



2016-17 Innovative Trades Training in BC: Seven Pilots Summary

ITA released a request for expression of interest (RFEI) in April 2016 to solicit proposals from currently designated training providers for Innovation Pilots. ITA invited the 14 public post-secondary institutions (PSIs) and 24 non-public training providers who received annual funding to apply to the RFEI.

The goal of these Innovation Pilots was to test and evaluate trades training delivery methods that might achieve better outcomes for apprentices and employer sponsors. The pilots needed to address one or more of the following four outcomes identified by industry:

1. Provide more flexible and innovative training that enables employers to keep apprentices at work longer and enables apprentices to maximize their earning potential
2. Improve employability and sponsorship out of Foundation programs
3. Increase access to training for rural and under-represented groups
4. Improve alignment of technical training to the needs of apprentices and employer sponsors

Eleven training providers submitted a total of 19 proposals, which were evaluated based on the following criteria: rationale, innovation, impact on outcomes, partnerships, feasibility of project and timeline, sustainability and replicability.

The following training providers were selected:

Training Providers	Trades Programs	Number of Students
1. North Island College	Foundation Programs: Electrician, Heavy Equipment Operator, Welder, Aircraft Structural Technician and Carpenter	75*
2. Camosun College	Piping Trades** (Level 1)	10
3. Camosun College	Professional Cook (Level 3)	8
4. Okanagan College	Electrician (Level 1)	7
5. Vancouver Community College	Automotive Glass Technician (Level 1)	6
6. Vancouver Island University	Baker (Level 1)	12
7. Electrical Joint Training Committee	Marine Electrician (Endorsement)***	n/a

* The work experience portion of the program involved only approximately half of the participants

** Piping trades include: Plumber, Steamfitter/Pipefitter, Sprinkler System Installer and Gasfitter

*** This was a proposal only, not the development or delivery of a pilot

1. North Island College – Employability Fundamentals and Work Experience

This training delivery pilot was designed for and delivered to Trades Foundation (pre-apprenticeship) students in five different trades programs: Heavy Mechanical, Welding, Electrical, Aircraft Structural Technician and Carpentry.

Module 1 training content included Employability Skills, Communication and Team-Building Skills, Workplace Expectations and Job Search Techniques to supplement traditional Foundation program content, which comprises trade-specific classroom theory instruction and hands-on practical skill training in a laboratory or shop.

Module 2 training was composed of Portfolio Building, Personal Presentation Skills and a one-week Work Experience placement. Due to time constraints for development and delivery of the pilot program, and a limited pool of employers who could take students during the timing of the pilot project, not all participants were able to secure work experience placements. The following table shows the number of participants from each trade group and the number who had work experience placements.

Foundation Program	# in Classroom Training	# with Work Experience Placement
Heavy Mechanical	31	15
Welding	16	8
Electrician	30	12
Aircraft Structural Technician	6	3
Carpentry	30	0
TOTAL	113	38

The high-level goal of the pre-apprenticeship program was to remove barriers and create a pathway to employment and apprenticeship sponsorship for students transitioning from Foundation training programs into employment. Supplementing traditional Foundation trades training content with inclusion of employability skills, workplace mentorship and formal work experience was designed to strengthen career outcomes of students and provide employers an opportunity to meet prospective employees and apprentices.

Plans for Future Delivery

- Work experience will be integrated into 2018 winter cohorts for Heavy Mechanical, Electrical, Plumbing and Piping Foundation training, but funding is not assured for expansion of the initiative to other trades.
- Based on institutional satisfaction with pilot delivery and outcomes and support from instructors, the view of North Island College (NIC) is that this model of enhanced Foundation training and work experience should be expanded across more trades for full integration into NIC Foundation programming and across the BC Trades Training system.
- Industry is seeking support from post-secondary training providers to provide them with guidance and resources to best support work experience/Foundation students. Employers also felt there is a need to develop a formal mentorship model for employers.

For more information about the North Island College – Employability Fundamentals and Work Experience innovation trades training delivery, contact: Cheryl O’Connell, Dean of Trades, North Island College, 250-923-9721, cheryl.o'connell@nic.bc.ca

2. Camosun College – Piping Trades Level 1

This project is a partnership among Camosun College, Okanagan College and Queen's Printer to develop and use digital trades learning resources for online delivery of technical training. Camosun integrated the digital learning guide into D2L (formerly Desire2Learn), the course management system employed by Camosun College. Queen's Printer used the BCeID system, requiring all apprentices working with the online texts to sign up for a BCeID before they could access their textbook using a unique code. Within the learning management system (LMS), each learning task in the ITA course outline was separated into individual online PDFs, which were accessible on each corresponding learning task page on the D2L learning management system.

The project entailed converting the common core piping trades Level 1 curriculum and delivery methodology into a blended two-phase format program consisting of an online theory component and a face-to-face practical component. The curriculum is common to Level 1 Plumber, Steamfitter/Pipefitter, Sprinkler System Installer and Gasfitter apprenticeship programs.

Traditional delivery is face to face in school for six consecutive weeks on campus. The blended delivery consisted of self-paced online training restricted to a four-month time frame, followed by three and a half weeks on campus (classroom and shop), with one of the on-campus days dedicated to preparation for the ITA level exam.

Features of the electronic digital format:

- Allows apprentices to access the relevant sections of publications from within the LMS from anywhere, any time – online access 24/7
- Offers a quick and easy search function
- Provides the ability to print individual activities/sections as required
- Remains accessible to apprentices through Queen's Printer's individual library after completing their programs.

Plans for Future Delivery

- Contingent on ITA and bookstore approval, Camosun Pipe Trades would like to continue with the pilot in September 2018 for their students, as an option to face-to-face classes
- Queen's Printer to make a video on BCeID and the BC Publication program prior to rollout
- Queen's Printer and bookstore to look at other trades wishing to pilot the digital resources (e.g., Carpentry Levels 1–4 and Electrical)
- Open School BC to review the program and provide feedback.

For more information about the Camosun College – Piping Trades Level 1 innovation trades training delivery, contact: Eric Sehn, Dean of Trades, Camosun College, 250-370-3819, sehne@camosun.bc.ca

3. Camosun College – Professional Cook 3

The project entailed development and delivery of a blended online Professional Cook 3 (PC3) technical training course to reduce apprentice time away from work to attend technical training. The traditional block-release PC3 technical training course requires attendance at the training institution for 30 days to complete 180 hours of training (based on attendance for six hours, five days per week). The blended pilot delivery reduces in-school face-to-face training from 30 days to five days.

Plans for Future Delivery

- Based upon the success of PC1 and PC2 online training, and the results of this PC3 blended learning model, the intent is to fully implement and operationalize the blended PC3 training model.

For more information about the Camosun College – Piping Trades Level 1 innovation trades training delivery, contact: Eric Sehn, Dean of Trades, Camosun College, 250-370-3819, sehne@camosun.bc.ca

4. Okanagan College – Electrician Level 1

The Electrician Apprenticeship Level 1 blended technical training course is a 17-week program combining 12 weeks of self-paced online digital learning and five weeks of face-to-face in-school instruction. The traditional block-release Level 1 Electrician course entails training on campus in Okanagan College's Kelowna trades facility for 10 consecutive weeks.

The off-campus portion of the course comprises reading assigned material and logging on to the Okanagan College website to access tutorial videos, complete assignments, complete tests of comprehension, post questions, participate in student forums, and engage in webinars that focus on specific curriculum areas that require clarification. The e-learning platform provides for monitoring student achievement and progress, and producing data analytics to inform student supports required and inform course improvements.

The initial on-campus session held during week one of the program introduces apprentices to the online learning format and how the digital platform works. The face-to-face introduction fosters team-building among students and allows the instructor to ascertain individual strengths and weaknesses by observing students as they work together. Following the 12-week period of online learning activities, apprentices return to campus to integrate learning into hands-on lab work, and to hone and have their practical skills and knowledge evaluated for a Level 1 course mark.

Plans for Future Delivery

- Based on results of the pilot delivery, Okanagan College is interested in offering the course again in the future and in developing a similar blended learning course for Electrician Level 2 technical training.

For more information about the Okanagan College – Electrician Level 1 innovation trades training delivery, contact: Steve Moores, Dean of Trades, Okanagan College, 250-762-5445, Local 4837, smoores@okanagan.bc.ca

5. Vancouver Community College – Automotive Glass Technician Level 1

This project entailed development and delivery of a blended online and face-to-face Level 1 technical training course for Automotive Glass Technician apprentices. The traditional block-release course required apprentices to attend in-school training for two weeks, but an update to the program outline for the trade will increase the duration to three weeks. Because this is a small-volume trade, apprentices travel from all over BC to attend technical training, which is usually offered only once every two years.

The pilot delivery consisted of a 12-week period of online learning and workplace competency assessment followed by one week in school, significantly reducing the time that apprentices must be away from work to attend training.

Plans for Future Delivery

In spite of strong industry support for this method of apprenticeship training delivery, future delivery is uncertain due to a number of factors:

- Low-Volume Trade: Auto Glass Technician is a trade with a low volume of apprentices.
- Introduction of a New Practical Test for Auto Glass Technician Certification Challenge: The recent introduction of a new “industry-based” practical assessment for certification challengers may be in direct competition with this apprenticeship program. It is possible that many potential course participants will choose instead to pursue certification through the certification challenge pathway.
- Future Training Demand and Instructor Recruitment: Industry has indicated strong support for apprenticeship training, but the feasibility of future delivery of the training is contingent on verification of demand and availability of instructors who have an interest in online teaching and the appropriate digital competence. If the digital delivery portion of the program can be marketed broadly (perhaps also outside BC), future delivery may be feasible and sustainable.

For more information about the Vancouver Community College – Automotive Glass Technician Level 1 innovation trades training delivery, contact: Brett Griffiths, Dean of Trades, Vancouver Community College, 604-488-4204, bgriffiths@vcc.ca

6. Vancouver Island University – Baker Level 1

Traditional face-to-face block-release Level 1 Baker apprenticeship technical training is a four-week in-school course. The pilot online and workplace Level 1 Baker technical training eliminated face-to-face in-school training entirely. The course was delivered exclusively online and in the workplace over a period of 20 weeks.

There was one instructor paid for five hours per instructional week to interact with and support students, and to mark assignments and tests. The theory component comprised textbook readings and videos that demonstrate practical techniques. Theory mastery was evaluated using online quizzes and tests. The practical hands-on assignments were documented through digital photos taken by students as they completed the work, and written evaluations they completed and uploaded to the D2L platform hosted at Vancouver Island University (VIU) as they moved through practical assignments. These assignments were evaluated by the instructor. Tests and quizzes were computer-graded and automatically entered into student records.

Plans for Future Delivery

- There has been interest in the program from different parts of Canada (the Maritime provinces and Alberta), so if apprentices from outside BC could register in the online course and tuition fees could be charged, there is great potential for this program to succeed as a Canada-wide offering in the future. The Canadian Council of Directors of Apprenticeship (CCDA) Pan-Canadian Harmonization Initiative, which is aligning content sequencing, could facilitate the delivery of a pan-Canadian online and workplace training model.

For more information about the Vancouver Island University – Baker Level 1 innovation trades training delivery, contact: Glynis Steen, Dean of Trades, Vancouver Island University, 250-740-6146, Local 6146, glynis.steen@viu.ca

7. Electrical Joint Training Committee – Marine Electrician Endorsement

In March 2017, the Electrical Joint Training Committee (EJTC) submitted a proposal for the development of a blended learning option to replace the traditional classroom delivery for the new Marine Electrician Endorsement. This proposal was solely to discuss the merits of developing a blended option for the delivery of this program, and was not a proposal for ITA to actually fund and deliver this program. The proposal recommended the creation of an online/3-D learning environment, which would cover the bulk of the theory training (80%), plus five to six days of traditional in-class training.

Plans for Future Delivery

- Other possible blended learning options that are less expensive should be reviewed, including the licensing of existing online learning, as there appears to be a sufficient level of demand for a blended delivery option.
- Industry would also need to commit to supporting this option and ensure that intakes, when offered, were well subscribed.