Creating ePathways for Trades and Technical Programs

Some Ideas for Enhancements
Acknowledgement and attribution with thanks…

• Slides in this presentation include images and slides selected from…

  • Digitizing the Toolbox: Taking the trades online (Melissa Robertson and Stephanie Boychuck – Vancouver Island University, 2015 http://www.slideshare.net/stephanie_boychuk/etug-digitizing-the-toolbox-taking-the-trades-onlinefinal
  • Automotive Service Technician (AST) Program: Canadore College 2016
  • ePPrentice: (BCcampus, 2008), Vancouver Community College (2008)
  • Professional Chef Gap Training Program: BCcampus, 2014; GO2HR.ca, 2014
  • FAST BC: Immigrant Employment Council of BC, 2017; BCIT, 2017
  • Apprentice to CEO Program: BCIT, 2017
Outline

• Our backgrounds
• Trades training models
• Taking theory portions of trades online
• Some program examples – in Ontario and the West
• Enhanced programming ideas
• Conclusions – where to next?
• Questions?
We are...

• Tracie Marsh-Fior
• OntarioLearn

• David Porter
• eCampusOntario
Trades training models

**Foundations Training**
- Theory presented in class
- Use of tools discussed
- Practice in the shop

**Apprenticeship**
- 90% on the job
- 10% in class
  - Theory
  - Tool use
Taking theory portions online - benefits

- Work and learn simultaneously
  - reduce/eliminate time on employment insurance (EI)
- Stay in home community
- Stay with employer
- Build tech skills that will be important to work futures
  - Professional Development, Health and Safety training increasingly online

Lesson Overview

Dry-heat cooking methods are often used to prepare shellfish dishes, however, like fish, their lean nature makes them somewhat vulnerable to high heat.

The natural hard shell provides an ideal cooking package for the delicate shellfish, hence they are often cooked whole and then shelled.

Cooking methods such as deep-frying, sautéing, grilling, poaching and steaming are commonly used when cooking shellfish.

Lesson Competencies

Upon completion of this lesson you will be able to:

- describe the basic principles of shellfish cooking
- identify the basic cooking methods for shellfish
- identify suitable types of shellfish for various cooking methods
- prepare shellfish for cooking
- identify correct doneness of cooked shellfish
- bake and roast shellfish
- sauté and stir-fry shellfish
- broil and grill shellfish
- deep-fry and pan-fry shellfish
- steam and poach shellfish
Taking theory online – options for activity

- Class materials
- Self-study materials
- Safety resources
- Video tutorials
- Quizzes
- Homework and practice exercises
- Discussions
- Announcements, news
Some models of practice we’ll describe

• Canadore College – Automotive Service Technician (AST)
• Vancouver Island University – AST, Welding, and others
• GO2HR – Gap training for professional chef programs
• Facilitating Access to Skilled Trades – FAST BC
• Construction Ready – badging and portfolio for trades readiness
Canadore College
Canadore – Automotive Service Technician

• Provincial funding received
• Level 1 and Level 2 complete; Level 3 in progress; Exam prep complete
• Developed as cohort model
• Learning activities collaboratively designed
• Student review during development
• Learning Outcomes requiring hands-on activities - shop session
• Beyond textbooks – use of videos, industry websites, trade documents
• High degree of instructor engagement
• Workplace discussions, worksheets, student produced videos/photos etc.
Canadore - AST

Transmission Noise
- Sometimes noise occurs only when engine is idling in neutral with clutch engaged.
- Faulty transmission bearing on input shaft and mainshaft pilot are only bearings rotating
- One of these bearings is probably the noise source.
- Most commonly front trans. bearing.

Pedal Problems and Slipping Clutch
- Diagnosis on basis of pedal feel.
- Pulses pedal: something internal in clutch.
- Pedal is hard to depress: binding linkage or cable.
- Sticky release bearing to transmission bearing retainer.
- Slipping clutch.
- Tested by putting it in the highest gear range.
- Several possible reasons clutch slip.
- Partial engagement.
- Partial disengagement.
- Excessively worn materials.

Dragging Clutch
- Clutch drags: does not release properly.
- Disc stays attached to the flywheel or pressure plate.
- Test for a dragging clutch.
- Start engine and run it to normal operating temperature.
- Engine at idle and transmission in neutral: depress clutch to floor.
- Wait ten seconds.
- Shift transmission into reverse.
- Is there excessive grinding in transmission?

Oily Clutch Facings
- Oil leaking onto clutch disc:
  - Causes clutch slipping.
  - Disc may overheat and burn and glaze its friction surface which causes chatter.

Oily Clutch Facings
- During repair:
  - Disc and pressure plate are replaced.
  - Rest of the parts are thoroughly cleaned and possibly machining done to flywheel.
  - Determine and repair oil leak source
  - Oil on front side of flywheel: crankshaft rear seal or external engine leak
  - Oil on rear side of flywheel: bad front transmission seal or overfilled transmission

Clutch Fluid
- Becoming more common to have an internal clutch slave cylinder leak and get fluid on clutch.
Canadore – AST
Supporting Mentorship - ShopTalks

- Can include “messy questions”
- Students report on key points from on-site discussion

**ShopTalk Activity 2**

Have your shop mates look over the two car stats below. Compare these two cars based on work, energy, power, and torque –

Honda Fit 2009:
- Horsepower 117 @ 6600 rpm
- Torque (lb-ft) 106 @ 4800 rpm

VW golf 2003:
- Horsepower 115 @ 5,200 rpm
- Torque 122 lb-ft. @ 2,600 rpm

Note: Remember to change torque to metric (you can use this website: http://metricconversion.biz/torque-conversion.html however, you should know how to do it manually, see this website for procedure - http://www.thetipsbank.com/convert.htm#Torque)

Submit a summary of your shop discussion in the M1_L1 ShopTalk 2 - Assignment Dropbox, including any further analysis you did on your own, including websites you visited. DO NOT copy and paste from a website – you are to SUMMARIZE the conversations you’ve had with your Shop mates and provide details from your own research.

Learn more by going to: https://youtu.be/N-i-SdTreRA
Critical Success Factors

• Ministry/OCOT Support
• *Right* instructor, first time around
• Support (training prior to starting, technical assistance during course)
• Communication with employers
• Communicating with apprentices – not a short-cut to apprenticeship
• Others?
Vancouver Island University

- Automotive Service Technician
- Welder
Automotive Service Technician

- Homework
- Quizzes
- Form Submission
- All class material
Welding Foundations

- Introduction
- Safety
- Videos
- Quizzes
- Discussions
VIU - Designing an online theory stream

Stage 1
- Program Wide Initiative
- Set out goals

Stage 2
- Aligning assessment and lessons with outcomes

Stage 3
- Determining what works best online

Stage 4
- Creating online content

Stage 5
- Run the course or pilot modules
Enhanced online models

• ePPrentice
• Gap Training for Red Seal Exam Success
• FAST BC – transitioning immigrants and closing knowledge gaps
• Construction Ready – Understanding the trade pre-entry
ePPrentice

• Flexible Learning for Trades branding:
  
  • Marketed provincially with development and delivery institutions
  
  • E-PPRENTICE information web site for learners and employers
  
  • Support from automotive industry associations
ePPrentice

- Reduce:
  - barriers to obtain in-school portion of training
  - financial hardships for apprentices to attend training
  - hardship to businesses by reducing time away from work for training

- Increase:
  - percentage of apprentices who complete
  - satisfaction rates of trainees
  - recruitment by offering alternative modes of delivery

- Enhance:
  - information and communication technology skills

- Develop:
  - accessible, shareable flexible learning materials
  - open licensed, reusable resources
Traditional Face-to-Face Model

First Year

210 Hours

7 Weeks 30 hours/week
Away from work: Apprentices get EI
Traditional Face-to-Face

First Year

210 Hours

7 Weeks 30 hours/week
Away from work: Apprentices get EI

80% Theory  20% Practice
E-PPRENTICE Model

First Year

210 Hours

120 Hours (Online)
16 Weeks
At work

90 Hours (F2F)
2 Weeks
Away from work: No EI
E-PPRENTICE Model

First Year

210 Hours

120 Hours (Online)

16 Weeks
At work

90 Hours (F2F)

2 Weeks
Away from work: No EI

80% Theory 20% Practice

During work

Work plan: Task Sheets

After work

Evaluation - Review
Gap Training for Red Seal Exam Success

PROFESSIONAL COOK 3 - OPPORTUNITIES ABOUND FOR RED SEAL CHEFS

It's a Friday night and Joe Fortes is buzzing. One of Vancouver's iconic restaurants, the 25-year-old Joe Fortes Seafood & Chop House serves up to a thousand covers on a busy night. Behind the scenes, a 70-staff kitchen runs around the clock, providing not only great meals, but also plenty of opportunities for aspiring chefs.

Among them is 24-year-old Tommy Shorthouse. The newly certified Professional Cook 3 (PC3) or Red Seal cook is a four-year veteran at Joe Fortes. In May 2014, after completing his PC3 apprenticeship training at Vancouver Community College, Shorthouse landed a promotion to the role of Chef de Partie.

The job, as an assistant to the Sous Chef, is a key role in a large kitchen like Joe Fortes. Besides supervising line cooks and passing instructions on from the Sous Chef team, Shorthouse also tracks stock and orders supplies.

It's a big change from his role as a Professional Cook 2 (PC2). "With the Red Seal you learn more advanced cooking techniques and you also become more of a leader in the kitchen," he says.

A 6-week pilot project to test online, competency-based education and training that puts the student first.

Those who were successful on the written exam spent on average 2x as much time using the training modules than those who were unsuccessful.

Increased success rate in participants who had previously failed the written exam.

Once built, a fully realized online professional cook gap training program could cost about 50% less than delivering one level of in-person apprenticeship training.

$100 Per Student

Program Costs

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WORKING IN TRADES IN BRITISH COLUMBIA, CANADA

Immigrating to Canada? Before you arrive, get your skills and knowledge assessed, find out what additional training you may need, and get trained.

(FAST BC) Facilitating Access to Skilled Trades in BC helps qualified, internationally trained tradespersons and BC employers succeed.
FAST BC

**Learner benefits**
- helps evaluate clients' skills and knowledge before arrival in Canada,
- provides access to online gap training to assist in upgrading needed knowledge and skills, and;
- helps them to understand the expectations of the Canadian workplace.

**Employer benefits**
- connecting with skilled talent that have an international perspective
- gaining a competitive edge by creating a diverse, inclusive workplace
FAST BC

**CANADIAN WORKPLACE CULTURE**

When you work in BC or elsewhere in Canada, workplace expectations may be different from those in your previous jobs. Even before you arrive in Canada, FAST BC will provide you with online information and training on workplace practices expected by Canadian employers.

[REGISTER NOW TO LEARN ABOUT CANADIAN WORKPLACE CULTURE](#)

**SKILLS AND KNOWLEDGE ASSESSMENT**

Find out if the skills and knowledge gained in your home country align with the requirements in BC or elsewhere in Canada. Learn if you are ready for a job in a Canadian workplace. Experts in your field will assess your skills and knowledge so that you can fill any gaps with appropriate online training before you come to Canada.

[REGISTER NOW TO FIND OUT IF YOUR SKILLS AND KNOWLEDGE ARE SUITABLE FOR EMPLOYMENT OR NEED UPGRADE](#)

**Services provided**

- evaluation of academic credentials (if required)
- familiarization with Canadian essential skills, workplace culture and communication
- a comprehensive assessment and report of knowledge, skills, and abilities (competence) for their trade and how they compare to BC or Canadian standards
Where to next?

• Add digital strategies and pathways to trades programs
• Create all instructional materials digitally from the outset
• Use technology platforms as a fundamental component of instruction
• License all materials using Creative Commons licenses for reuse, revision, remixing, redistribution, and retention by instructors
Thinking openly about pathways and resources

Working in the Food Service Industry
BC Cook Articulation Committee

Working in the Food Service Industry is one of a series of Culinary Arts books developed to support the training of students and apprentices in British Columbia's food service and hospitality industry. Although created with the Professional Cook, Baker, and Meat Cutter programs in mind, these have been designed as a modular series, and therefore can be used to support a wide variety of programs that offer training in food service skills. Working in the Food Service Industry covers B.C. legislation and regulations for employment standards, as well as an overview of the "soft skills" of communication, conflict resolution, teamwork, and career planning.

Download in the following formats:
Creating common free resources is key.

**Line A – Safe Work Practices**
- A-1 Control Workplace Hazards
- A-2 Describe WorkSafeBC Regulations
- A-3 Handle Hazardous Materials Safely
- A-4 Describe Personal Safety Practices
- A-5 Describe Fire Safety

**Line B – Employability Skills**
- B-1 Apply Study and Learning Skills
- B-2 Describe Expectations and Responsibilities of Employers and Employees
- B-3 Use Interpersonal Communication Skills
- B-4 Describe the Apprenticeship System

**Line C – Tools and Equipment**
- C-1 Describe Common Hand Tools and Their Uses
- C-2 Describe Common Power Tools and Their Uses
- C-3 Describe Rigging and Hoisting Equipment
- C-4 Describe Ladders and Platforms

**Line D – Organizational Skills**
- D-1 Solve Trades Mathematical Problems
- D-2 Apply Science Concepts to Trades Applications
- D-3 Read Drawings and Specifications
- D-4 Use Codes, Regulations, and Standards
- D-5 Use Manufacturer and Supplier Documentation
- D-6 Plan Projects
Construction ready
We’d be pleased to discuss futures…

Apprentice to CEO
COAST CAPITAL SAVINGS
ENTREPRENEURIAL SKILLS FOR THE TRADES AND TECHNOLOGY

- Real opportunities exist to enhance learner experiences through digitally enabled trades pathways