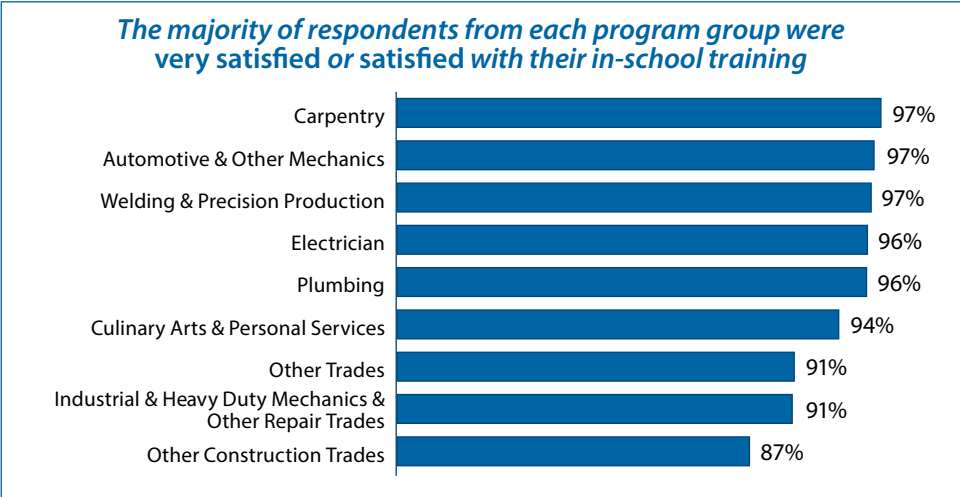
The 2013 survey included a number of questions aimed at evaluating in-school apprenticeship training. Respondents were asked about the length of training, availability of courses, and to provide ratings of the quality of their instruction, the content of their program, and the opportunities they were 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 training they received as part of their apprenticeship program. Overall satisfaction with in-school training has been consistently high since this survey began in 2005.

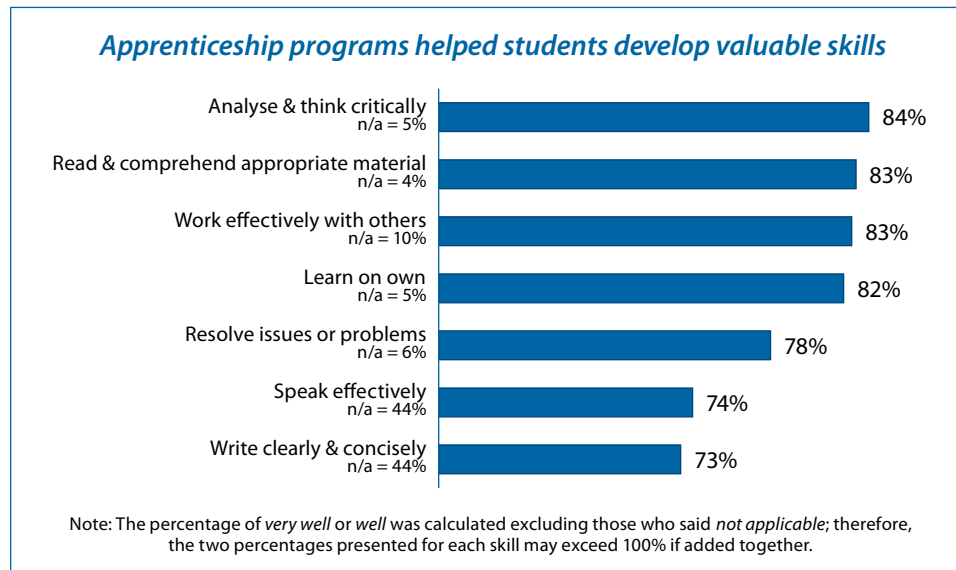


The overall satisfaction rating from each program group was similar, although there was some variation.



Did in-school training provide opportunities to develop skills?

Respondents were asked to rate the extent to which their in-school training provided them with opportunities to develop various professional skills. If a particular skill was not relevant to their training, it was marked *not applicable*. The majority of respondents said that their training helped them to develop (*very well* or *well*) a number of important skills, such as analysis and critical thinking, working effectively with others, and speaking effectively.

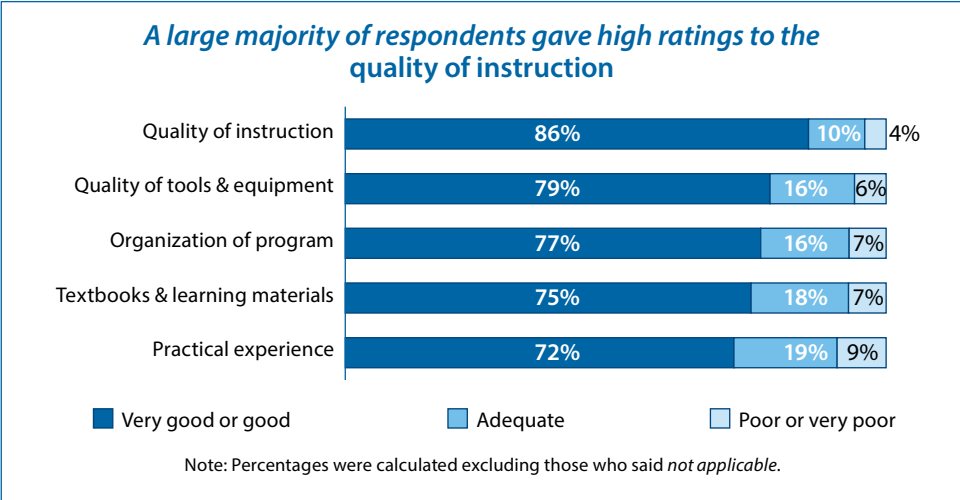


For a detailed list of skills ratings by program groups, see [Appendix F: Ratings of In-School Training by Program](#), under “How well did in-school training help former students develop skills?”

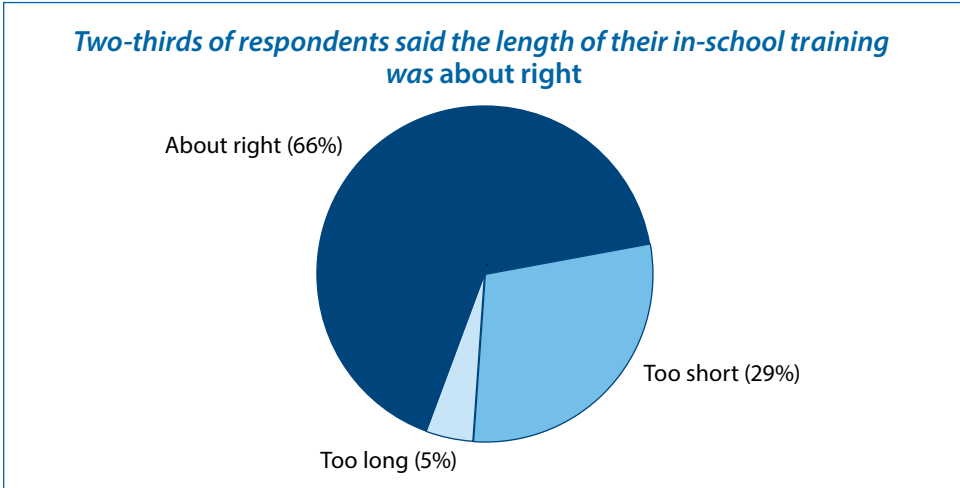
How did respondents rate the quality of their in-school training?

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

Respondents gave the highest ratings to the quality of instruction—86 percent said that it was *very good* or *good*. When asked about the quality of tools and equipment, the organization of the program, and their textbooks and learning materials, three-quarters or more respondents said that these aspects of their in-school training were *very good* or *good*.

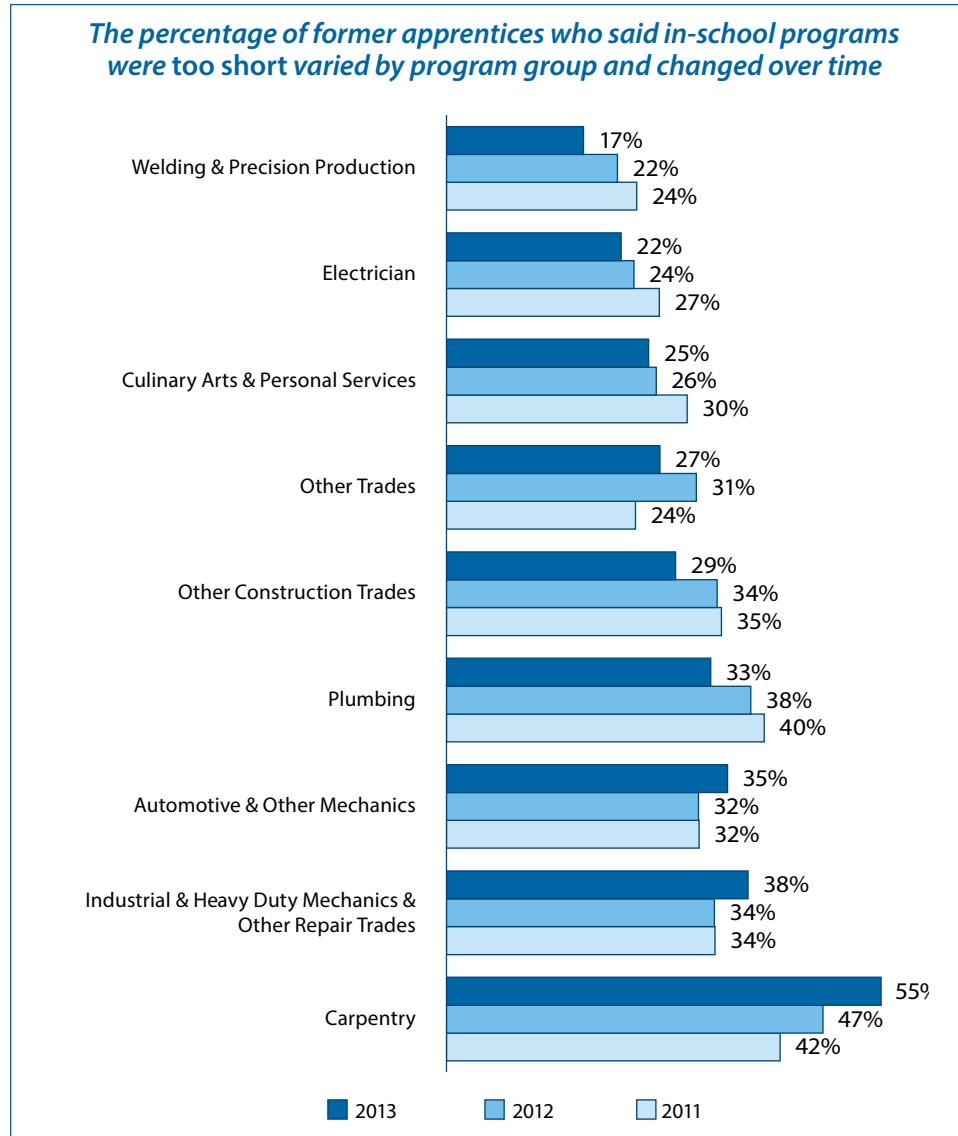


When asked about the length of their training, two-thirds (66 percent) of respondents said the length of their in-school training was about right to cover the material taught. More than one-quarter (29 percent) of respondents reported that the courses were too short; very few said they were too long.⁵



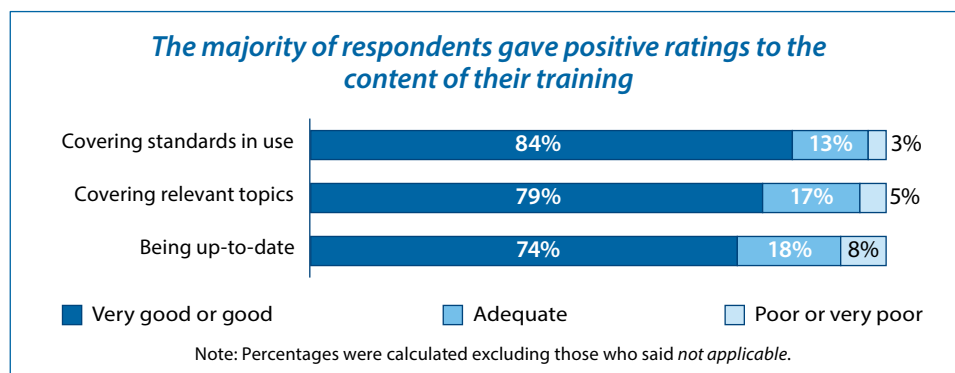
Overall, 29 percent of respondents thought their program did not give them enough time to cover the material adequately. This percentage varied by program group—from 17 percent of Welding & Precision Production respondents to 55 percent of Carpentry respondents.

5 For details, please see [Appendix F: Ratings of In-School Training by Program](#), under “How did respondents rate the length of in-school training?”



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 three 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*. The majority of respondents gave either a *very good* or *good* rating to each content area.



The ratings of the content areas varied 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 F: 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 (93 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.

Almost one-third (31 percent) of those who offered a suggestion spoke of improvements to the training or program. Many comments focussed on the need to update course materials, textbooks, and manuals, while others suggested changes to the program itself, including the need for better organization.

Course materials must be more up to date, especially the computer related modules.

There is a disconnect between training and on the job experience.

The books and course outline need to be updated...including recent advancements in technology.

Update the training videos.

It could be more organized. There were times that I felt the program was disorganized.

More than one-quarter (26 percent) of those who made a suggestion said that they felt their in-school program should be longer.

A longer course, maybe eight to ten weeks long instead of six weeks and more hands-on training would help.

Put back the week of review at the end of the program in order to prepare for exams.

The program needs more time. They try to condense way too much material into the time they have, especially into the third and fourth years.

The program would benefit from being about a week longer...to cover all of the information...and better prepare students for their exam.

...The course was too intensive, we needed more time for the amount of material we had to cover.

Almost one-quarter (23 percent) of those who made a suggestion mentioned improvements to teaching. A large number of these respondents commented that 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.

There should be more one-on-one time with the instructors.

The class sizes are too large.

Consistency of teacher knowledge would be good.

I did not [like] that we had multiple teachers throughout the year because some were more effective than others....There should be one teacher for the program.

The institution should make sure the teachers are better qualified and prepared for their specific courses.

Some of instructors should do some upgrading since some of what they teach is no longer used in the field.

Approximately one-fifth (19 percent) of the respondents who made a suggestion requested that programs include more hands-on or practical experience.

The practical aspects of the program need to be lengthened as there was not enough time on each of the machines to get a real feel for them.

There should be more shop time...there was not enough practical experience.

More hands-on training is needed. There is too much theory and not enough practical work.

Increase the hands-on time so that it better reflects conditions potentially experienced in the field.

There were quite a few comments about tools and equipment: 13 percent of the respondents who made suggestions mentioned the tools, equipment, and technology used in the programs. Some of these respondents noted that the program would be better if there were more tools and equipment available and more time was spent with the equipment, but most focussed on the need for more up-to-date tools and equipment.

The program needs more equipment. We needed to share with each other and always felt rushed.

A lot of the equipment didn't work, was outdated and needed repair. Some of the equipment needs to be maintained or replaced.

New equipment for the labs. Current equipment doesn't demonstrate real world scenarios very well.

Appropriate tools in some areas would be good, not all equipment needed is at hand.

There were not enough pieces of heavy duty equipment to go around.

About 12 percent of respondents who offered suggestions mentioned exams; most suggested that students could be better prepared for examinations and should be told more about what will be on them.

They could provide a better outline to instructors of the program about the Red Seal examination and for the program's final examination as well.

For the IP exam we had not had enough time to review. More time is needed prior to taking the IP exam.

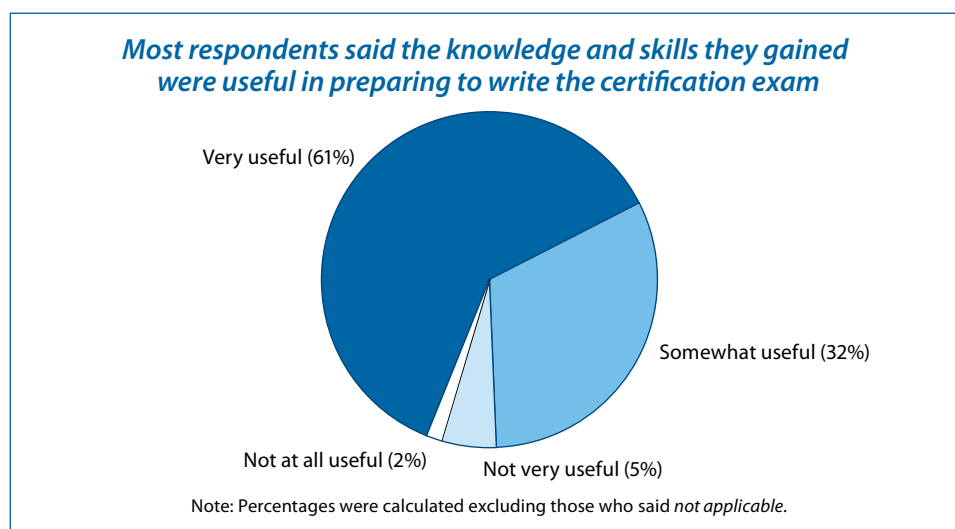
Course material taught in the program should reflect questions that would be asked on the inter-provincial examination.

How many respondents received certification?

The majority (89 percent) of respondents said they received their British Columbia Certificate of Qualification (C of Q)—many with Interprovincial or Red Seal endorsement. 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).

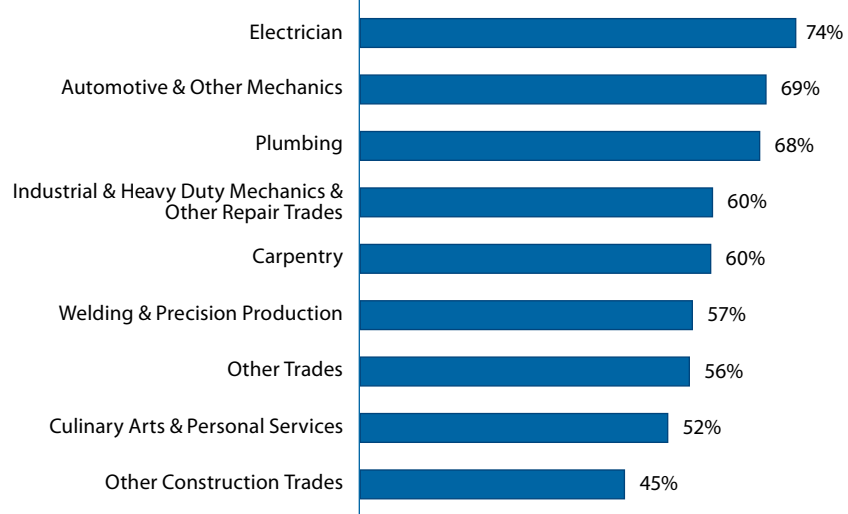
The results varied by program group. For example, 94 percent of former Welding & Precision Production students were certified, compared with 81 percent of those from Other Construction Trades programs. Please see [Appendix G: Certification by Program](#).

All respondents were asked how useful the knowledge and skills they gained from in-school training were in preparing to write their certification examinations (whether they had written them yet or not). Most (93 percent) said that what they gained from their training was *very useful* or *somewhat useful* to them in preparing to write the certification exam. Relatively few (5 percent) respondents said the question was *not applicable*.



Overall, almost two-thirds (61 percent) of respondents said the knowledge and skills they gained were *very useful* to them. This percentage varied considerably across program groups, from 74 percent of former Electrician students to 45 percent of those from Other Construction Trades. For more details, please see [Appendix H: 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?”

The majority of respondents from most program groups agreed the knowledge and skills they gained were very useful in preparing to write their certification exams



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

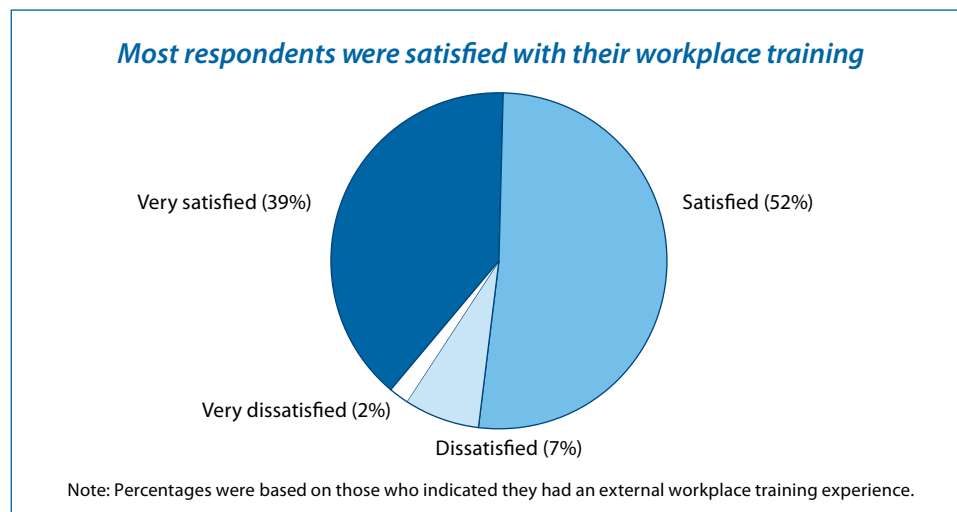
Workplace Experiences

Respondents to the 2013 APPSO Survey were asked if they had been employed as an apprentice or had a work placement outside their institution. Respondents who said *yes* were asked to rate their overall satisfaction with their workplace experience, to say how related their workplace experience was to their in-school training, and to give suggestions on how to improve the workplace experience.

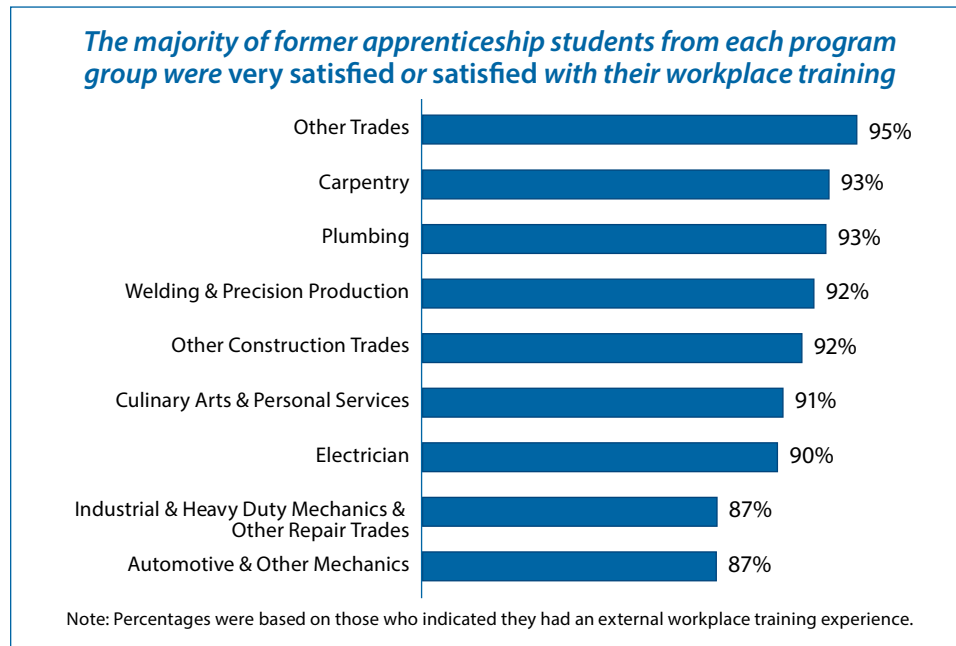
Over three-quarters (78 percent) of respondents said they had been an apprentice or had a work placement outside of the institution where they took their training. Workplace participation rates varied by program group—please see [Appendix I: Evaluation of Workplace Experience](#), under “Were you employed as an apprentice or did you have a work placement outside of your institution?”

How satisfied were respondents with their workplace training?

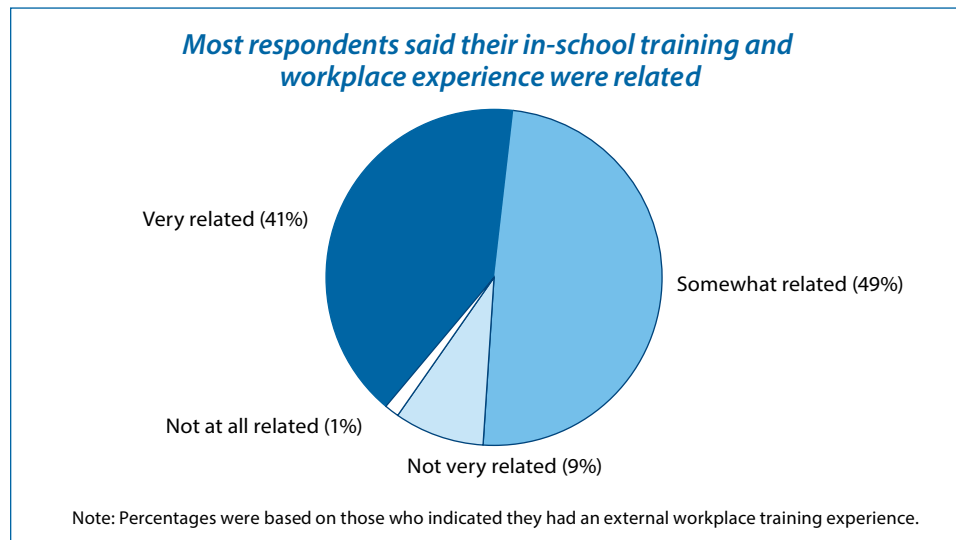
Most survey respondents (91 percent) said they were *very satisfied* or *satisfied* with their overall workplace training experience. This level of satisfaction has been fairly consistent over the previous five survey years.



Satisfaction levels were high across program groups, although there were some differences.



The majority (90 percent) of respondents said their in-school training was *very related* or *somewhat related* to their workplace experience. Very few (1 percent) said their in-school and workplace training were *not at all related*. These results have been consistent over the past five survey years.



Generally, over the past three years, ratings of the relatedness of in-school training to workplace experience have remained fairly stable for most program areas. In 2013, 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 93 percent (Carpentry) to 82 percent (Other Construction Trades). There was more variation in the percentages of those who said the training was *very related*—please see [Appendix I: Evaluation of Workplace Experience](#), under “How related was in-school training to the workplace experience?”

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 apprenticeship students surveyed were in the labour force—that is, they were either employed or looking for work. In comparison, the labour force participation rate (unadjusted) for the B.C. population aged 20 to 54 was 82 percent in March of 2013.⁶

The labour force participation rate for each program group was high, ranging from 91 percent for Other Trades to 100 percent for Automotive & Other Mechanics. Labour force participation rates were quite stable between 2012 and 2013. The largest change was a 6 percentage point decrease for Other Trades (from 97 percent in 2012 to 91 percent in 2013).

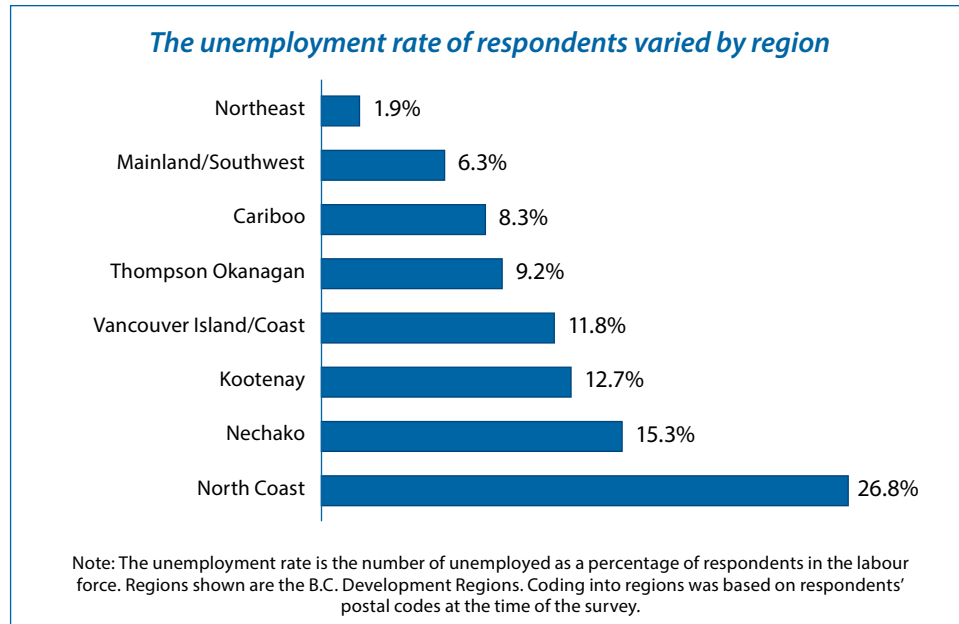
The unemployment rate—the number unemployed as a percentage of respondents in the labour force—was 8.7 percent. This rate has changed over time, from a low of 7.8 percent in 2009 to a high of 10.9 percent in 2011. The unemployment rate varied significantly by program group, ranging from 3.0 to 25.7 percent. Please see [Appendix J: Labour Market Outcomes](#).

The unemployment rate also varied by region—ranging from a low of 1.9 percent in the Northeast region to 26.8 percent in the North Coast.^{7,8} There have been a number of fluctuations over time. For example, in 2012, the unemployment rate in the Kootenay region was 5.9 percent, and in the North Coast, it was 9.6 percent.

6 Source: Statistics Canada, Labour Force Survey, 2013.

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

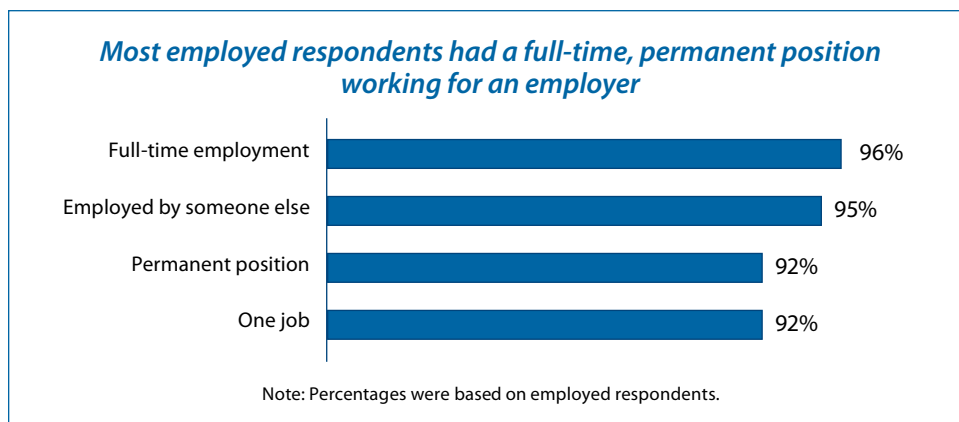
8 Cariboo: n = 210; Kootenay: n = 141; Mainland/Southwest: 1,607; Nechako: n = 74; North Coast: n = 75; Northeast: n = 106; Thompson Okanagan: n = 485; Vancouver Island/Coast: n = 587.



What were former students' employment outcomes?

At the time of the survey, 88 percent of respondents were employed. In approximately the same time period, March 2013, the employment rate (unadjusted) for the B.C. population aged 20 to 54 was 77 percent.⁹

Most employed respondents held just one job, and this job tended to be a permanent position, as opposed to a part-time or temporary one. Further, a large majority (96 percent) were employed full-time, and most respondents (95 percent) were employed by someone else rather than being self-employed.

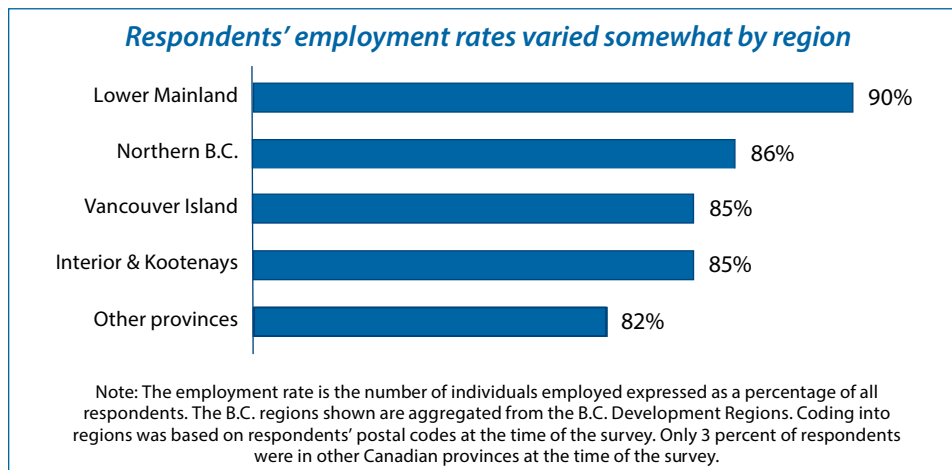


More than half (58 percent) of employed former apprenticeship students said they had done a work placement with their current employer. This is up from 47 percent in 2012.

Of those who did not do a work placement with their current employer, 94 percent found a job in less than six months; 61 percent found a job within one month.

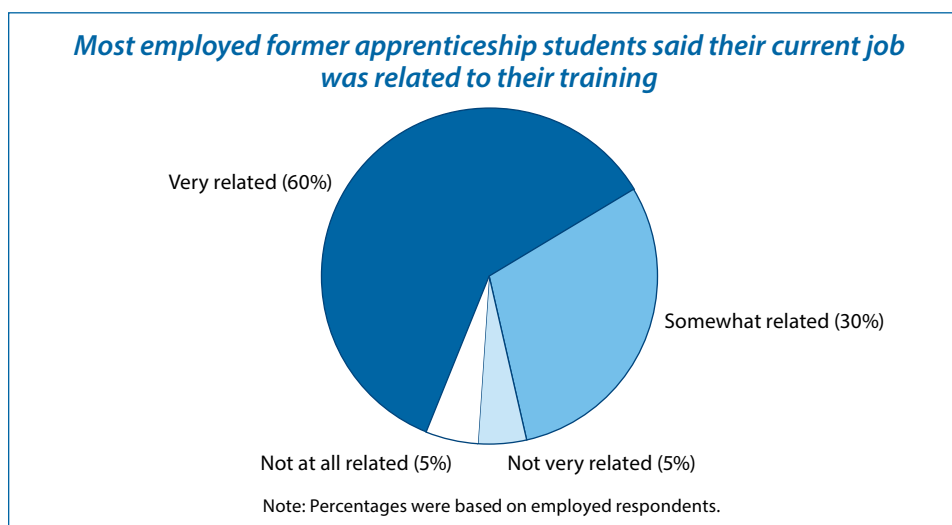
⁹ Source: Statistics Canada, Labour Force Survey, 2013.

Employment rates differed by region, varying somewhat across the province--from 90 percent in the Lower Mainland to 82 percent for respondents in other provinces. While attempts were made to survey former apprenticeship students who had left the province, it was more difficult to locate those who had moved to other provinces or out of the country. As such, most APPSO Survey respondents were located in British Columbia. Based on valid postal codes, 97 percent of 2013 respondents were in B.C. and about 3 percent were in other Canadian provinces at the time of the survey.¹⁰



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

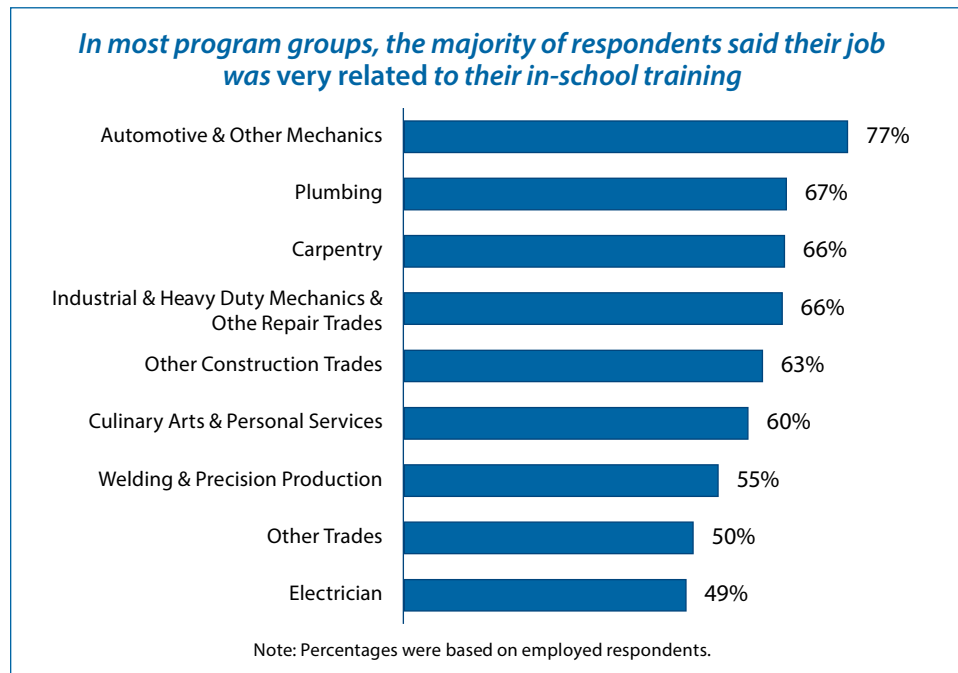
Employed respondents were asked to judge the extent to which their job was related to the in-school training they did. If they had more than one job,¹¹ they were asked to think about their main job—that is, the one at which they worked the most hours. Respondents' training and their employment was highly related—90 percent of those who answered the question said their employment was *very related* or *somewhat related* to their in-school training. The overall percentage has not changed since 2011.



10 The location of 2 percent of respondents was unknown and, as such, these respondents were not included in the calculation of percentages for region of residence.

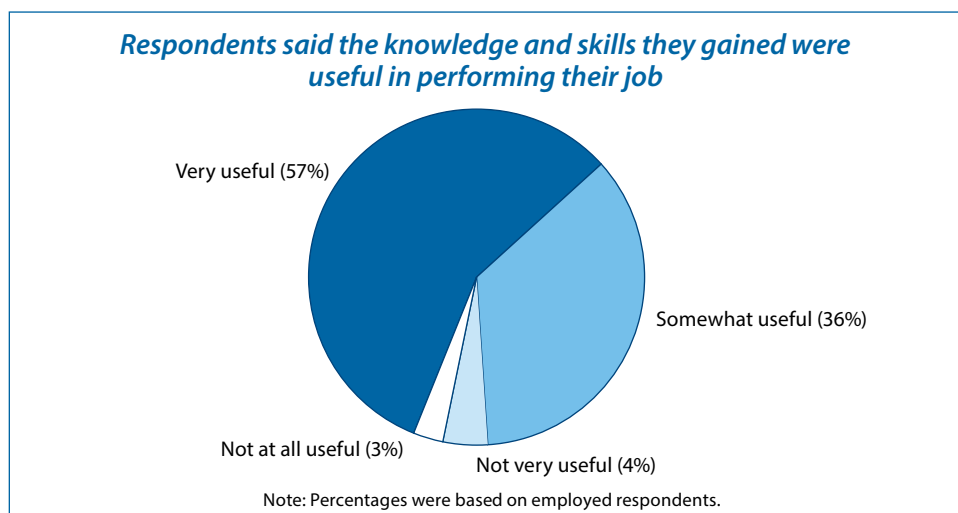
11 Approximately 7 percent of employed respondents had two jobs, and only 1 percent had three or more jobs.

The percentage of employed respondents who said their jobs were *very related* to their training varied across program group, ranging from 49 percent for former Electrician students to 77 percent for Automotive & Other Mechanics. The percentage that said their job was *very related* to their training was consistent between 2012 and 2013 for most program groups, with the exception of Other Trades and Electricians. In 2012, almost two-thirds (65 and 63 percent, respectively) of former apprenticeship students from Other Trades and Electrician programs said that their job was *very related* to their in-school training; in 2013, however, only half of respondents from these programs agreed that their jobs and training were *very related*.

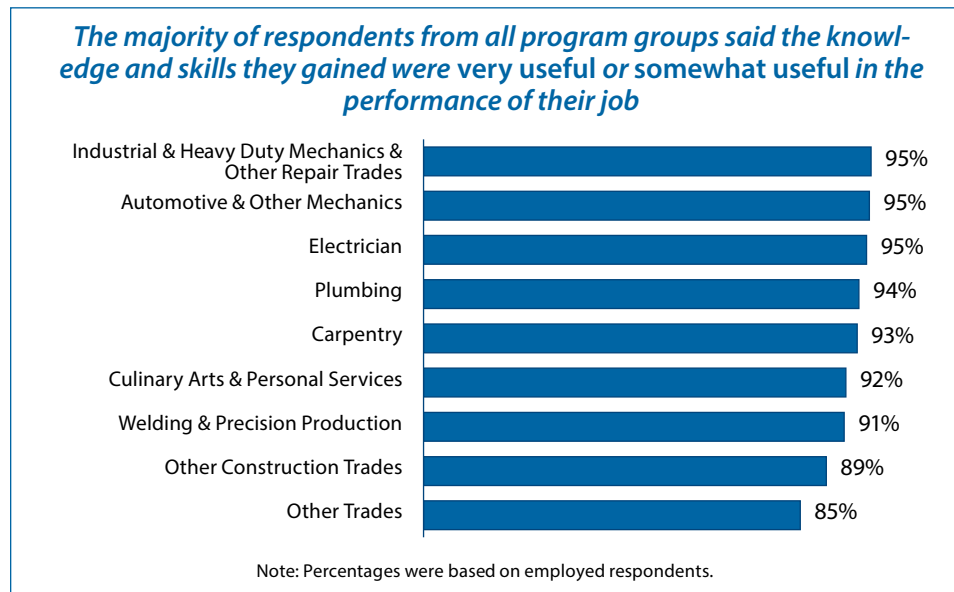


How useful were the knowledge and skills gained by former students?

Former apprenticeship students were also asked how useful the knowledge and skills they gained through their studies had been in performing their job. Again, a very large majority (93 percent) of respondents said they had been *very* or *somewhat useful*: 57 percent said *very useful* and 36 percent said *somewhat useful*.



The ratings across apprenticeship program groups were consistently high—from 85 to 95 percent of respondents from each group said that the knowledge and skills they gained were useful for their employment. (For detailed results by program group see [Appendix H: Usefulness of In-School Training by Program](#), under “How useful were the knowledge and skills gained in the program for performing your job?”)



What occupations did former apprenticeship students have?

A substantial majority—79 percent—of the employed respondents were working in Trades, Transport, and Equipment Operators and Related Occupations.¹² The remainder of the respondents were spread thinly across all the other occupational categories, although 15 percent were in Sales and Service Occupations.¹³

There was a strong relationship between former students’ apprenticeship programs and their occupations at the time of the survey. For example, of the respondents who apprenticed in the program group of Plumbing, 84 percent were employed as Plumbers, Pipefitters & Gas Fitters.¹⁴ (For detailed results see [Appendix K: Common Occupations by Program Group](#).)

12 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.

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

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

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.

At the time of the survey, the median hourly wage of employed respondents was \$28. This is consistent with the median hourly wage in 2012. Between 2005 and 2010, the median hourly wage among former apprenticeship students increased steadily—wage figures in each of the previous years were: \$24 (2005), \$25 (2006), \$27 (2007), \$28 (2008), \$29 (2009 and 2010).¹⁵ In 2011, the median hourly wage dropped by \$2 to \$27, rising again to \$28 in 2012. Respondents from programs that have always been part of APPSO had higher median hourly wages than did those from programs that were previously in DACSO (\$30 versus \$20).

The hourly wage varies across the different trades occupations. Among the 10 most common occupations for 2013 respondents, the median hourly wage ranges from a high of \$35 for Machinery & Transportation Equipment Mechanics to \$14 for Chefs & Cooks. This range is consistent with 2012 median wages.

Hourly wage varied significantly by occupation

Occupation	Respondents	Median Wage
Machinery & Transportation Equipment Mechanics	277	\$35
Electrical Trades & Telecommunication Occupations	392	\$32
Contractors & Supervisors, Trades & Related Workers	146	\$32
Masonry & Plastering Trades	34	\$29
Metal Forming, Shaping & Erecting Occupations	432	\$28
Plumbers, Pipefitters & Gas Fitters	233	\$28
Other Construction Trades	49	\$28
Motor Vehicle Mechanics	171	\$27
Carpenters & Cabinetmakers	267	\$26
Chefs & Cooks	285	\$14

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 the employed respondents who supplied occupation information.

¹⁵ These median wage amounts have not been adjusted for inflation.

Conclusion

Apprenticeship training has an extensive history in British Columbia and is receiving renewed emphasis through B.C.'s Skills and Training Plan. Closing the gap between the supply of and demand for technical and trades workers is an ongoing commitment for those responsible for apprenticeship in the province. The Apprenticeship Student Outcomes (APPSO) Survey provides vital information on former apprenticeship students, which is used for policy and program development and to ensure accountability.

The 2013 APPSO Survey collected information from former apprenticeship students who completed the final level of technical training courses offered by public or private institutions. While the majority studied in a public post-secondary institution, almost one-fifth of respondents were from private training institutions.

The percentage of female respondents to the survey has more than doubled since 2010. The addition of former apprenticeship students from welder and shorter-term cook programs has contributed significantly to the increase. However, the percentage of female respondents compared to male respondents is still low.

More than half of the former apprentices surveyed had previous post-secondary education, and many already had a trades qualification or credential. Over one-quarter had taken pre-apprenticeship or industry foundation training.

Since 2005, APPSO Survey respondents have reported high levels of overall satisfaction with their in-school training. Most former apprenticeship students surveyed in 2013 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 programs helped them develop skills, such as the abilities to analyse and think critically, read and comprehend material, and work effectively with others. These are valuable professional skills for those working in trades occupations.

As they have in previous years, respondents gave high ratings to the quality of instruction. They also gave positive ratings to the quality of tools and equipment and the organization of the program. Former apprentices were also 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*.

Two-thirds of former apprenticeship students said the length of their in-school program was about right, while almost one-third said it was too short. The percentage saying the program was too short has been fairly consistent over the last few years, but does vary quite a lot by program group, with former Carpentry students being the most likely in 2013 to say their in-school training was not long enough.

Two-thirds of former apprentices offered suggestions to improve the in-school training. A large number of comments focussed on the need for more time to cover the material presented, supporting the finding that a significant number of respondents thought the program was too short. Other comments noted that more time should be given to practical or hands-on training.

Despite high ratings given to the quality of instruction, a number of suggestions mentioned the need to improve teaching. Many respondents noted there were problems related to inconsistencies in instruction or the lack of availability of teachers for one-on-one training.

When specifically asked to rate the content of their program with regard to being up-to-date, the majority of respondents were positive; however this item received lower ratings than did the other items. A number of the suggestions for improving the program supported the opinion that tools and equipment as well as materials and textbooks needed to be updated.

At the time of the survey, almost nine out of ten respondents had achieved their Certificate of Qualification. Whether they had their certificate or not, most respondents said that what they gained from their training was *very useful* or *somewhat useful* to them in preparing to write the certification exam.

More than three-quarters of the respondents to the 2013 survey said they worked outside their training institution, either through a work placement or employment as an apprentice. The majority of those who did not work outside the institution were from three program groups—Culinary Arts & Personal Services, Welding & Precision Production, and Other Trades—which include programs that were previously surveyed in DACSO, e.g., short-term cook and welder programs.

Most of the former apprenticeship students surveyed were satisfied with their workplace training experience and said their in-school technical training was *very related* or *somewhat related* to their workplace experience.

Almost all of the former apprentices surveyed were in the labour force—this rate has been high every year since 2005. The unemployment rate has not significantly changed from 2012, but it was lower than the level reported in 2011. Across the province, rates varied considerably.

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. More than half of employed former apprentices had done a work placement with their current employer.

The majority of respondents said their job was related to their apprenticeship training. Further, they reported that the knowledge and skills they gained through their training were useful to them in the performance of their jobs. There was a strong relationship between respondents' apprenticeship training and their occupations at the time of the survey, and former apprentices' median wage has remained consistent since 2012.

Former apprenticeship students who were surveyed in 2013 gave high ratings to their in-school and workplace training, and their labour force participation and employment rates were above the averages for the B.C. population aged 20 to 54. These outcomes reflect positively on those who have completed apprenticeships and bode well for technical trades training 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, 2011 and June 30, 2012 at a B.C. public post-secondary institution or at a B.C. private training institution.

Since 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 demographic and program-related elements.

There were 38 B.C. post-secondary institutions that participated in this project—14 of them were public. These public institutions provided 82 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.

Public Institutions	Eligible for Survey	Respondents	Response Rate
British Columbia Institute of Technology	1,435	826	58%
Okanagan College	623	333	53%
Vancouver Community College	460	238	52%
Camosun College	446	265	59%
Thompson Rivers University	427	223	52%
College of New Caledonia	346	194	56%
Vancouver Island University	312	161	52%
Kwantlen Polytechnic University	306	162	53%
University of the Fraser Valley	184	117	64%
North Island College	169	100	59%
College of the Rockies	121	62	51%
Northwest Community College	116	71	61%
Northern Lights College	95	57	60%
Selkirk College	84	43	51%
Public Institutions Total	5,124	2,852	56%

<i>Participating private institutions</i>			
Private Institutions	Eligible for Survey	Respondents	Response Rate
Pacific Vocational College	229	122	53%
Piping Industry Apprenticeship Board	110	66	60%
Joint Apprentice Refrigeration Trade School	96	65	68%
Electrical Industry Training Institute	80	52	65%
R.C.A.B.C. Roofing Institute	78	41	53%
Trowel Trades Training Association	67	35	52%
The Finishing Trades Institute of B.C.	64	33	52%
IUOE Local 115 Training Association	51	36	71%
Northwest Culinary Academy of Vancouver	48	27	56%
Sheet Metal Workers Training Centre	40	24	60%
Salvation Army Cascade Culinary Arts School	34	22	65%
White Spot Ltd.	29	18	62%
Taylor Pro Training	22	13	59%
Piledrivers, Divers, Bridge, Dock, Loc. 2404	20	15	75%
Funeral Service Association of BC	17	15	88%
BC Wall & Ceiling Association	15	8	53%
Christian Labour Association of Canada	15	9	60%
Discovery Community College	15	6	40%
Enform Canada	14	8	57%
VanAsep Training Society	10	6	60%
BC Floor Covering Joint Conference Society	#	#	#
Riverside College	#	#	#
Quadrant Marine Institute	#	#	#
Secwepemc Cultural Education Society	#	#	#
Private Institutions Total	1,076	634	59%

Note: Low numbers have been 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 7 to January 10, 2013, using a sub-sample of the available cohort—150 former students were surveyed.

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

- Sending personalized emails to all email addresses and re-emailing 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 16 to April 29, 2013. The average administration time of the telephone survey was 14 minutes. This was the second year that an online survey option was offered, and of the 3,486 survey completions, 925 were done online. The online response rate was 15 percent; the telephone rate was 41 percent—the overall response rate was 56 percent.

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

Final call dispositions
2013 Apprenticeship Student Outcomes Survey

Call Result	n	% of Cohort
Completion	3,486	56%
Refusal	543	9%
Ineligible (did not attend during time frame, still in same program)	92	1%
Wrong or unknown number (not in service, wrong, incomplete, or no phone number)	1,014	16%
No response (no answer, left message, busy signal, fax/modem line)	810	13%
Other dispositions (moved, travelling, problem communicating, incomplete survey)	255	4%
Total	6,200	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 2013 survey were first released through the web-based Student Outcomes Reporting System (SORS) on June 24, 2013. Apprenticeship SORS provides access to nine 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—56 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: Progressive Credential 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 2013 were the same as those used in 2012 and 2011; the resulting cohort from the programs that were moved from DACSO to APPSO was similar to that of 2012.

From the 2013 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 are to be included in the APPSO cohort.

There were 854 respondents from programs formerly in DACSO; they were in the apprenticeship program groups of Carpentry, Culinary Arts & Personal Services, Industrial & Heavy Duty Mechanics & Other Repair Trades, and Welding & Precision Production. Almost half (49 percent) of the Culinary Arts & Personal Services respondents and two-thirds (66 percent) of the Welding & Precision Production respondents 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.

Program group	From programs previously in DACSO		From programs already in APPSO		Total program group	
	n	%	n	%	n	%
Carpentry	26	7%	353	93%	379	100%
Culinary Arts & Personal Services	266	51%	259	49%	525	100%
Industrial & Heavy Duty Mechanics & Other Repair Trades	17	5%	320	95%	337	100%
Welding & Precision Production	545	66%	283	34%	828	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 some aspects of their programs, such as the amount of practical experience and the quality of tools and equipment.

The addition of respondents who would previously have been surveyed in DACSO had an impact on employment outcomes, 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; although the differences for the Industrial & Heavy Duty Mechanics & Other Repair Trades and Welding & Precision Production program groups were statistically significant.

Overall, the unemployment rate has been affected by the addition of the younger and less experienced respondents, but there are no significant differences by group. Likewise, the overall certification rate was different: the respondents from programs previously in DACSO were more likely than other respondents to have achieved their Certificate of Qualification by the time they were surveyed. Finally, respondents from programs previously in DACSO reported lower median hourly wages (\$20) than did their counterparts from programs already in APPSO (\$30).

<i>Employment outcomes for respondents previously in DACSO and already in APPSO</i>			
Program group	From programs previously in DACSO	From programs already in APPSO	Total program group
	%	%	%
Labour force			
Carpentry	96%	97%	97%
Culinary Arts & Personal Services	94%	95%	95%
* Industrial & Heavy Duty Mechanics & Other Repair Trades	82%	99%	99%
* Welding & Precision Production	93%	97%	94%
Unemployment			
Carpentry	16.0%	9.9%	10.4%
Culinary Arts & Personal Services	12.0%	6.9%	9.5%
* Industrial & Heavy Duty Mechanics & Other Repair Trades	21.4%	2.2%	3.0%
Welding & Precision Production	12.7%	9.5%	11.6%
Certification			
Carpentry	88%	88%	88%
Culinary Arts & Personal Services	90%	88%	89%
Industrial & Heavy Duty Mechanics & Other Repair Trades	75%	91%	90%
Welding & Precision Production	94%	92%	94%
Median Hourly Wage			
	\$	\$	\$
* Carpentry	\$17	\$27	\$27
* Culinary Arts & Personal Services	\$13	\$15	\$14
* Industrial & Heavy Duty Mechanics & Other Repair Trades	\$25	\$35	\$35
* Welding & Precision Production	\$25	\$30	\$27

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

Appendix C: ACE IT Programs

The ACE IT program allows high school students to take first level technical training, giving them credit for both high school courses and apprenticeship or industry training programs. This program is a partnership between the ITA and the BC Ministry of Education.

Results for skill development, in-school experiences, and employment outcomes for ACE IT program participants

	# Non ACE IT	# ACE IT	# Overall
Cohort	6,010	190	6,200
Respondents	3,376	110	3,486
	% Non ACE IT	% ACE IT	% Overall
Cohort	96.9	3.1	100.0
Respondents	96.8	3.2	100.0
In labour market	96.4	91.8	96.3
Employed	88.2	71.8	87.7
Unemployed	8.3	21.8	8.7
Median salary	\$28.00	\$15.00	\$28.00
Job training related	90.8	72.2	90.3
Age under 25	31.4	99.1	33.6
Q51 Very well + Well	% Non ACE IT	% ACE IT	% Overall
Q51A Write clearly and concisely	73.1	80.6	73.4
Q51B Speak effectively	73.9	77.3	74.0
Q51J Read and comprehend material	82.9	86.2	83.0
Q51D Work effectively with others	82.5	90.0	82.8
Q51E1 Analyse and think critically	83.6	87.3	83.7
Q51E2 Resolve issues or problems	78.1	84.9	78.3
Q51I Learn on your own	82.1	89.9	82.3
Q52 Very good + Good			
Q52A Quality of instruction	85.6	88.2	85.7
Q52D Amount of practical experience during in-school training	71.0	97.3	71.9
Q52B The organization of the program	76.5	84.5	76.8
Q52I Quality of tools and equipment used in your program	78.2	88.1	78.6
Q52E Textbooks and learning materials	74.7	87.3	75.1
Q52A Very good + Good			
Q52AA Being up to date	73.6	89.9	74.1
Q52AB Covering the topics most relevant to your field	77.9	96.4	78.5
Q52AC Covering the standards being used in your field	83.3	95.5	83.7

Appendix D: Apprenticeship Program Groups and Institutions' Programs

<i>Institution names and codes</i>	
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
JARTS	Joint Apprentice Refrigeration Trade School
JTS	The Finishing Trades Institute of BC
KPU	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
TPRO	Taylor Pro Training
TRU	Thompson Rivers University
TTTA	Trowel Trades Training Association
UFV	University of the Fraser Valley
VANAS	VanAsep Training Society
VCC	Vancouver Community College
VIU	Vancouver Island University
WSPOT	White Spot Ltd.

<i>Institution program names</i>			
Program group	Institution	Institution's program name	Respondents
Automotive & Other Mechanics			
	BCIT	Automotive Technician Apprentice	35
		Automotive Technician GM (ASEP) Apprentice	5
		Commercial Transport Apprentice	28
		Motorcycle Mechanic Apprentice	#
	CAM	Automotive Service Technician - Apprenticeship Training	9
	CNC	Automotive Mechanics IV	5
	KPU	Apprentice-Automotive Service	6
	NLC	Automotive Service Tech Apprentice Level 4	#
		Commercial Transport Tech Apprentice Level 4	9
	OKN	Apprentice Auto Body	5
		Apprentice Auto Paint/Refinishing	#
		Apprentice Automotive Service Technician	14
		Apprentice RV Technician	8
	QUADR	Marine Service Technician Apprenticeship	#
	RIVER	Automotive Service Technician 1 Apprenticeship	#
	TRU	Commercial Transport Vehicle Apprenticeship	9
	UFV	Automotive Service Technician Apprenticeship	21
	VCC	Auto Collision Repair Apprentice Level 3	26
		Auto Paint & Refinishing Apprentice Level 1	6
		Auto Refinishing Prep Apprentice Level 1	#
		Auto Tech Apprentice Level 4	15
		Diesel Commercial Transport Mechanic Apprentice Level 4	15
		Diesel Heavy Duty Mechanics Apprentice Level 4	14
	VIU	Automotive Apprenticeship	#
Carpentry			
	BCIT	Carpentry Apprentice	96
	CAM	Carpenter - Apprenticeship Training	53
	CNC	Carpentry IV	21
	COTR	Carpentry Apprenticeship Level Four Program	10
	DCC	Residential Construction Framing Technician Apprenticeship	#
		Residential Framing Technician Apprenticeship	#
	KPU	Apprentice-Carpentry	22
	NIC	Apprenticeship Technical Training: Carpentry	17
	NLC	Carpentry Apprentice Level 4	7
		* Residential Construction Trades Training	#
	NWCC	Carpentry Apprentice - Level 4	9
	OKN	Apprentice Carpentry	51
		* Residential Construction	23
	SEL	Apprentice Year 4-Carpentry	12
	TRU	Carpentry Apprentice	20
	UFV	Carpentry Apprenticeship	5
	VIU	Carpentry Apprenticeship	24

Note: Low numbers have been masked to preserve confidentiality.
* Programs previously in DACSO.

<i>Institution program names</i>			
Program group	Institution	Institution's program name	Respondents
Culinary Arts & Personal Services			
	CAM	Professional Cook - Apprenticeship Training	29
		* Professional Cook Foundation - Level 1	27
		* Professional Cook Foundation - Level 2	6
	CCAS	Professional Cook 1 Apprenticeship	18
		Professional Cook 2 Apprenticeship	#
	CNC	* CTC Culinary Arts	#
		* Professional Cook I	#
		Professional Cook II	#
		* Professional Cook II	12
	COTR	* Professional Cook 1	8
	FSABC	Embalmer and Funeral Director Apprenticeship	11
		Funeral Director Apprenticeship	#
	NIC	* Professional Cook 1 Certificate	18
		* Professional Cook 2 Certificate	8
		Professional Cook 3 Certificate	6
	NLC	Cook 1/Camp Cook	6
	NWCAV	Professional Cook 1 Apprenticeship	25
		Professional Cook 2 Apprenticeship	#
	NWCC	* Professional Cook 1	#
		* Professional Cook Apprentice - Level 2	#
		Professional Cook Apprentice - Level 3	#
	OKN	Apprentice Cook	13
		* Culinary Arts Certificate	18
		* Culinary Arts Level 1 Dual Credit	18
	SEL	* Professional Cook 2 Institutional Entry	9
	TRU	Meat Cutting Apprenticeship	10
		Professional Cook 1	20
		Professional Cook 2	8
		* Professional Cook Apprentice	#
	UFV	Cook Training Certificate	11
	VCC	Baking & Pastry Apprentice Level 3	8
		Cook Foundation	25
		* Culinary Arts	101
		Culinary Arts - Aboriginal Specialty	#
		Culinary Arts Apprentice Level 3	22
	VIU	Baking Apprenticeship	9
		* Culinary Arts - Previously Foundation	28
	WSPOT	Professional Cook 1 Apprenticeship	9
		Professional Cook 2 Apprenticeship	9

Note: Low numbers have been masked to preserve confidentiality.
 * Programs previously in DACSO.

<i>Institution program names</i>			
Program group	Institution	Institution's program name	Respondents
Electrician			
	BCIT	Electrical Apprentice	242
	CAM	Electrician - Apprenticeship Training	38
	CNC	Electrical Apprentice IV	26
	COTR	Electrical Apprenticeship Year 4	7
	EITI	Power Line Technician Apprenticeship	36
	NIC	Apprenticeship Technical Training: Construction Electrician	15
	NLC	Electrician Apprenticeship Level 4	9
	NWCC	Electrical Apprentice - Level 4	#
	OKN	Apprentice Electrician	61
	SEL	Apprenticeship Year 4 - Electrical	9
	TRU	Electrical Apprenticeship	46
	UFV	Electricity Apprenticeship	27
	VIU	Electrical/Electronic Technician Apprenticeship	25
Industrial & Heavy Duty Mechanics & Other Repair Trades			
	BCIT	Heat/Frost Insulation Apprentice	#
		Heavy Duty Mechanic Apprentice	18
		Industrial Instrumentation Apprentice	17
		Millwright Apprentice	29
		Refrigeration Apprentice	15
	CNC	Heavy Duty Mechanic IV	12
		Heavy Duty Mechanic/Commercial Transport-4 th Year	5
		Millwright IV	36
	COTR	Heavy Duty Equipment Technician Year 4	16
		Industrial Mechanic Apprenticeship Year 4	5
	JARTS	Refrigeration & Air Conditioning Mechanic (Refrigeration Mechanic)	65
	KPU	Apprentice-Millwright	16
		Apprentice-Partsperson	7
		* Citation in Parts & Warehousing	5
	NLC	Heavy Duty Technician Apprentice Level 4	11
	OKN	Apprentice Heavy Duty Equipment	8
		Apprentice Refrigeration and Air Conditioning	5
	TRU	Heavy Duty Mechanics Apprenticeship	15
		Industrial Electrical Apprenticeship	19
		* Parts/Warehousing Foundation	12
	VIU	Heavy Duty Mechanic Apprenticeship	19
Other Construction Trades			
	BCFC	Floor Covering Installer Apprenticeship	#
	BCWCA	Lather (Interior Systems Mechanic) (Wall & Ceiling Installer) Apprenticeship	8
	JTS	Drywall Finisher Apprenticeship	#
		Glazier Apprenticeship	8
		Lather (Interior Systems Mechanic) (Wall & Ceiling Installer) Apprenticeship	#
		Painter And Decorator Apprenticeship	19
	NIC	Residential Building Maintenance Worker	#
	RCABC	Roofer (Roofer, Damp and Waterproofing) Apprenticeship	34
	SECWE	Residential Building Maintenance Worker Apprenticeship	#
	TRU	Glazier Apprenticeship	6
	TTTA	Bricklayer (Mason) Apprenticeship	26
		Concrete Finisher (Cement Mason) Apprenticeship	6
		Tilesetter Apprenticeship	#

Note: Low numbers have been masked to preserve confidentiality.

* Programs previously in DACSO.

<i>Institution program names</i>			
Program group	Institution	Institution's program name	Respondents
Other Trades			
	CLAC	Heavy Equipment Operator Apprenticeship	9
	CNC	Mobile Crane Operator	#
	EITI	Utility Arborist Apprenticeship	16
	KPU	Apprentice-Landscape Horticulture	15
		Apprentice-Production Horticulture	#
	NWCC	Heavy Equipment Operator Technician	33
	OETC	Boom Truck Operator - Stiff Boom unlimited tonnage Apprenticeship	#
		Heavy Equipment Operator Apprenticeship	28
		Mobile Crane Operator - Lattice Boom Friction Apprenticeship	6
	PDBD	Piledriver And Bridgeworker Apprenticeship	15
	TPRO	Heavy Equipment Operator Apprenticeship	13
	VANAS	Heavy Equipment Operator Apprenticeship	6
Plumbing			
	BCIT	Gasfitting Apprentice	8
		Plumbing Apprentice	57
		Steamfitting Apprentice	9
	CAM	Domestic/Commercial Gasfitter - Apprenticeship Training	#
		Plumber - Apprenticeship Training	26
		Sprinkler Fitter - Apprenticeship Training	#
		Steam/Pipefitter - Apprenticeship Training	#
	COTR	Plumber Apprenticeship Year 4	#
	ENFORM	Rig Technician Apprenticeship	8
	NIC	Apprenticeship Technical Training: Plumbing	6
	NLC	Plumber Apprentice Level 4	#
	OKN	Apprentice Plumbing	26
	PVC	Domestic/Commercial Gasfitter Apprenticeship	31
		Plumber Apprenticeship	74
		Sprinkler System Installer Apprenticeship	17
	PIPE	Plumber Apprenticeship	45
		Sprinkler System Installer Apprenticeship	5
		Steamfitter-Pipefitter Apprenticeship	8
	TRU	Apprenticeship Gas Fitter	5
		Plumbing Apprenticeship	5
<p>Note: Low numbers have been masked to preserve confidentiality. * Programs previously in DACSO.</p>			

<i>Institution program names</i>			
Program group	Institution	Institution's program name	Respondents
Welding & Precision Production			
	BCIT	Benchperson Apprentice	21
		Boilermaker Apprentice	#
		Circular Sawfiler Apprentice	#
		Ironworker Generalist Apprentice	14
		Joinery (Cabinetmaker) Apprentice	35
		Machinist Apprentice	34
		Metal Fabricator Apprentice	22
		Sheet Metal Apprentice	17
		Tool and Die Maker	#
		* Welding Level A	17
		* Welding Level B	24
		* Welding Level C Foundation	71
	CAM	Metal Fabricator - Apprenticeship Training	#
		Sheet Metal Worker - Apprenticeship Training	18
		Welder - Apprenticeship Training	#
		* Welding "C" Foundation	38
		* Welding Level A	7
		* Welding Level B	#
	CNC	* CTC Welding	#
		* CTC Welding / Fitting	8
		Machinist IV	#
		* Welding - Level A	11
		Welding Level B	5
		* Welding - Level B	13
		* Welding - Level C	19
		Welding Apprentice – Year 3	#
	COTR	Welding Apprenticeship Level 4	#
		* Welding B Level	#
		* Welding C Level	9
	KPU	* Certificate in Welding C (High School ACE IT)	7
		* Citation in Welding-Level A	13
		* Citation in Welding-Level B	21
		* Welding-Level C	47
	NIC	* Welding Level A	#
		* Welding Level B	#
		* Welding Level C	22
	NLC	* Welding Level B	#
		* Welding Level C	#
	NWCC	* ACE IT Welding	#
		* Welding A Module	5
		Welding Apprentice – Level 4	#
		* Welding B Module	#
		* Welding C Module	6
	OKN	Apprentice Sheet Metal	5
		* Welding Level A Certificate	7
		* Welding Level B Certificate	11
		* Welding Level C	56
	PIPE	Welder Level 'C' Apprenticeship	8

Note: Low numbers have been masked to preserve confidentiality.

* Programs previously in DACSO.

<i>Institution program names</i>			
Program group	Institution	Institution's program name	Respondents
Welding & Precision Production cont.			
	RCABC	Architectural Sheet Metal Worker Apprenticeship	7
	SEL	* Welding-Level "A"	#
		* Welding-Level "B"	#
		* Welding-Level "C"	8
	SMWTC	Sheet Metal Worker Apprenticeship	24
	TRU	Welding Apprenticeship	#
		* Welding Level A	6
		* Welding Level B	13
		* Welding Level C	24
	UFV	* Welding Level A Certificate	8
		* Welding Level B Certificate	11
		* Welding Level C Certificate	34
	VIU	Welding - Level 'A' Certificate	5
		Welding - Level 'B' Certificate	11
		Welding - Level 'C' Certificate	38
Note: Low numbers have been masked to preserve confidentiality. * Programs previously in DACSO.			

Appendix E: Response Rates by Program

<i>Response rates by program</i>			
Apprenticeship program group	Eligible for Survey	Respondents	Response Rate
Automotive & Other Mechanics	423	253	60%
Carpentry	681	379	56%
Culinary Arts & Personal Services	920	525	57%
Electrician	1,022	543	53%
Industrial & Heavy Duty Mechanics & Other Repair Trades	559	337	60%
Other Construction Trades	242	125	52%
Other Trades	231	150	65%
Plumbing	623	346	56%
Welding & Precision Production	1,499	828	55%
Overall	6,200	3,486	56%

Appendix F: Ratings of In-School Training by Program

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

Apprenticeship program group	Analyse & think critically	Read & comprehend material	Work effectively with others
Automotive & Other Mechanics	88%	85%	86%
Carpentry	84%	82%	83%
Culinary Arts & Personal Services	83%	81%	87%
Electrician	84%	85%	79%
Industrial & Heavy Duty Mechanics & Other Repair Trades	79%	74%	72%
Other Construction Trades	76%	75%	83%
Other Trades	85%	83%	88%
Plumbing	84%	88%	81%
Welding & Precision Production	85%	85%	85%
Overall	84%	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*.

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

Apprenticeship program group	Learn on own	Resolve issues or problems	Speak effectively	Write clearly & concisely
Automotive & Other Mechanics	85%	86%	82%	77%
Carpentry	82%	76%	67%	69%
Culinary Arts & Personal Services	82%	76%	74%	74%
Electrician	80%	78%	69%	69%
Industrial & Heavy Duty Mechanics & Other Repair Trades	73%	74%	66%	61%
Other Construction Trades	75%	73%	70%	69%
Other Trades	86%	79%	79%	76%
Plumbing	81%	76%	76%	75%
Welding & Precision Production	88%	82%	81%	84%
Overall	82%	78%	74%	73%

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*.

How did respondents rate aspects of in-school training?

Apprenticeship program group	Quality of instruction	Quality of tools & equipment	Organization of the program
Automotive & Other Mechanics	91%	74%	83%
Carpentry	84%	86%	77%
Culinary Arts & Personal Services	87%	86%	78%
Electrician	85%	73%	75%
Industrial & Heavy Duty Mechanics & Other Repair Trades	80%	60%	69%
Other Construction Trades	77%	72%	72%
Other Trades	81%	88%	67%
Plumbing	88%	80%	77%
Welding & Precision Production	88%	82%	80%
Overall	86%	79%	77%

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*.

How did respondents rate aspects of in-school training?

Apprenticeship program group	Textbooks & learning materials	Amount of practical experience
Automotive & Other Mechanics	75%	74%
Carpentry	72%	74%
Culinary Arts & Personal Services	81%	86%
Electrician	67%	54%
Industrial & Heavy Duty Mechanics & Other Repair Trades	70%	53%
Other Construction Trades	68%	75%
Other Trades	85%	66%
Plumbing	79%	53%
Welding & Precision Production	77%	89%
Overall	75%	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*.

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

Apprenticeship program group	About right	Too short	Too long
Automotive & Other Mechanics	62%	35%	3%
Carpentry	43%	55%	3%
Culinary Arts & Personal Services	71%	25%	4%
Electrician	75%	22%	3%
Industrial & Heavy Duty Mechanics & Other Repair Trades	58%	38%	4%
Other Construction Trades	70%	29%	1%
Other Trades	61%	27%	12%
Plumbing	62%	33%	4%
Welding & Precision Production	76%	17%	7%
Overall	66%	29%	5%

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

Apprenticeship program group	Covering standards in use	Covering relevant topics	Being up-to-date
Automotive & Other Mechanics	83%	82%	69%
Carpentry	85%	81%	78%
Culinary Arts & Personal Services	87%	86%	82%
Electrician	82%	71%	60%
Industrial & Heavy Duty Mechanics & Other Repair Trades	72%	64%	62%
Other Construction Trades	80%	68%	66%
Other Trades	89%	84%	87%
Plumbing	86%	75%	78%
Welding & Precision Production	86%	84%	81%
Overall	84%	79%	74%

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*.

Appendix G: Certification by Program

<i>Did respondents get their Certificate of Qualification?</i>		
Apprenticeship program group	Percent qualified	Number qualified
Automotive & Other Mechanics	85%	211
Carpentry	88%	323
Culinary Arts & Personal Services	89%	453
Electrician	88%	466
Industrial & Heavy Duty Mechanics & Other Repair Trades	90%	300
Other Construction Trades	81%	98
Other Trades	82%	122
Plumbing	88%	301
Welding & Precision Production	94%	748
Overall	89%	3,022

Appendix H: Usefulness of In-School Training by Program

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

Apprenticeship program group	Very useful	Somewhat useful	Not very or not at all useful
Automotive & Other Mechanics	69%	24%	6%
Carpentry	60%	35%	6%
Culinary Arts & Personal Services	52%	40%	8%
Electrician	74%	23%	3%
Industrial & Heavy Duty Mechanics & Other Repair Trades	60%	31%	9%
Other Construction Trades	45%	38%	17%
Other Trades	56%	35%	8%
Plumbing	68%	26%	6%
Welding & Precision Production	57%	37%	6%
Overall	61%	32%	7%

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

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

Apprenticeship program group	Very useful	Somewhat useful	Not very or not at all useful
Automotive & Other Mechanics	67%	28%	5%
Carpentry	59%	34%	7%
Culinary Arts & Personal Services	59%	33%	8%
Electrician	48%	47%	5%
Industrial & Heavy Duty Mechanics & Other Repair Trades	58%	37%	5%
Other Construction Trades	57%	32%	11%
Other Trades	54%	31%	15%
Plumbing	57%	37%	6%
Welding & Precision Production	59%	32%	9%
Overall	57%	36%	7%

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

Appendix I: Evaluation of Workplace Experience

<i>Were you employed as an apprentice or did you have a work placement outside of your institution?</i>		
Apprenticeship program group	Percent workplace	Number workplace
Automotive & Other Mechanics	96%	243
Carpentry	90%	340
Culinary Arts & Personal Services	66%	341
Electrician	94%	508
Industrial & Heavy Duty Mechanics & Other Repair Trades	93%	311
Other Construction Trades	87%	108
Other Trades	52%	77
Plumbing	92%	316
Welding & Precision Production	56%	462
Overall	78%	2,706

<i>How related was in-school training to the workplace experience?</i>			
Apprenticeship program group	Very related	Somewhat related	Not very or not at all related
Automotive & Other Mechanics	51%	40%	9%
Carpentry	43%	50%	7%
Culinary Arts & Personal Services	48%	45%	8%
Electrician	25%	60%	14%
Industrial & Heavy Duty Mechanics & Other Repair Trades	38%	51%	10%
Other Construction Trades	43%	40%	18%
Other Trades	42%	51%	8%
Plumbing	41%	48%	11%
Welding & Precision Production	46%	47%	7%
Overall	41%	49%	10%

Appendix J: Labour Market Outcomes

What was the labour force participation rate?

Apprenticeship program group	2010	2011	2012	2013
Automotive & Other Mechanics	98%	98%	99%	100%
Carpentry	96%	95%	96%	97%
Culinary Arts & Personal Services	92%	89%	93%	95%
Electrician	98%	98%	98%	98%
Industrial & Heavy Duty Mechanics & Other Repair Trades	99%	99%	100%	99%
Other Construction Trades	92%	94%	98%	94%
Other Trades	94%	96%	97%	91%
Plumbing	97%	98%	97%	98%
Welding & Precision Production	96%	93%	94%	94%
Overall	97%	95%	96%	96%

What was the unemployment rate?

Apprenticeship program group	2010	2011	2012	2013
Automotive & Other Mechanics	6.2%	3.9%	2.8%	3.2%
Carpentry	12.0%	15.3%	10.5%	10.4%
Culinary Arts & Personal Services	13.0%	11.3%	12.7%	9.5%
Electrician	8.6%	12.0%	6.1%	4.2%
Industrial & Heavy Duty Mechanics & Other Repair Trades	3.2%	2.3%	3.6%	3.0%
Other Construction Trades	18.8%	7.8%	10.6%	9.3%
Other Trades	12.0%	11.7%	13.0%	25.7%
Plumbing	12.9%	9.2%	8.7%	8.6%
Welding & Precision Production	16.8%	15.3%	13.2%	11.6%
Overall	10.8%	10.9%	9.1%	8.7%

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

Appendix K: Common Occupations by Program Group

Program group	Occupation category	Percent in occupation	Number in occupation
Automotive & Other Mechanics			
	Motor Vehicle Mechanics	78%	190
	Machinery & Transportation Equipment Mechanics	10%	24
	Contractors & Supervisors, Trades & Related Workers	3%	7
	Printing Press Operators, & Commercial Divers	3%	7
	Other Mechanics	2%	5
Carpentry			
	Carpenters and Cabinetmakers	77%	253
	Contractors & Supervisors, Trades & Related Workers	10%	34
	Managers in Construction & Transportation	3%	10
Culinary Arts & Personal Services			
	Chefs & Cooks	71%	315
	Butchers & Bakers	7%	31
	Food Counter Attendants & Kitchen Helpers	5%	21
	Technical Occupations in Personal Service	3%	14
	Retail Salespersons & Sales Clerks	2%	9
	Labourers in Processing, Manufacturing & Utilities	1%	6
	Managers in Food Service & Accommodation	1%	6
	Sales & Service Supervisors	1%	5
Electrician			
	Electrical Trades & Telecommunication Occupations	83%	416
	Contractors & Supervisors, Trades & Related Workers	10%	53
	Machinery & Transportation Equipment Mechanics	2%	8
	Technical Occupations in Electronics & Electrical Engineering	1%	7
Industrial & Heavy Duty Mechanics & Other Repair Trades			
	Machinery & Transportation Equipment Mechanics	77%	246
	Electrical Trades & Telecommunication Occupations	6%	19
	Technical Occupations in Electronics & Electrical Engineering	5%	16
	Recording, Scheduling & Distributing Occupations	4%	13
	Contractors & Supervisor, Trades & Related Workers	2%	6
Other Construction Trades			
	Other Construction Trades	45%	48
	Masonry and Plastering Trades	34%	36
	Contractors & Supervisors, Trades & Related Workers	8%	8

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

Program area	Occupation category	Percent in occupation	Number in occupation
Other Trades			
	Heavy Equipment Operators	20%	20
	Contractors, Operators & Supervisors in Agriculture, Horticulture, & Aquaculture	16%	16
	Metal Forming, Shaping & Erecting Occupations	11%	11
	Motor Vehicle & Transit Drivers	10%	10
	Crane Operators, Drillers & Blasters	7%	7
	Technical Occupations in Life Sciences	6%	6
	Trades Helpers & Labourers	6%	6
Plumbing			
	Plumbers, Pipefitters & Gas Fitters	84%	260
	Contractors & Supervisors, Trades & Related Workers	8%	26
	Underground Miners, Oil & Gas Drillers	2%	6
Welding & Precision Production			
	Metal Forming, Shaping & Erecting Occupations	67%	458
	Machinists & Related Occupations	5%	32
	Carpenters & Cabinetmakers	4%	26
	Machinery & Transportation Equipment Mechanics	4%	26
	Printing Press Operators, Commercial Divers	3%	22
	Contractors & Supervisors, Trades & Related Workers	3%	19
	Trades Helpers & Labourers	2%	17
	Other Installers, Repairers & Servicers	1%	7
	Longshore Workers & Material Handlers	1%	6
	Primary Production Labourers	1%	6
	Labourers in Processing, Manufacturing & Utilities	1%	5
<p>Note: Occupations with fewer than five respondents are not shown; therefore, most program areas do not add to 100 percent. Occupation categories are the 3-digit NOC.</p>			



BCStats

For more information on the BC Apprenticeship Student Outcomes Survey, see outcomes.bcstats.gov.bc.ca/AnnualSurveysAPPSO.aspx