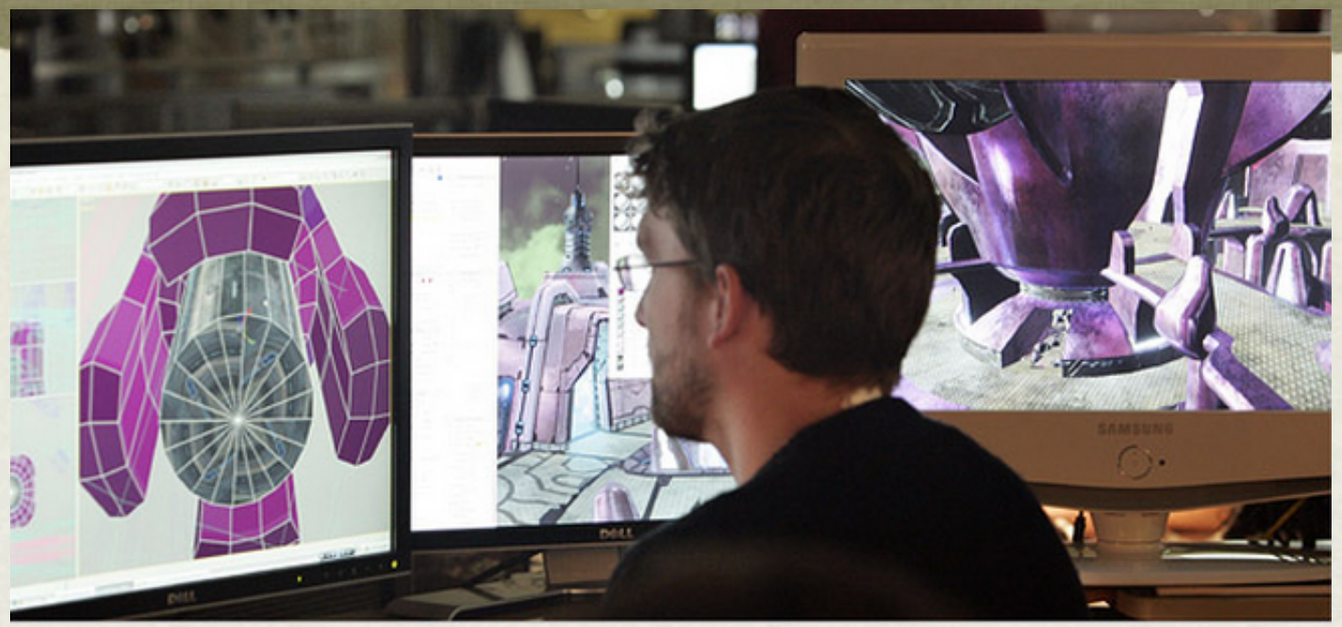
Colloque Ressources Numériques, MOOC et FAD:
enjeux et collaborations en enseignement supérieur
Montréal
28-29 May, 2018



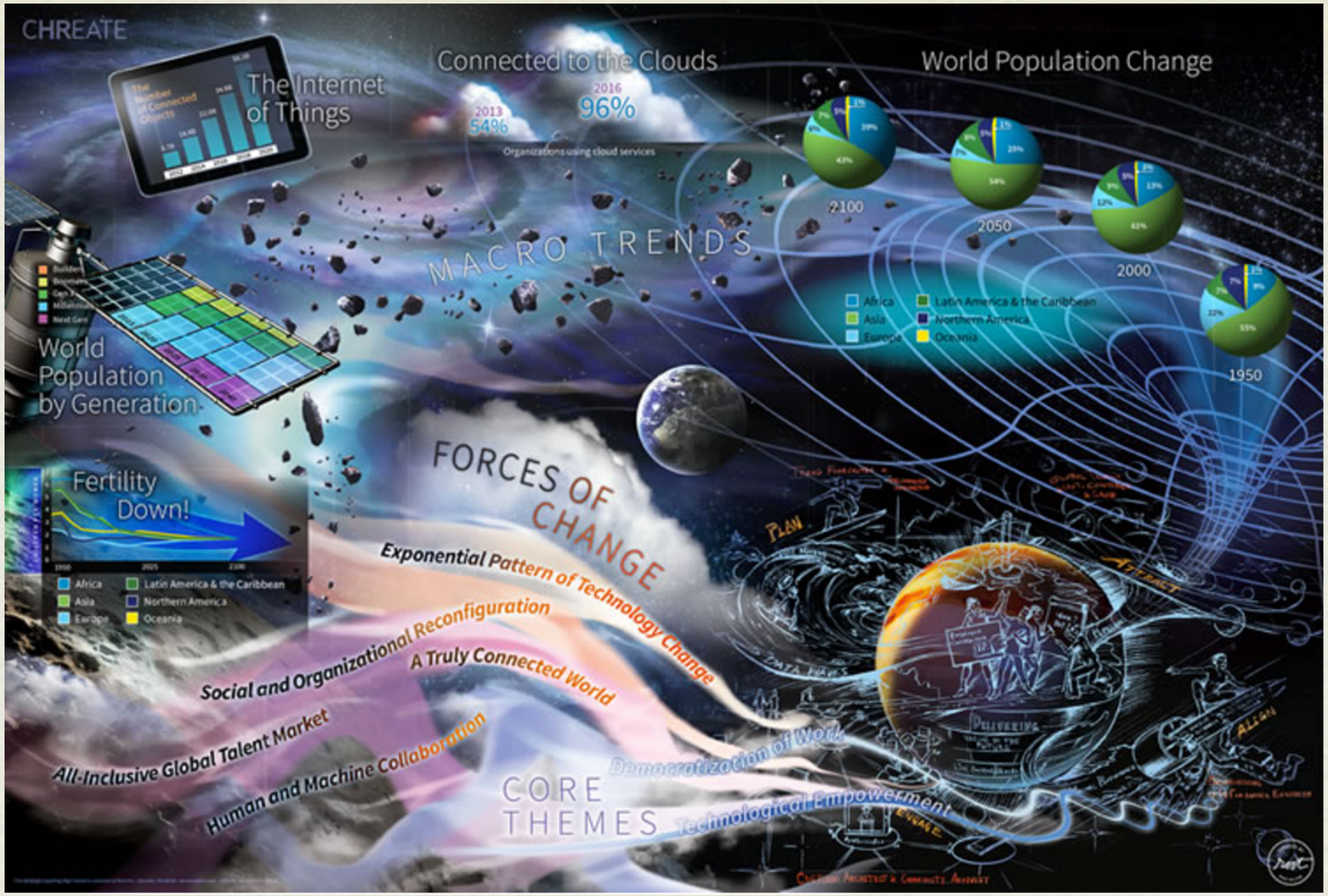
Re-designing Teaching for a Digital Age

Dr. Tony Bates
Distinguished Visiting Professor,
The G. Raymond Chang School of Continuing Education
Ryerson University

Overview

1. Key forces of change
2. Online learning in Canada
3. Current trends in online learning
4. Pockets of innovation
5. Implications for teaching
6. Conclusions

1. KEY FORCES OF CHANGE (affecting university teaching)



1. Key forces of change

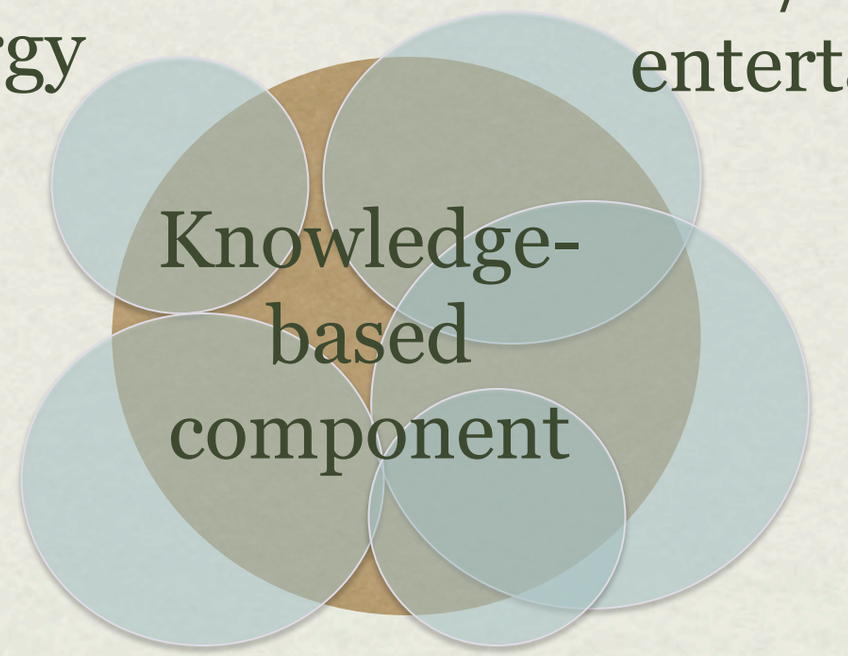
- Changing workforce; new work and new knowledge/skills
- Changing students; more diversity
- Need for more individualized learning (personalization)
- New modes of delivery: blended, online, OERs, MOOCs
- New technologies: video, social media

1. Key forces of change:
a. Demands of a digital economy

Where will the jobs be?

Resource-based/
energy

IT/media/
entertainment



Manufacturing

Retail/
Financial/
Services

Health/
education

1. Key forces of change
b. the need to develop 21st century skills

communication skills

independent learning

ethics/responsibility

teamwork and flexibility

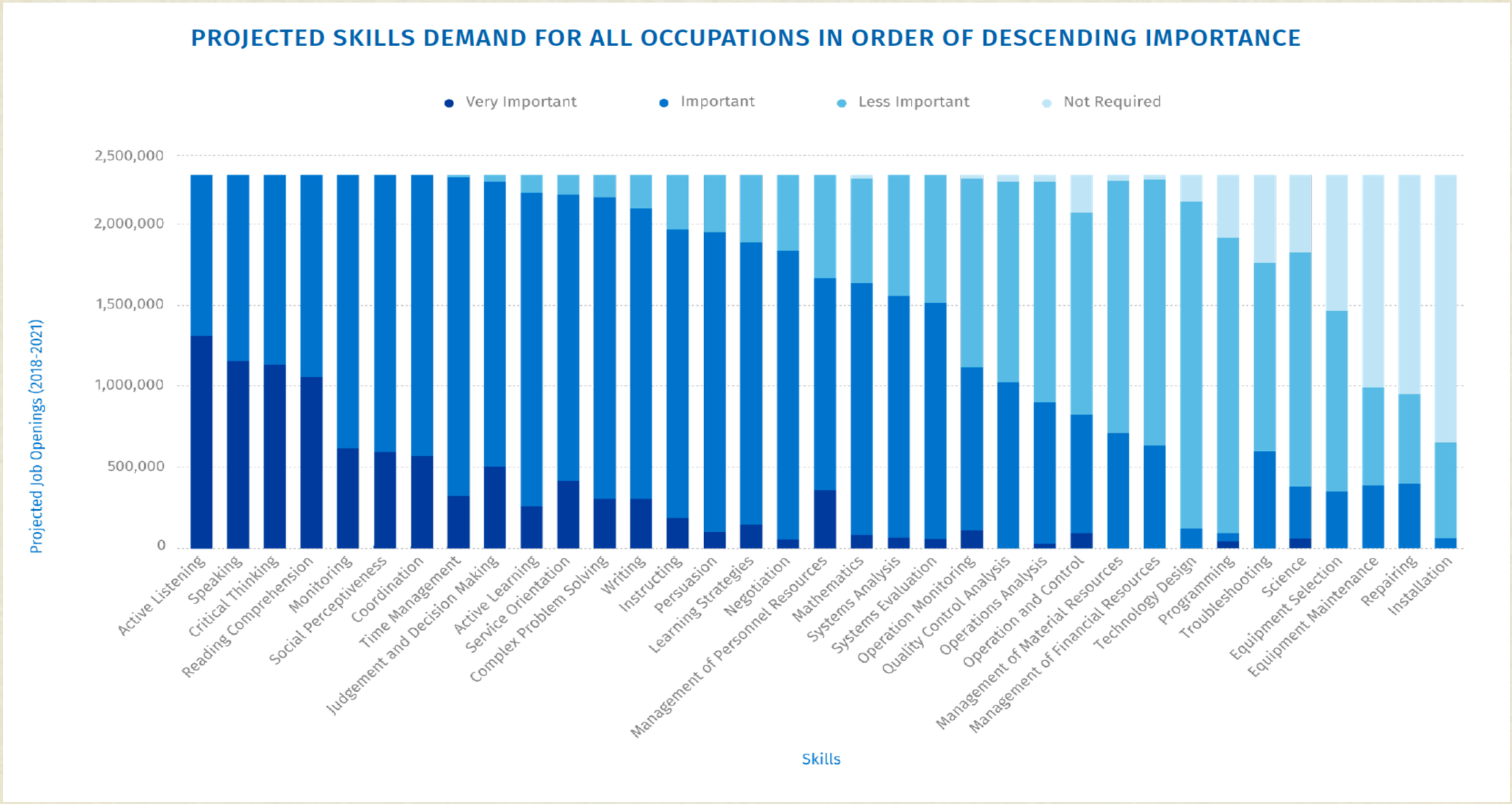
thinking skills (critical thinking, problem-solving, creativity)

IT skills embedded in subject area

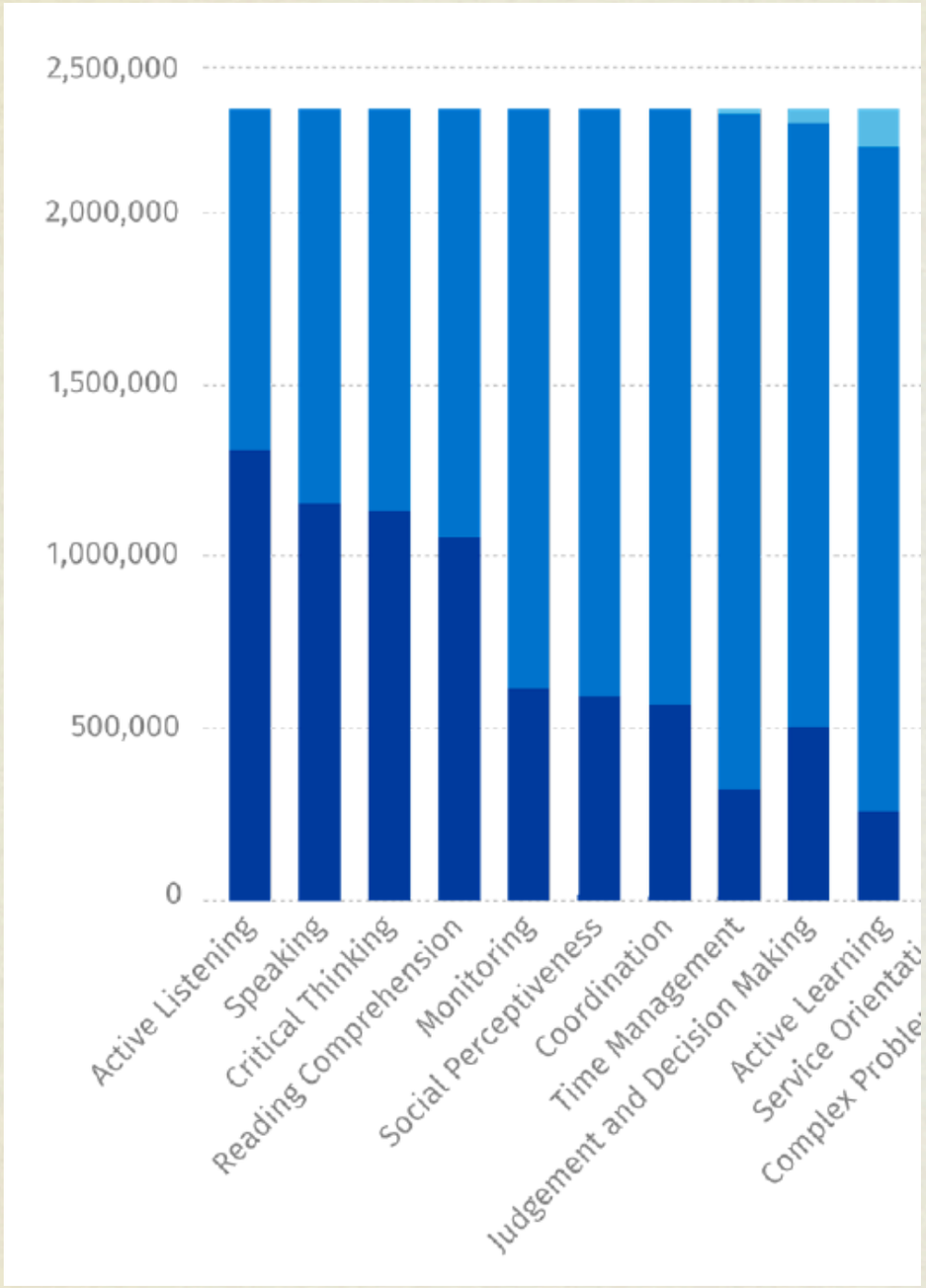
knowledge management

1. Key forces of change
Skills in demand

Royal Bank of Canada study ('Humans Needed'):

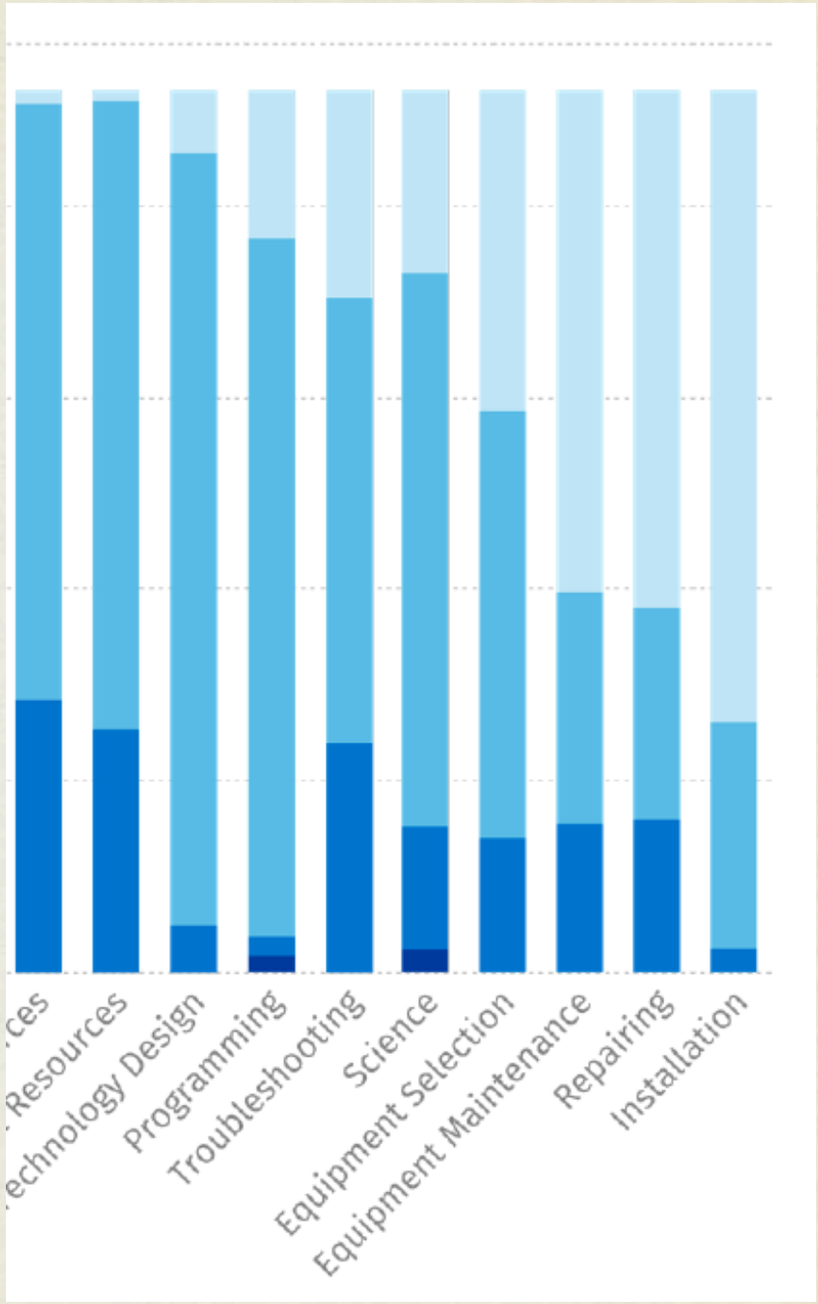


1. Key forces of change
Skills in demand



High-end

- very important
- important
- less important
- not required



Low-end

2. Main trends

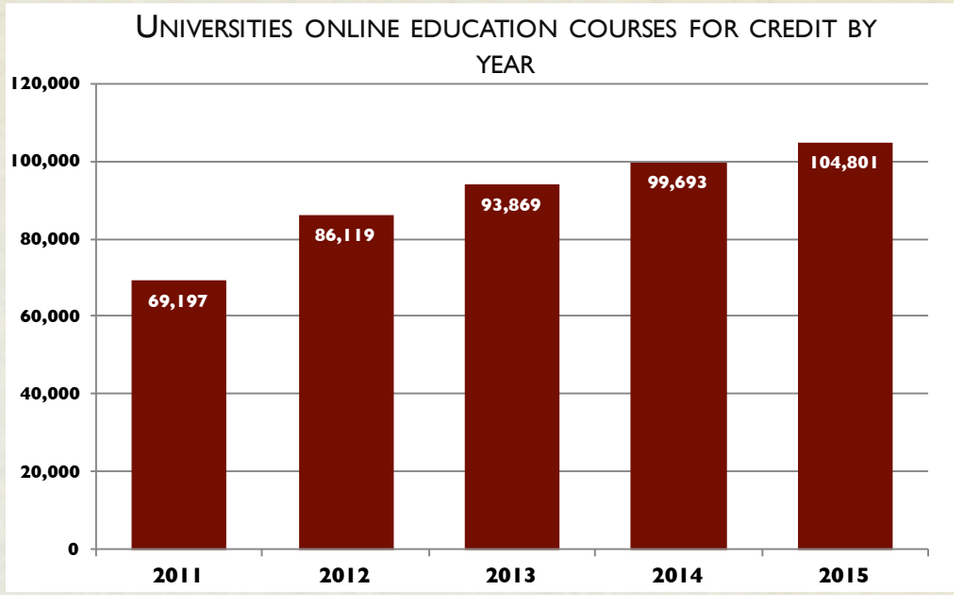
2a The 2017 National Survey of Online Learning in Post-Secondary Education

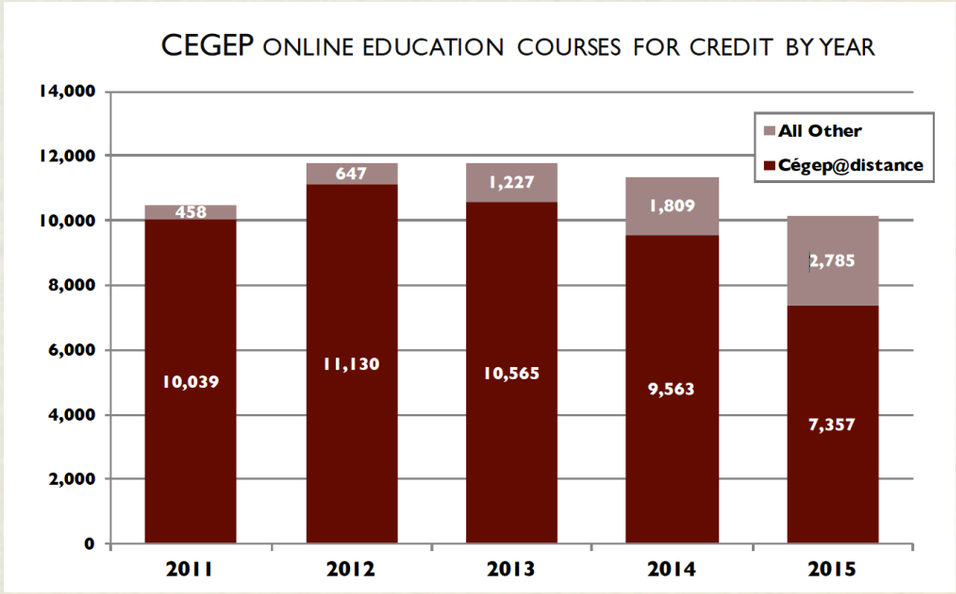
2a Main results: institutions

- Response rate: institutions 69%; student pop. 78%
- Nearly all PSIs offer DE for credit
- Online learning mature market in Canada
- Fully online courses: almost all universities; and all colleges outside Québec; 43% of CEGEPs

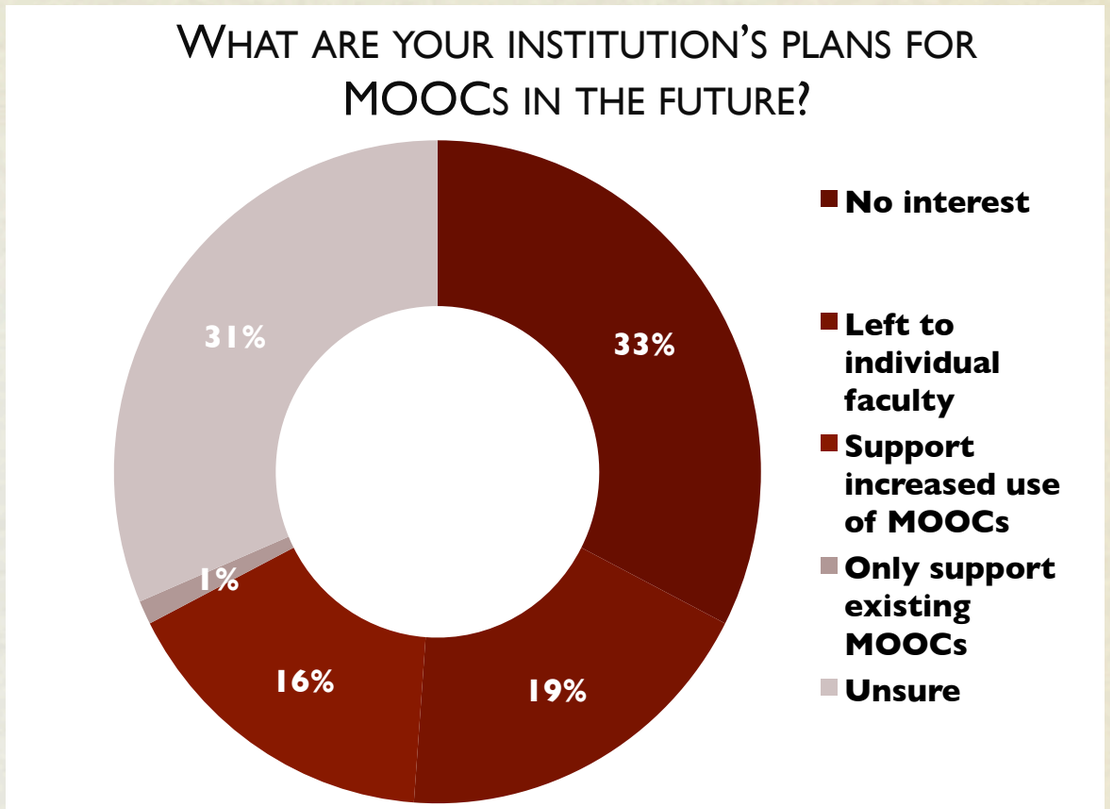
2a Main results: online enrolments

- Rapid growth except CEGEPs
- 16% fully online in universities; 12% in colleges except Québec
- Over two-thirds rated online learning very important for future
- Hybrid learning wide but thin
- Clear link between government funding and online enrolment growth





2a Main results: MOOCs and strategies



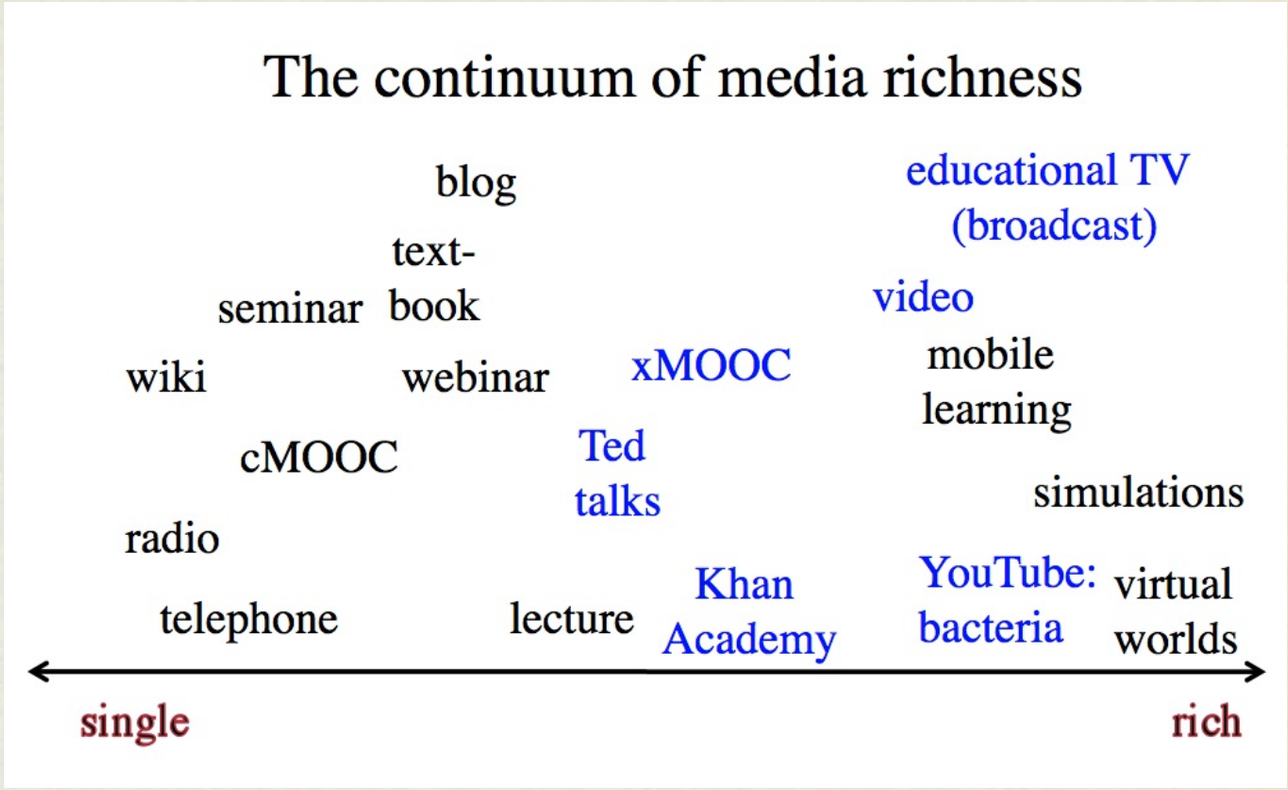
- no MOOC mania in Canada:
- <20% offered MOOCs;
- looking for 'niche'/added value in future: UQTR; CBU
- 33% no interest in future

2b Open education

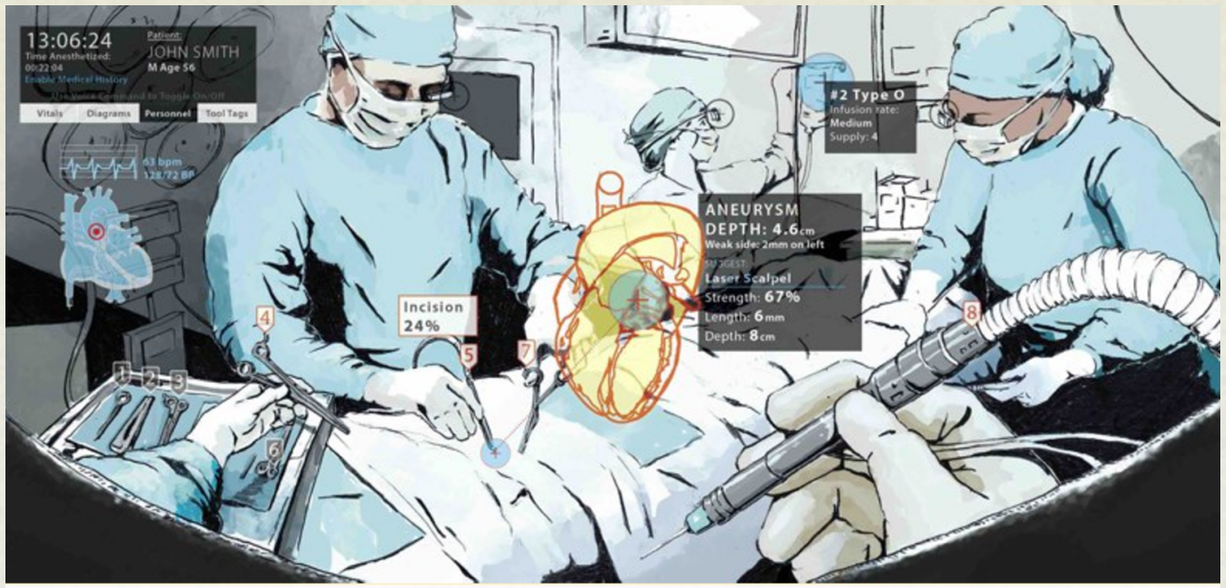
- open textbooks
- open research
- open educational resources (OER)
- content will be free, abundant and all online
- teaching + learner support key quality differentiator
- **the real game-changer**

2c multi-media

- Print and talk historically dominant; abstract, linear
- Knowledge represented now through many different media: text, audio, video, computing, virtual reality
- Research shows learning enhanced by multiple representations of knowledge



2.Trends: multi-media



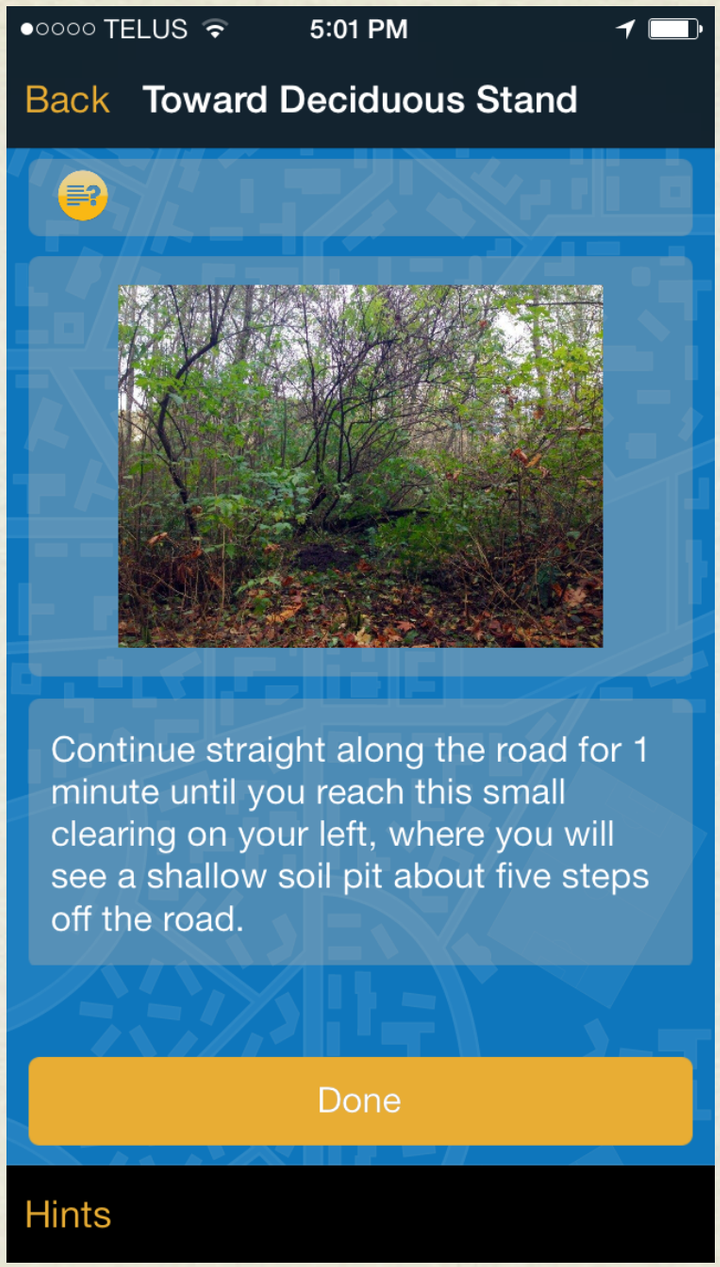
Virtual and Augmented Reality from the Augmentarium at the University of Maryland

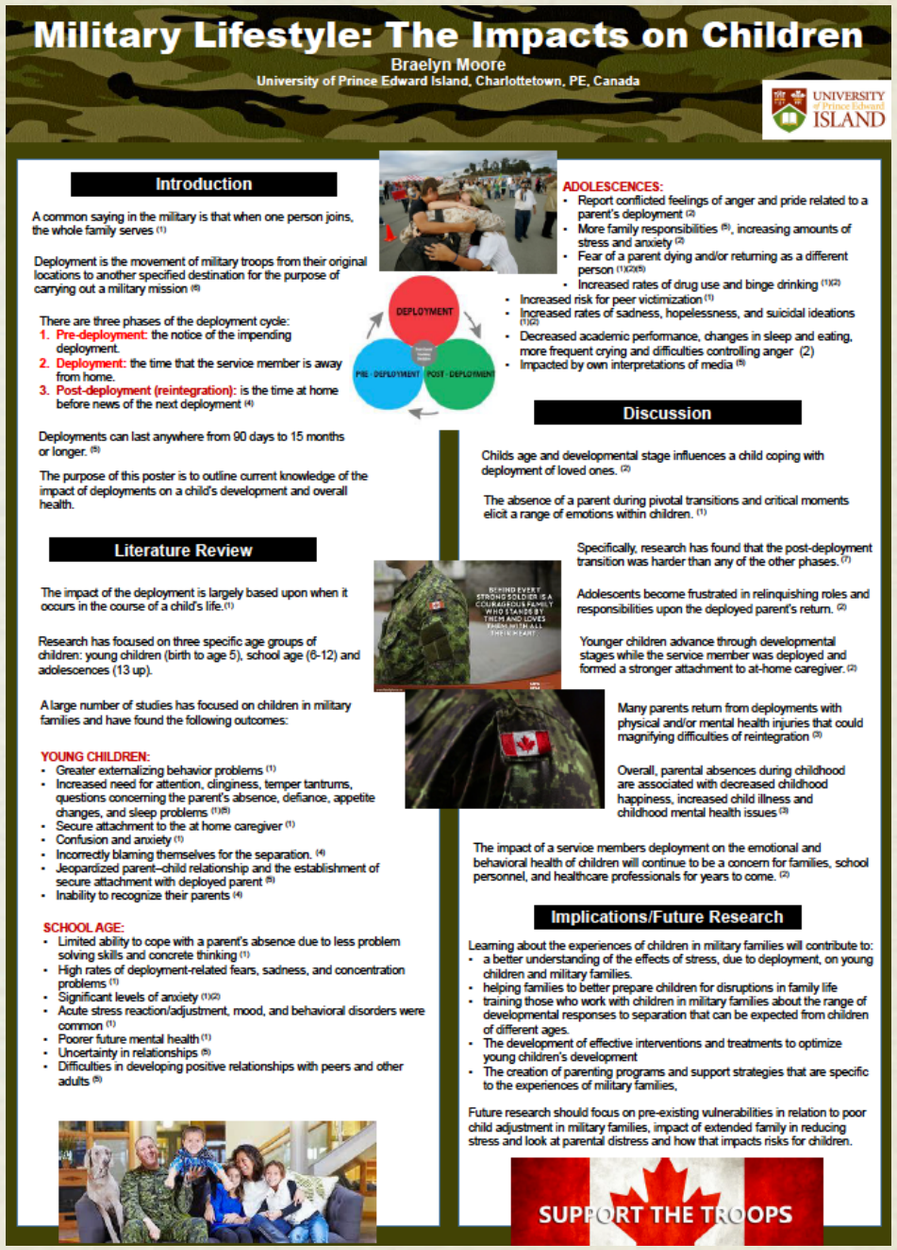
- Importance of recording: stop/start/repeat
- Allows learners to work at their own pace
- Facilitate move from concrete to abstract and reverse
- Meets individual preferences for learning

2 Trends

- Increasing fully online enrolments
- Move to hybrid learning
- Open education
- Multimedia
- Digital society: skills for 21st century
- Implications for teaching

3. Pockets of innovation





Pockets of innovation

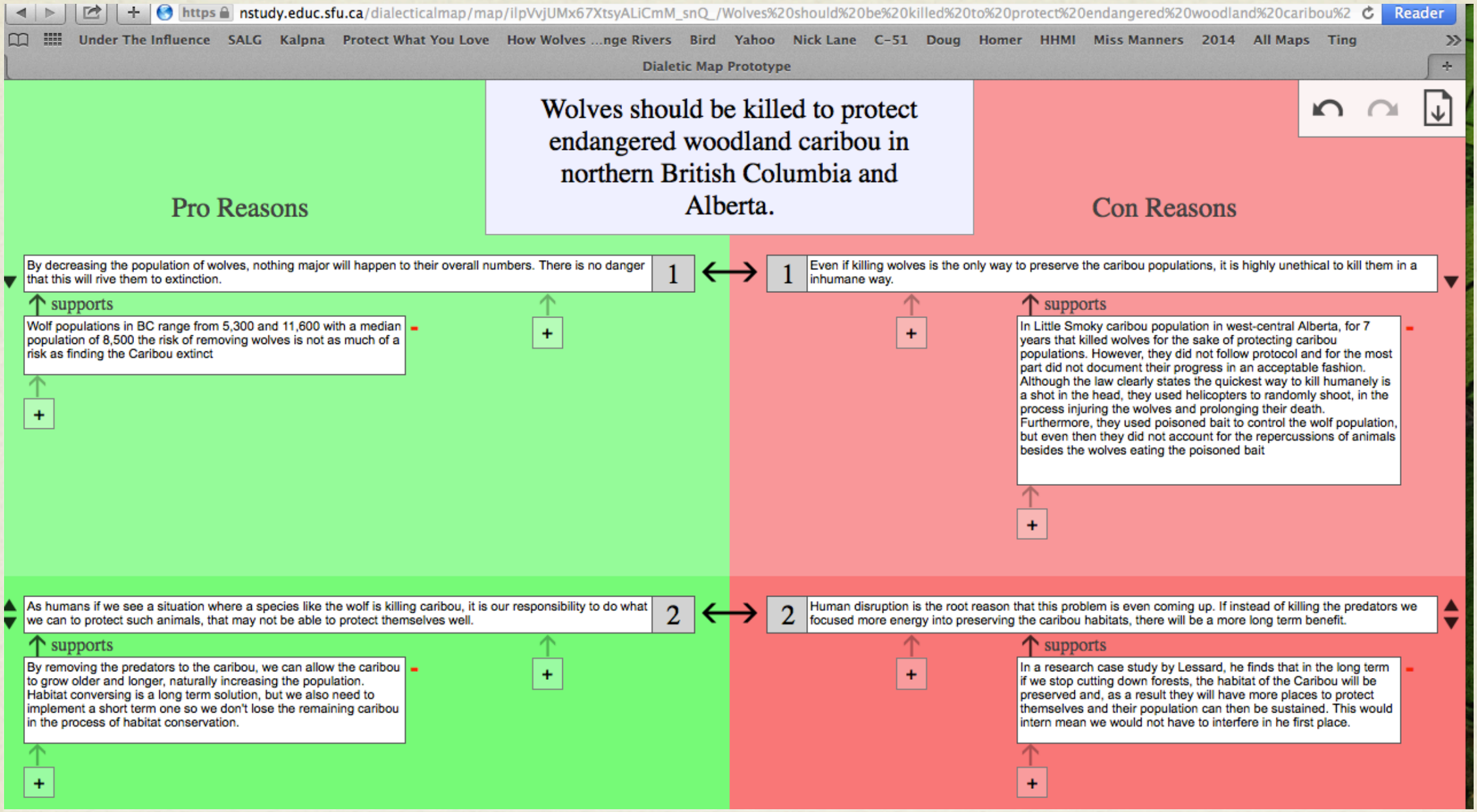
- Contact North: 180 cases
- Mainly Ontario; 20 outside Ontario; some international
- Non-judgemental interviews with innovating instructor
- Chosen by Centre for Teaching and Learning
- Why? What? Outcomes/Lessons

Loyalist College's Virtual Border Post

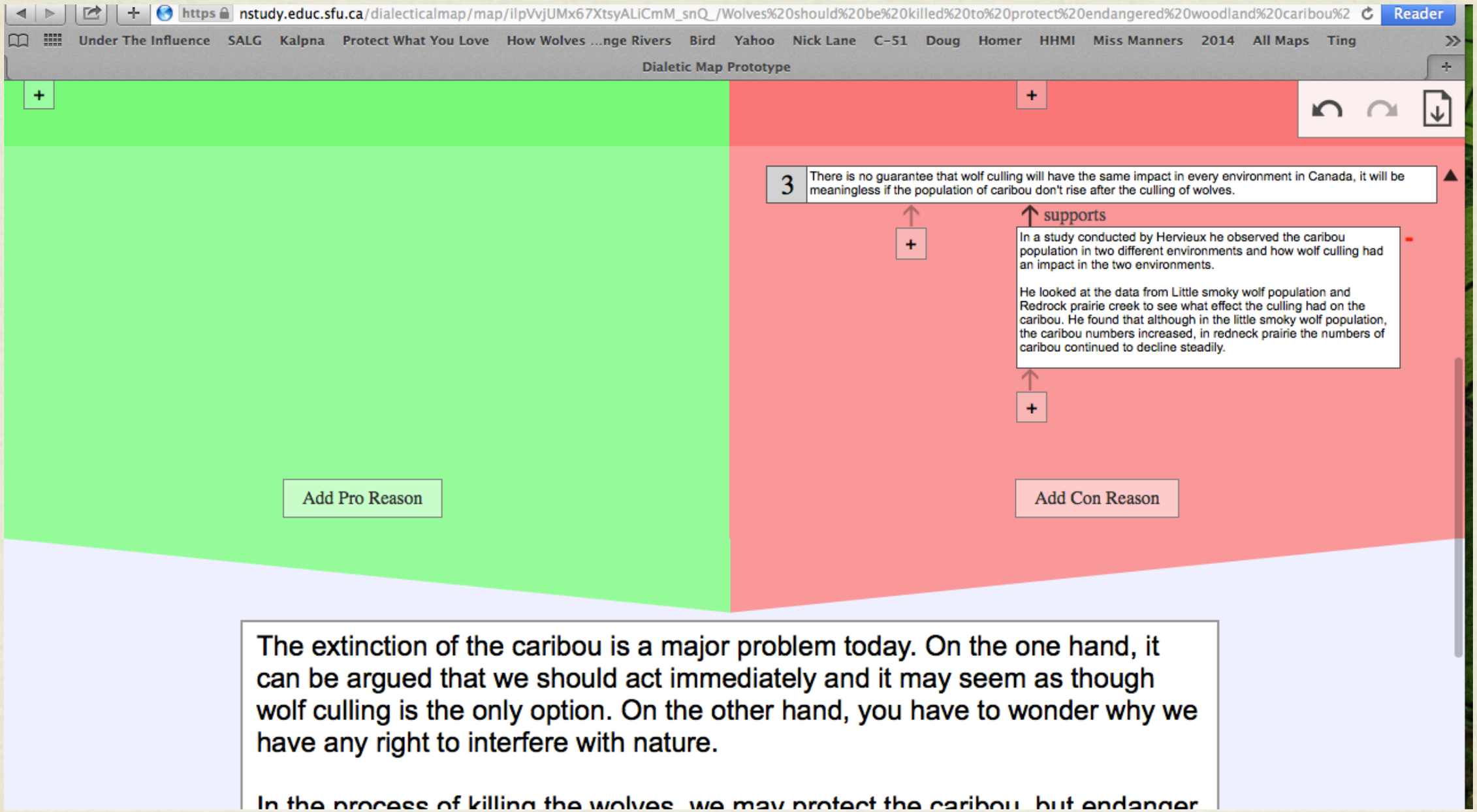
Scientific argumentation

- Teaching scientific argumentation
- Simon Fraser University biological sciences
- Students expect a ‘right’ answer for every scientific question
- Poor skills at scientific argumentation
- Simple web-based tool

Scientific argumentation

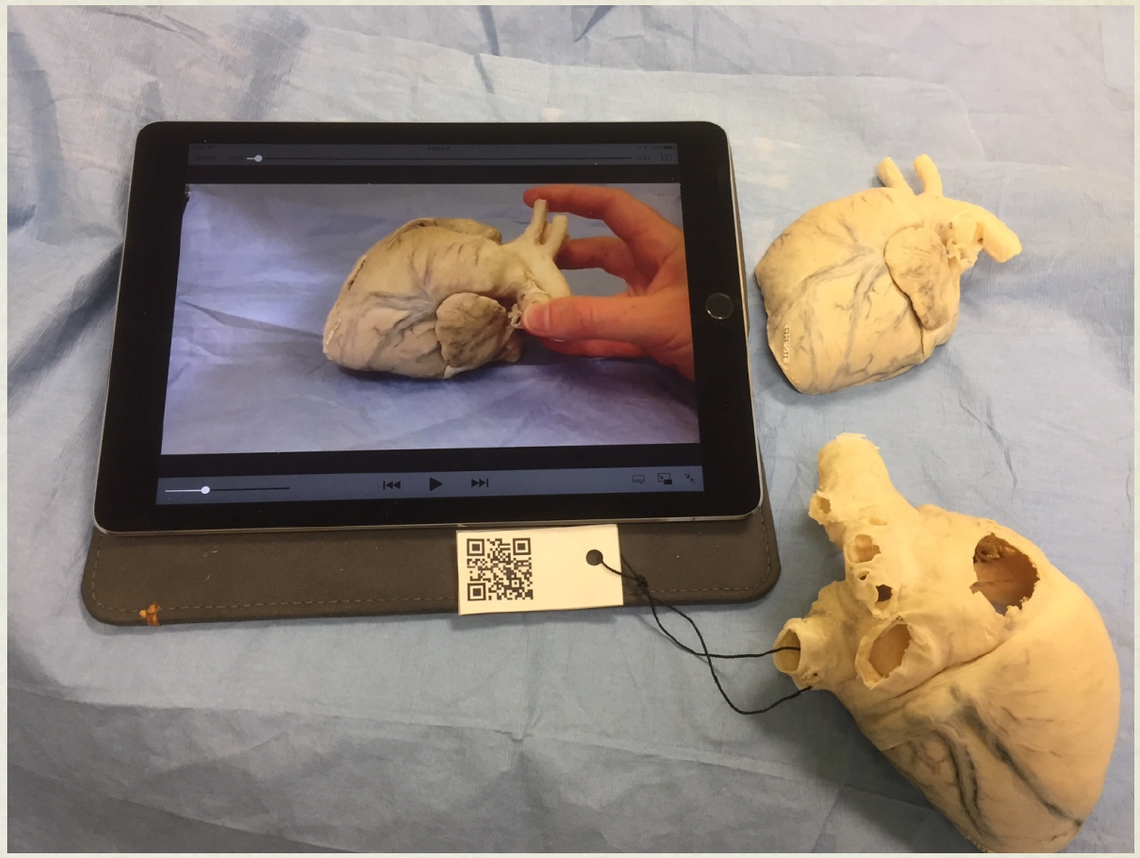


Scientific argumentation



Simple video for demonstration

- Use of rare specimens in gross anatomy
- University of Prince Edward Island veterinary school
- Only one plastinated model of dog's heart
- Use of mobile phone and QR tags for simple video explanation



Lessons learned

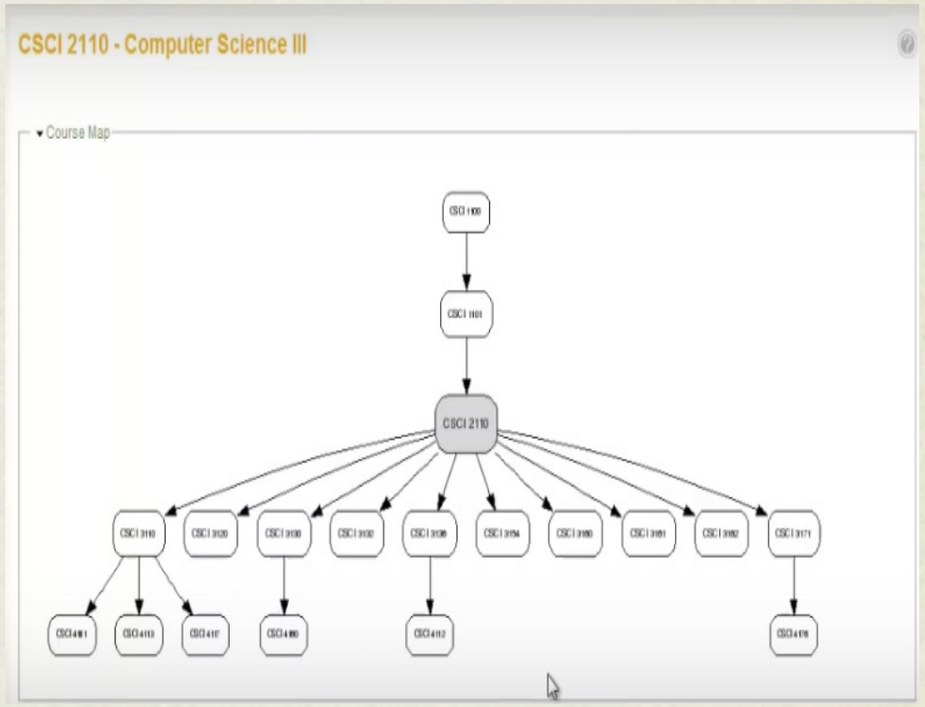
Why?

- To increase student access/flexibility
- To solve specific teaching problem

Rarely driven by pedagogy/technology

What? About half changed teaching method as a result; wide range of technologies in studies

Rarely wider adoption: no innovation strategy



B. Computer Science, Dalhousie

4. Implications for teaching and learning

4. Implications for teaching and learning: New modes of delivery

blended

fully online

face-to-face

classroom aids

flipped

hybrid

(distance)

no technology (mode of delivery) all technology

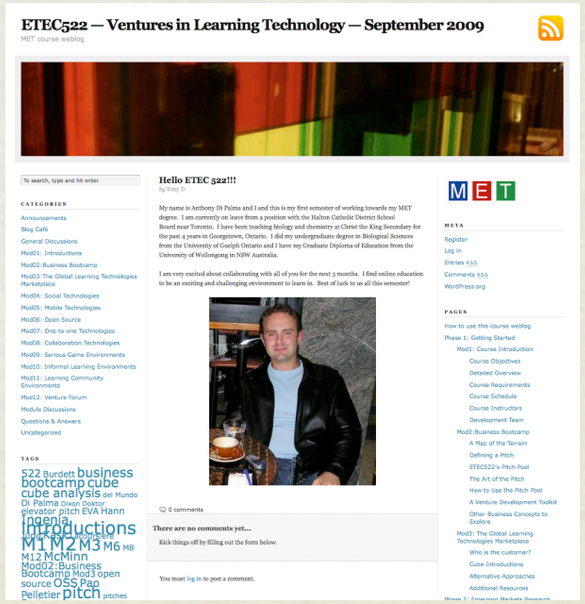
4. Implications for teaching and learning: content and skills

- Content = facts, ideas, principles: ‘knowing’
- Skills = understanding, analysing, evaluating, applying: ‘doing’
- Both necessary in today’s society
- BUT: content has been the traditional priority in HE

4. Implications for teaching and learning: content and skills

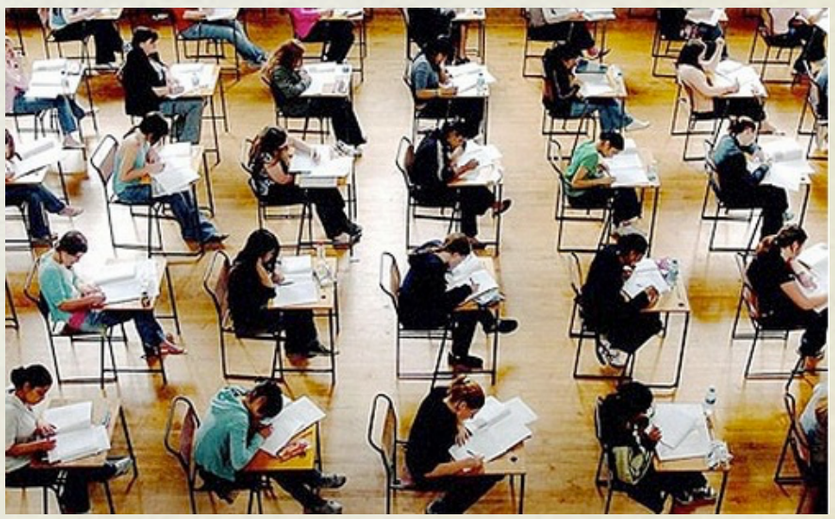
We know a lot about how to teach skills:

- Context-specific
- Learners need lots of practice
- Small steps
- Regular feedback from expert
- Develop over a program rather than one course



4. Implications for teaching and learning: content and skills

- How do you develop skills? What teaching methods?
- Relationship between content and skills
- What role can technology play in developing and assessing skills?
- What do we assess – and how?



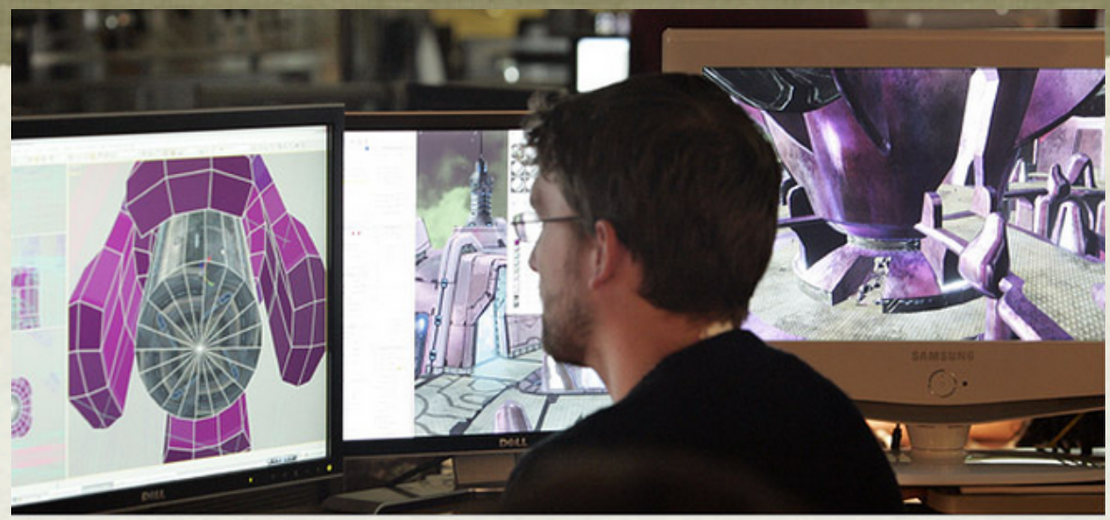
4. Implications for teaching and learning: New teaching approaches

- from information transmission to knowledge management
- skills development + content
- lecture-based courses replaced by student projects, problem-based learning, collaborative learning
- goodbye written exams: replaced by e-portfolios demonstrating student's knowledge/skills

4. Implications for teaching and learning: New instructor roles

- Teaching performance will be a major competitive advantage
- Instructors need pedagogical knowledge + technology skills
- Requires pre-service + in-service training + tenure/promotion reward
- Learning technology support (instructional designers + media designers) + team-work

5. Conclusions



- Digital economy requires high-level intellectual skills
- Teaching methods must include skills development
- Technology enables more flexible delivery/ways to practice skills
- But all within a specifically designed learning environment that supports learners

Questions

- Are you convinced of the need for change in your teaching?
- What is the most relevant of these developments for your teaching?
- What are the main barriers you face in changing your teaching?

- Teaching in a Digital Age: https://opentextbc.ca/teachinginadigitalage/

- Blog: Online Learning and Distance Education Resources: http://www.tonybates.ca/

- E-mail: tony.bates@ubc.ca