

Technical Training Designed to Support Innovation

CAF-FCA Conference

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Today's Trades Classrooms

- Rapid technological change, increasingly sophisticated equipment, online learning, “live” blueprints, simulators, virtual reality and digital devices are changing the skilled trades workplace and the apprentice learning environment.
- Today, apprentices are more likely to find an answer using a smartphone, an iPad or YouTube than looking in a book.

Apprentice Training Expectations

- Apprentices value their time in the classroom learning from an instructor, but they increasingly want skills-relevant applications, mobile compatible information, techniques related to searching for information online, utilizing a smartphone for work tasks and online essential skills training.
- Apprentices are seeking flexible training. Online technical training and mobile training units, in particular, help apprentices such as parents, older individuals, Indigenous peoples and rural and Northern residents progress towards completion by reducing relocation costs and offering accessible training within communities.

Today's Session

- Technical training institutions are experimenting with new learning devices and mechanisms to support apprentice skills development and progression.
- The session today will provide you an opportunity to learn about various initiatives across the country.

Technical Training Institutions

There are six technical trainers here today:

1. Yukon College
2. Red Deer College
3. Thompson Rivers University
4. Operating Engineers Training Institute of Ontario
5. NAIT
6. Okanagan College

Yukon College

- Yukon College received funding from the "Flexibility and Innovation in Apprenticeship Technical Training" (FIATT) project, Employment and Social Development Canada, as well as additional financial support from the Department of Education, Yukon Government, to deliver the "Building Northern Apprentices Project."
- This was a workable and flexible alternative to the traditional apprenticeship technical 8 week in-class training delivery.
- In collaboration with the Apprenticeship Training Office of Yukon Government, Yukon College offered this project to allow new and existing apprentices living in Yukon communities outside Whitehorse, to complete their technical and theory training levels, while staying in their communities. This was an initiative to meet the needs of those residing in Yukon communities to begin, continue or complete apprenticeship training. Trades originally proposed included carpentry, electrical, plumbing and oil burner mechanical trades
- Supported by qualified instructors, experienced tutors, program coordinators, and staff at the YG Apprenticeship Office, apprentices learned independently in a managed and self-paced environment. Apprentices met periodically with an instructor in preparation for on-line examinations. Apprenticeships were supported through an outreach delivery method.

Red Deer College

- Red Deer College offered community-based, upfront technical training in the welding trade, beginning with simulator training in the home community of their First Nations partners.
- The training also included on-campus training, online learning, innovative testing models, personal development and a co-op work placement.
- Many participants secured employment and built relationships with local employers.
- Fifty Indigenous participants received training.

Thompson Rivers University

- Thompson Rivers University offered Level 3 and 4 integrated technical training with 8 weeks online and 10 weeks on-campus.
- Steamfitter/pipefitter apprentices had an opportunity to complete the upper levels of their training in an accelerated manner.
- An interactive online course was offered.
- Interim results indicate 20 apprentices received the training.

Operating Engineers Training Institute of Ontario

- The Operating Engineers Training Institute of Ontario purchased new crane simulators for mobile and tower crane operators.
- A historic and current performance tracking database tracked apprentice performance.
- By moving more complex employer-driven training scenarios from the theory portion to the practical portion, apprentices had the opportunity to rehearse difficult and/or dangerous scenarios in a safe and controlled environment. The Operating Engineers worked with employers to design these scenarios to ensure the skills learned were transferable to real-life conditions.

Okanagan College

- In an effort to reduce barriers and increase accessibility for training construction electrician apprentices in British Columbia, a new model of delivery combining digital (12 weeks) and on-campus (5 weeks) learning was piloted by the Okanagan College Trades and Apprenticeship Department.
- This program was initiated by British Columbia's Industry Training Authority (ITA) request to training providers to develop, test and evaluate innovative trades training programs.
- Techniques used in the design, development, delivery and evaluation were discovered throughout the project as well as valuable lessons learned.

NAIT

- NAIT created the first Virtual Reality training for ironworker apprentices. The training, the first of its kind in North America, was developed entirely in-house, including the 3-D printed foot sensors.
- Apprentices train in virtual reality for their first year of technical training then progress outdoors to a real-life training environment that the Virtual Reality training world is designed from.

Today's Format

- Participants will go to a station.
- The technical trainer will speak for 15 minutes.
- I will let you know when the time is up.
- Participants will then rotate to another station.
- By the end of the session, participants will have visited four stations.
- Participants will receive the technical trainer contact information and Power Points for further information and follow-up networking.

Operating Engineers Training Institute of Ontario

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15 Minute Run-Down

What OETIO does and how we integrate technology

- Crane and Heavy Equipment Training School
- Use simulation training in the classroom to transition learning objectives from lecture format to practical training
- Provide safe working environment for complex and dangerous learning outcomes to be accomplished in practical manner
- Use internally developed performance matrix to grade apprentices against industry expectations in terms of performance and production
- Alternatively, OETIO also uses the simulators in a marketing manner to both draw people to our trade and deter those who aren't suited for the trade.

Picture for Reference



Learning Moments and Pitfalls

- Buy-in needs to be from the top down.
- Industry acceptance comes slowly, but works from the Apprentice upwards.
- You can't go half-way with your investment. Imperative to get the best technology available.
- Technology has limitations and a lifespan. Need to be integrated into your capital planning (no different than a piece of machinery – R&M and replacement considerations).

2018 National Apprenticeship Conference Montreal

The Digital Age Re-Energizes Electrician Apprenticeship Training In British Columbia

Steve Moores, Dean Trades and Apprenticeship



Agenda

1. Project Background and Rationale
2. Project Description
3. Summary of Project Findings



Project Background and Rationale

- April 2016 the Industry Training Authority (ITA) British Columbia requested expression of interest for 'Innovative Pilots to test and evaluate trades training programs'.
- The Government of British Columbia and the ITA wanted to explore methods to increase: flexibility, innovation, accessibility of Apprenticeship delivery
- Electrician Apprenticeship technical training in British Columbia is delivered as a 10 week, block release, face to face offering
- Okanagan College submitted a proposal for the development and delivery of the Electrician Apprenticeship Level 1 program which would combine face to face with digital, on-line delivery



Project Description

Electrician - Blended Delivery

Electrician Apprenticeship Level I – Blended Program 2017

The Electrician Apprenticeship Level I Blended Program is a new 17-week program that delivers electrical trades training through a combination of face-to-face instruction and online learning. Instead of the traditional 10 weeks spent on campus, students in this program will only require 5 weeks of on-campus instruction at the Okanagan College Kelowna Campus. In addition to this, students will spend a further 12 weeks completing the online portion of the course.

Through use of the most modern online learning processes and technologies, this flexible Blended model will maintain the quality and rigor of the traditional model, while also reducing the amount of time an apprentice is away from his or her workplace, home, and family.

Program Schedule

The program will run from **March 27, 2017 to July 21, 2017**. A breakdown of the timeline for this program can be found below. Click [here](#) or on Detailed Schedule in the navigation bar to the left, for more information.

Week 1 – On campus (30 hours) 
March 27 – 31, 2017
Orientation week

Weeks 2-5 – Online (12.5 hours/week*) 
April 3 – 28, 2017
Online coursework & readings

Week 6 – On campus (30 hours) 
May 1 – 5, 2017
Review material covered online, perform labs

Weeks 7-10 – Online (12.5 hours/week*) 
May 8 – June 2, 2017
Online coursework & readings

Week 11 – On campus (30 hours) 
June 5 – 9, 2017
Review material covered online, perform labs

Weeks 12-15 – Online (12.5 hours/week*) 
June 12 – July 7, 2017
Online coursework & readings

Week 16 – On campus (30 hours) 
July 10 – 14, 2017
Review material covered online, perform labs

Week 17 – On campus (30 hours) 
July 17 – 21, 2017
Review all material & final exams

**This is a suggested minimum amount of time students should allot for online weeks. Online week time will be used to read assigned material, log on to the OC website to access tutorial videos, complete assignments, complete tests for comprehension, post questions, participate in student forums, and engage in webinars for Q&A and progress monitoring.*



Summary of Project Findings

- The greatest challenge was student recruitment-in spite of extensive efforts 6 students started the program (capacity 16)
- Of the 6 students who started the program, 4 successfully completed. 1 withdrew due to family issues and 1 student failed the program due to lack of progress
- Students did not report any difficulty using the website platform (Wordpress) or the Learning Management System (Learndash). Both were stable and easy to manage
- This was uncharted waters for the Trades Department-creation of a website, innovative digital development and a blended delivery method

