

Assessing Technical Competencies in Trades and Applied Subjects

**Stephen Murgatroyd, PhD and
Robert Smart, CEO Vametric Canada**

Who Am I

- Teaching at the university level since 1973
- Psychologist by training but have taught in both statistics programs and in business schools
- Now act as Chief Innovation Officer for Contact North | Contact Nord
- Now working on strategic foresight as a teacher at the University of Toronto (OISE) and University of Alberta and Athabasca University (MBA)
- Created the world's first fully online MBA in 1993-4 and have been building and working with technology enabled learning experiences ever since
- Worked for 15 years at the Open University (UK) and for 14 years at Athabasca University



Robert Smart:
LAE, FIME, FCIPD, Cert Ed

**Internationally Licensed
Competency Based Assessor
D31, D32, D33, D34, D35, D36
FAETC**

- Developed the UK's First Apprenticeship Competency based Frameworks with QCA
- Developed the worlds first apprenticeship e-assessment technology
- Lead Assessor and Verifier for BMW and First Group Skills and Competency Assessment.
- Subject Matter Expert in Competence Assessment for the NCSL (National Council of State Legislators)
- Committee member (Competency) CLEAR (Global Regulatory Excellence)
- External Verifier for 6 Regulatory Bodies.



Context

- Various organizations are working to improve the ways in which apprenticeship skills are documented, even more so when current assessment processes are ineffective in the current unprecedented circumstances.
- The Government of Canada is providing [\\$250/person in a tax credit for training](#) annually (to a lifetime limit of \$5,000) – there are also other benefits related to upskilling and reskilling.
- Canada's skills gaps are increasing – employers seeking individuals with specific demonstrable skills now. The key word being demonstratable, not implied.
- Many applied subjects taught in colleges and universities are moving to a competency-based framework for teaching, learning and assessment. Yet many assessment methods rely on multiple-choice and testing. We want to encourage you to think differently about what assessment can be.

The Educational Challenge

- A skill or competency is required to be demonstrated in some way so that a journeyman can "sign off" an apprentices for that skill set. The current methods lack transparency and sometimes fairness / favoritism.
- An applied program requires a student to show that they can demonstrate consistently over time particular skills, competencies and capabilities (And not just tick boxes, multiple choice questions or hours accumulated)

What is a competency?

disconnect perhaps?

Education

Cambridge Dictionary Competence

- The ability to do something well.
 - *Students can prove their competence by performing well in the e.*

Business

Business Dictionary Competence

- A cluster of related abilities.
 - *Commitments, Knowledge and Skills to enable a person to act effectively in a job or situation.*

What is a competency?

It is not: Explain how you solved that problem.. It is: Show me and explain how you solved the



The median time to complete for **direct assessment bachelor's programs** was **59% FASTER** than similar learners in equivalent credit-hour bachelor's programs.



The median time to complete for **direct assessment master's programs** was **42% FASTER** than similar learners in equivalent credit-hour master's programs.



The median federal **financial aid borrowed by a FlexPath student** was \$11,739. This is **45% LESS** than a student in equivalent Capella credit-hour programs.



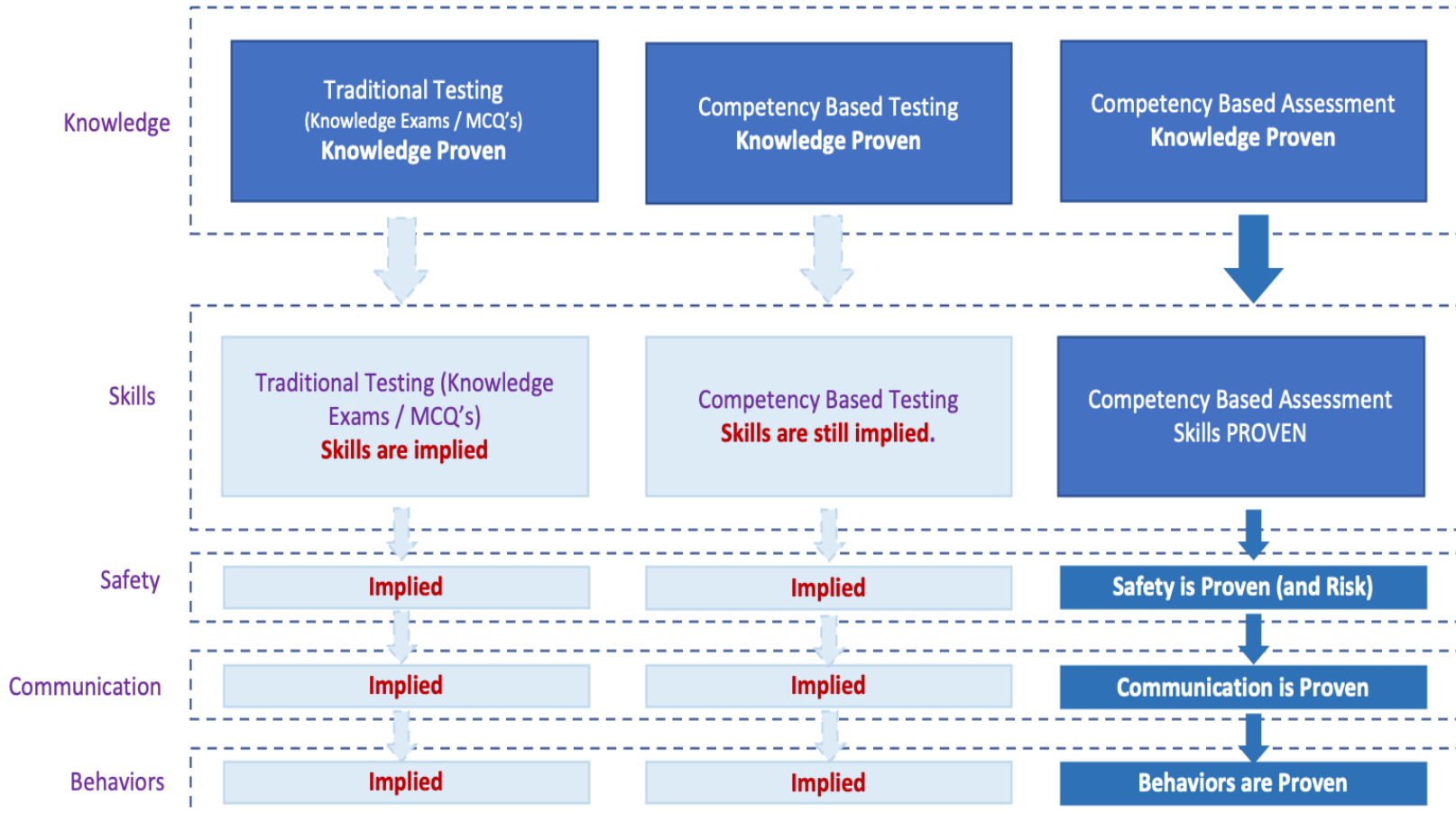
The median **tuition billed to a FlexPath student** was \$10,548. This is **59% LESS** than a similar learner in an equivalent credit-hour program.



In the last quarter of 2018, the **two-year persistence for FlexPath learners** was **23% HIGHER** than in equivalent credit-hour programs.

**When done correctly,
the benefits are plain.**

Understanding why Competency Based Assessment is different (Evidence Model)



Example: Red Seal Plumbers in Canada

- How many skills (tasks) are covered in the curriculum?
- There are 2,987 listed skills / tasks in the curriculum.
- Time taken to Achieve (Fixed at a set number of hours) + pass an end MCQ
(despite MCQ's having gender Bias).
https://www.researchgate.net/publication/256069113_Gender_Bias_in_Multiple_Choice_Questions_Does_the_Type_of_Question_Make_a_Difference
- How are each of these skills assessed and recorded?
- Ticks in Log-Books. (No standardization), Theory Exams
- (Some log -books are only a couple of pages)
- How is quality of the assessment assured?
- The quality is non-transparent beyond the original authenticator.
- This makes third party transparently almost impossible. (Hence the issues with credential recognition and immigration)

Example: Plumbers in the UK

- How many skills are covered in the curriculum?
 - 990 taking around 24-48 months to complete, depending on ability and experience.
- How are each of these skills assessed?
 - All Observed / witnessed, with embedded Questioning and Safety both in the workplace and the college.
 - Specific needs of the apprentice are accommodated based on learning styles.
 - When all the competences are covered, the award is given after independent validation.
 - Colleges also fill gaps not demonstrated in the workplace if practical evidence is not provided in the workplace.
 - The Portfolio allows the college to see these gaps and ensure they are addressed either remotely (distance material or in the class if it is a collective need).
- How is quality of the assessment assured?
 - A Qualified and Trained Assessor. Impartial End Point Assessors. Overarching Verification and Regulatory body Sampling.
 - A portfolio of evidence is collected by the Apprentice over the term of the apprenticeship. Showing progress, gaps and any areas of concern (such as safety or risk issues). The Apprentice can complete based on personal exposure to skills and learning and achieve the qualification based on proficiency, consistency and transparent performance.

Using a Blended Competency Based Assessment Resource:

Demo of Valid 8

Covering:

- Skills
- Knowledge
- Understanding
- Safety
- Skills
- Language
- Behaviors
- Essential Skills

Valid 8

- Enables the learner to call for an assessment when they are ready to demonstrate their competence
- Anytime / anywhere assessment and validation
- Building of an effective, modular e-portfolio with legally defensible evidence of capability and skills.
- End time-served basis for competency and focus on demonstrable skills.
- Assessment by quality evaluators who can be anywhere in the world + validation of assessment by a third party.

Valid 8 Is In Use..

- In Europe, the US and now in Canada
- Used in the skill-trades, health care, education and defence & emergency services.
- Pilots launching in Alberta and other parts of Canada



Questions? Comments?

stephen@contactnorth.ca