2018

Vocational Training in Higher Education

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Questions & Curiosities

Apprenticeship Experience

Apprentices spend many hours in-community being paid to learn valuable knowledge and skills. Often, prospective clients would rather Not spend on their skills. Apprentices quickly develop the ability to share and negotiate their skills in a manner that positively impacts the grudge-purchase. Apprentices learn:

- technical knowledge
- critical thinking problem solving (resistant to automation)
- social & emotional intelligence (Multi-Cultural in Ontario)
- physically literate skills

The four essential questions an Apprentice learns to ask are:

1. What knowledge is relevant?
2. Why would one understanding or perspective be more applicable than another?
3. How will I complete the task and achieve the desired outcomes?
4. If my solution is not acceptable to stakeholders or applicable to the situation, can I (re)imagine a new solution?

Challenges facing Canadian Apprenticeship Programs (Heavy Trades)

- Attitudes toward manual labour & 'sweat equity'
- Declining physical-literacy (obesity epidemic)
- Strong culture of sedentary learning
- Weak history of Apprenticeship
- Immigration of skilled persons (Euro-Centric)
- Male dominated & ritualized environment (Groupthink)
- Incompatibilities with Indigenous, Disabled, New Canadian and Female individuals
- System focus on skilled labour apprenticeships – limited growth via sedentary skills (E.g., Computer Tech.)
- Narrowly focused in-school programming limits greater range of skills (time-in, more so than outcomes)
- De-emphasizing of literacy, numeracy and other employment skills (groupthink)
- Low completion rates
- Vulnerable to business cycles (gig-economy)
- Poaching of trainees (frontloaded training cost)
- High Journeyperson to Apprentice ratios (cost)
- Limited inter-jurisdictional coordination (Red Seal)

Project Description

Higher-Education 'Educulture'

Higher-education cultures are reflected in the World Health Organization description of a Plumber. Especially the more abstract objectives 2 & 3.

"The three roles a competent Plumber must assume are:

1) *To design, install and maintain drinking water supply and waste removal systems;*
2) *To manage the health and financial risks associated with plumbing;*
3) *To help conserve limited supplies of safe drinking water."*

Training 'Educulture'

Vocational training cultures are reflected in the less-complex Ontario College of Trades (OCOT) description of a Plumber:

"A Plumber installs repairs and maintains piping systems, fixtures and other plumbing equipment used for water distribution, drainage and disposal."

Project Argument - Higher Learning

Simply Stated: Is it possible that an Academic school-based (Higher) Education can equal or better the learning of real-world Apprenticeship (Vocational) Training experiences?

OCOT Apprenticeship Training programs are delivered in stages (Fig.1). The OCOT assumption might be: After a total of 104 weeks of on-the-job training, 16 weeks of in-school training is enough to fill in any learning gaps.

On the other-hand, a successful 56 week Technician Education (MAESD) program would present and replace both 16 weeks of in-school OCOT training in a manner that mimics 104 weeks of on-the-job training (The assumption).

The goal, then, is to identify challenge-opportunities (gaps) that will help develop a 56 week plumbing education program (MAESD) that is comparable to the OCOT on-the-job and in-school training (Fig.1).

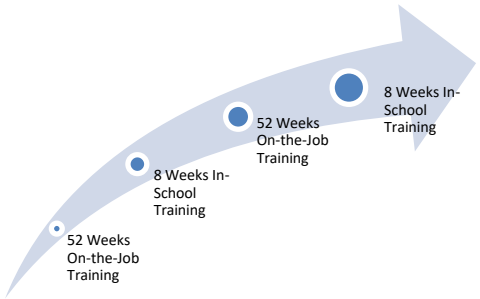

Figure 1: OCOT Basic and Intermediate Training Stages

A Learner Centred Approach to 'Higher Learning'

The more daunting task is to investigate how the tensions between 'educultures' impacts teaching and learning. The teaching and learning model used for this study is largely based on the Taxonomy of Educational Objectives. What Benjamin Bloom and others referred to as Cognitive / Affective / Psycho-Motor Domains.

The Taxonomy has been (re)modeled to reflect the learning experiences of an Apprentice while sharing and negotiating mutual well-being across Ontario's diverse cultures and work environments. These –epistemological– experiences lead to the division of the Cognitive Domain into 2 subsections: 1) Understand –a participative behaviour and 2) Know –a directed behaviour.

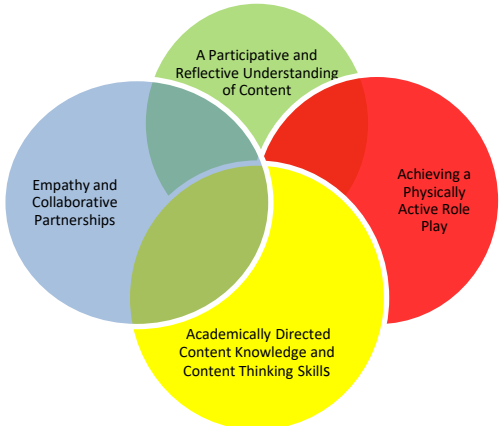

Figure 2: Bloom, Tudor, House, Ward, McCarthy and Others

Project Structure – Employability Skills

The Taxonomy has been 'married' to MAESD's 7 Essential Employability Skills to create 4 deployable skill categories. I believe that this confluence of skills is resistant to gig-economies, automation, social and personal bias. Added to employability skills is the Psycho-Motor Domain or manual labour (Number 4).

1) Directed Cognitive Academic Structures
   a) Communication
   b) Numeracy
   c) Information Management
2) Participative Meta-Cognition
   a) Critical Thinking & Problem Solving
   b) Personal
3) Affective Social Relationships and Emotional Intelligences
   a) Interpersonal
4) Achieving a Psycho-Motor Role play
   a) Physical-Literacy

These Employable Skills form the verb-filter used to deconstruct OCOT's 125 in-school Curriculum expectations. The essential questions are:

- How do the OCOT outcomes relate to Employability Skills?
- What opportunity-challenges (gaps) lay in-wait for the Creative Campus?

Main Outcomes

Challenges facing Apprenticeship

Overwhelmingly, many of the Challenges facing Canadian Apprenticeship become apparent in the deconstruction process (Fig.3).

1) An apprenticeship is Physically Literate yet, only 18 of 125 OCOT training expectations were phrased as physically-literate. This reflects the challenges of declining physical-literacy and increasing sedentary learning and the narrowly defined in-school Apprenticeship programming.

2) Ditto for social/emotional intelligences. 6 of 125 expectations were written as Interpersonal. Simply Stated: Without a significant contingent of Indigenous, Disabled, New Canadian and Female participants the heavy-trades will remain a bastion of (Euro-centric) male rituals.

Project Output: Apprenticeship Curriculum by Employability Skill

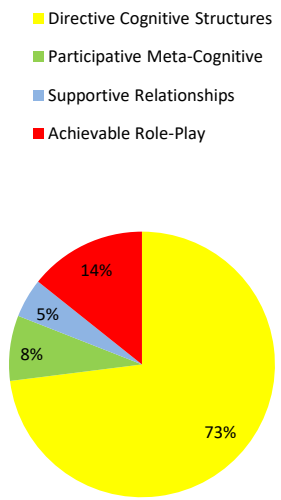

Figure 3: In-School Training vs. Employment Education Objectives

Teaching Take-Away

It is possible to provide an Apprenticeship (like) experience in an Academic environment. The 'gaps' are recognizable and meaningful (See Teaching and Learning Template). Filling the 'gaps' requires a deliberate and balanced approach to cognitive, social and physically literate intelligences. Introducing this breadth of learning to any focused 'Educulture' begins with the inclusion of diversity. Possibly using 4 simple questions: What? Why? How? If? (4MAT). Examples of diversity-gains:

- Awareness of language used (E.g., Sexual & Racial connotation)
- Development of evidence based 'rituals' (E.g., instruction)
- Ability to diversify groupthink (E.g., TRC, Calls to Action)