How to Overcome the Challenges of Shifting to a New Paradigm of Learning

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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
- Consultant, writer and imagineer

This Presentation

- Three features of our historical landscape that impact our future
- Five dynamics in the current environment that we should pay attention to – they will shape our future
- Four focal points for you to consider – action points
- The new paradigm for teaching & learning – what it involves
- How to overcome the challenges of thinking about adopting a new approach..
- Some concrete suggestions..

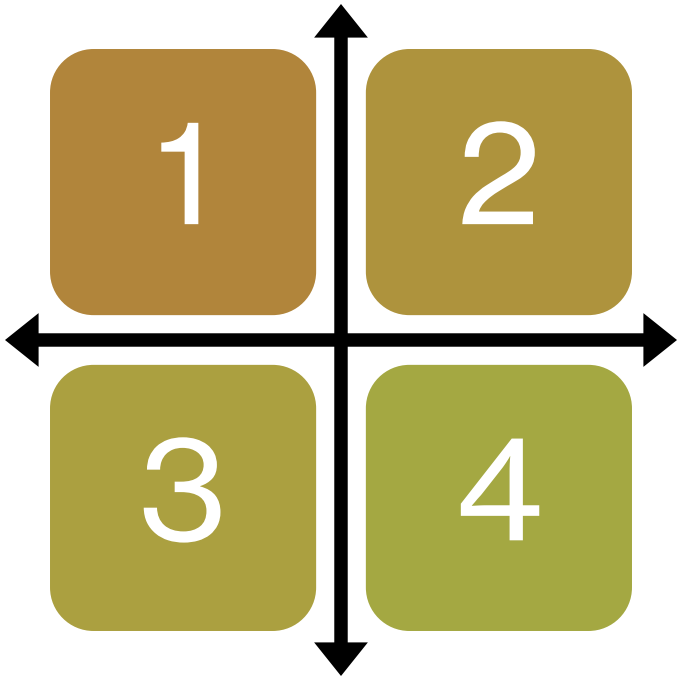
Four Scenarios for the Future (Based on the work of Benjamin Bratton)

WHEN YOU TRY AND INNOVATE!

Four Characters in Higher Education in a Post-Pandemic World – An Epidemiological View

Sensing High
Wanting to Know - Engaging Difference and Complexity

The Atomistic Transactional Self
"What's in it for me?"



The Interconnected Self
"It's about all of us critters in ecologies of communities"

Sensing Low
Not Knowing, Not Wanting to Know – Indifference to Complexity

Adapted from Bratton, B. (2020). 18 Lessons of Quarantine Urbanism. Strelka Mag.
https://strelkamag.com/en/article/18-lessons-from-quarantine-urbanism

3 Long Standing Patterns

1: Tension Over Purpose

- **What is the purpose of the university ?**
  - Search for truth, meaning and understanding or vocational preparation and social change (Richard Hofsteader, 1968)?
  - Public good and active citizenship or commercialization and commodification?
- **What is the difference between a University, a College and a Polytechnic?**
  - Development of highly qualified people and research aimed at innovative economic growth versus skills and applied research?
- **STEM versus Arts, Humanities and Social Sciences**
  - Preoccupation with STEM is a distraction from what society actually needs

2: Tensions over Funding

- Since 2016 other sources of funding (especially tuition) exceed government funding of colleges and universities.
- Tuition costs have risen faster than the rate of inflation.
- Over the past 10 years, the increase in tuition for law (85%), dentistry (78%), pharmacy (144%), and MBAs (101%) far outpaced that of the average undergraduate degree (44%)
- Student debt now $18 billion and is owed by 1.7 million students.
- Student debt is a major reason for personal bankruptcies – 22,000 in 2018.
- By 2036, a 4-year degree in arts could cost over $146,000 (according to Statistics Canada)
- All of these factors create tensions over **value** (ROI) – 40% of graduates work in jobs which do not require a degree.

3. Tensions Over Teaching and Quality Learning

- Does what we teach match what students need for understanding, citizenship, work, community engagement, sustainable development?
- Does how we teach leverage their abilities, skills, knowledge and understanding?
- Are our frameworks for quality assurance getting in the way of teaching innovation?
- Does the way we assess students compromise the nature of learning? How good is our work on the assessment ***of*** learning ?
- Are there disconnects about the outcomes of learning and employer | society expectations?

5 Patterns Emerging from the Time of COVID

1: Globalization of Learning

- 40 million registered for learning experiences with edX, Coursera or FutureLearn in 2021 – 700,000+ of these being Canadian
- MOOCs now offer over 70 degrees
- MOOCs now offer over 1,670 microcredentials
- Some MOOCs now ladder into undergraduate and graduate programs (e.g., MITx's programs ladder into 22+ Masters degrees around the world).
- Key feature: available on demand, low cost and very accessible.

2: Emergence of Microcredentials

- Over 3,432 microcredentials in Ontario – close to 10,000 across Canada.
- Few align with the e-campus Ontario or CICan frameworks (e.g. industry partners, competency-based assessment) and almost none available on demand.
- Potential disruptors to long-form (Diploma and Degree) learning especially as more are becoming both stackable and transferable.
- Blurring of the line between credit / non-credit.
- Creating new ways of working, especially when coupled with work-based learning and work-based learning accreditation.

3: Continued Growth and Expansion of Online Learning

- In Ontario, online has been growing at 14% per year since 2015 - Face-to-Face growth much lower (<2%). Across Canada - growth is app. 8% per year.
- Since 2010, $52 billion investment in EdTech globally – with AI, assessment and AR/VR leading. In 2021, $18 billion invested – already higher than 2020 ($16 billion).
- All universities and colleges have strengthened their IT infrastructure during the pandemic and many staff have received some training / development in the design and development work required

4: Decline of Secure Academic Work

- Before the pandemic, 54% of university teaching and 57% of college teaching was undertaken by contracted “gig” workers.
- Decline in research-intensive positions within universities.
- Academic work in universities growingly problematic – publish or perish, sensitivities about ideas and trigger events, etc.
- In colleges, rapid shifts in the nature of work cause some programs to have to change more rapidly, requiring constant updating of courses, teaching and placements

5: The Digital Disruption of Work

- 30-40% of all jobs in Canada will be affected by emerging technologies – including work in the professions (law, accounting, architecture, engineering, medicine) and in trades.
- As companies and employers adjust, so too must curriculum and assessment and our teaching infrastructure.
- More rapid course development, more employer: institutional partnerships more future proofing the curriculum.
- More emphasis across all teaching on “soft skills” (which are hard to teach)

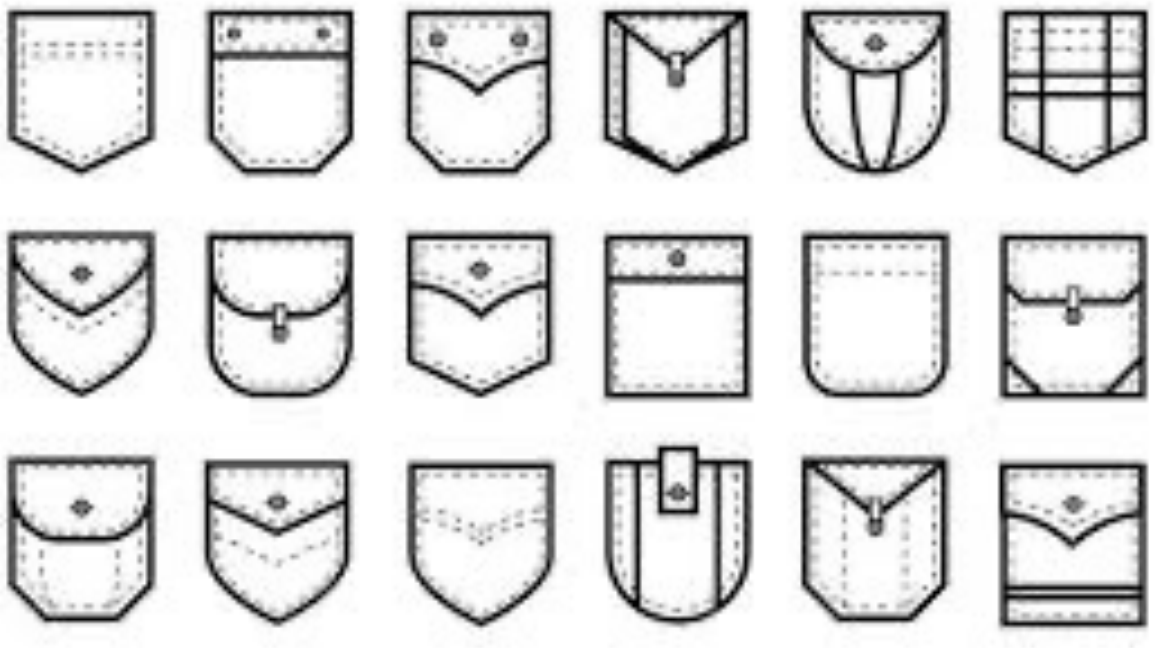
Perfect Storm

- The market dynamics are changing for **who** wants to study, **what** they want to study and **how** they want to study – e.g., STEM + Health = 40% of of our system.
- **The economics of our institutions are changing** – more precarious, more short-termism and supported by debt (carried by students) – e.g., Ontario government invested $1.6 billion in operating grants in its colleges, but Colleges secured $1.7 billion from international students in that same year. They are still called “public” colleges.
- **The nature of knowledge is also changing** – both more specialized and more generalized at the same time. 28,000 academic journals – over 2 million papers a year, 87,000 this year alone on COVID-19 (one with 175 authors).
- **The nature of teaching, learning and assessment is evolving** – enabled by new approaches and new technology.
- **Growing disconnect** between what colleges and universities are doing and what society, employers and learners need.

Five Possible Actions

Before we Explore

Acknowledgement: Pockets of Innovation



- There are pockets of innovation everywhere…
- No serious / intelligent designer would make a suit / dress only out of pockets.
- Intentional design requires us to imagine our work differently: new conditions require a new approach

1: Strengthen Collaboration

- Blur boundaries between colleges, polytechnics and universities
- Offer more transparent and “instant” pathways between colleges and universities
- Offer degreed apprenticeships (as they do in the UK)
- Do more modular, stackable and transferable microcredentials as collaborations
- Open up MOOC pathways within your programs

2: Rethink Credentials

- Break out from the Carniege unit and stop basing credentials on time – use competencies / knowledge blocks to design programs.
- Offer 2-year, 3-year degrees – and stop offering everything “by semester” – have more options on demand
- Develop assessment only credentials - look at the University of Wisconsin
- Develop more modular, stackable credentials
- Offer genuine work-based accreditation in partnership with corporations

3: Reimagine Teaching & Learning

- Stop seeing learning as a behaviourist / banking frame and see it more in terms of engaged experiences and project-based work – learn from the Technologico de Monterey Tec21 Engineering program
  - Challenge based learning, flexible modular courses based on emerging needs, inspired teaching and comprehensive community-based/work-based learning
  - Assessment by competencies and capabilities, including peer assessment
- Stop seeing content as king and engage in creative, inspired instructional design
- Stop seeing teaching as a lonely activity and start seeing a classroom as a collaboratory.

4: Rethink Assessment

- Universities and colleges generally do assessment badly – for all sorts of reasons. If assessment practices do not change, then nothing is really chaning.
- Reimagine assessment by:
  - Developing competency-based assessment
  - Focusing more on authentic assessments for learning and less on assessment of learning
  - Stop using multiple choice – it is a discriminatory form of assessment and is a weak way of unlocking capabilities
  - Make more of use of peer assessment (kritik.io) and project--based assessment
  - Make more use of different media – video-based assessment (Valid-8), student presentations (Pecha Kucha), art and story-telling.

5: Invest in Professional Learning

- Do more to support not just individual professional development, but team development
- Focus on design thinking and skills for learning, assessment and effective collaboration
- Focus on learning from others around the world – look at the bold and courageous things be done in New Zealand (Open Polytechnic), Mexico, Dubai (Smart University) and imagine different ways of operating.

Let’s Go Deeper...

Teaching, Learning & Assessment

The New Pedagogy..

Five Key Dimensions

- **Building student agency through their learning** – increasing their control of what and how they learn over time
- **Teaching less and learning more** – focusing more on competencies than content.
- **Active learning rather than passive** – students learning by doing, not listening and note taking.
- **Peer to Peer is as Important as Teacher to Student learning** – students have to learn to be lifelong learners *and teachers* – start now! They also need to learn to be collaborators and co-operators.
- **Assessment for learning is key to capability growth** – our purpose is to enable mastery of knowledge, skills and capabilities. Design assessment to enable this.

Four Critical Roles for Teachers

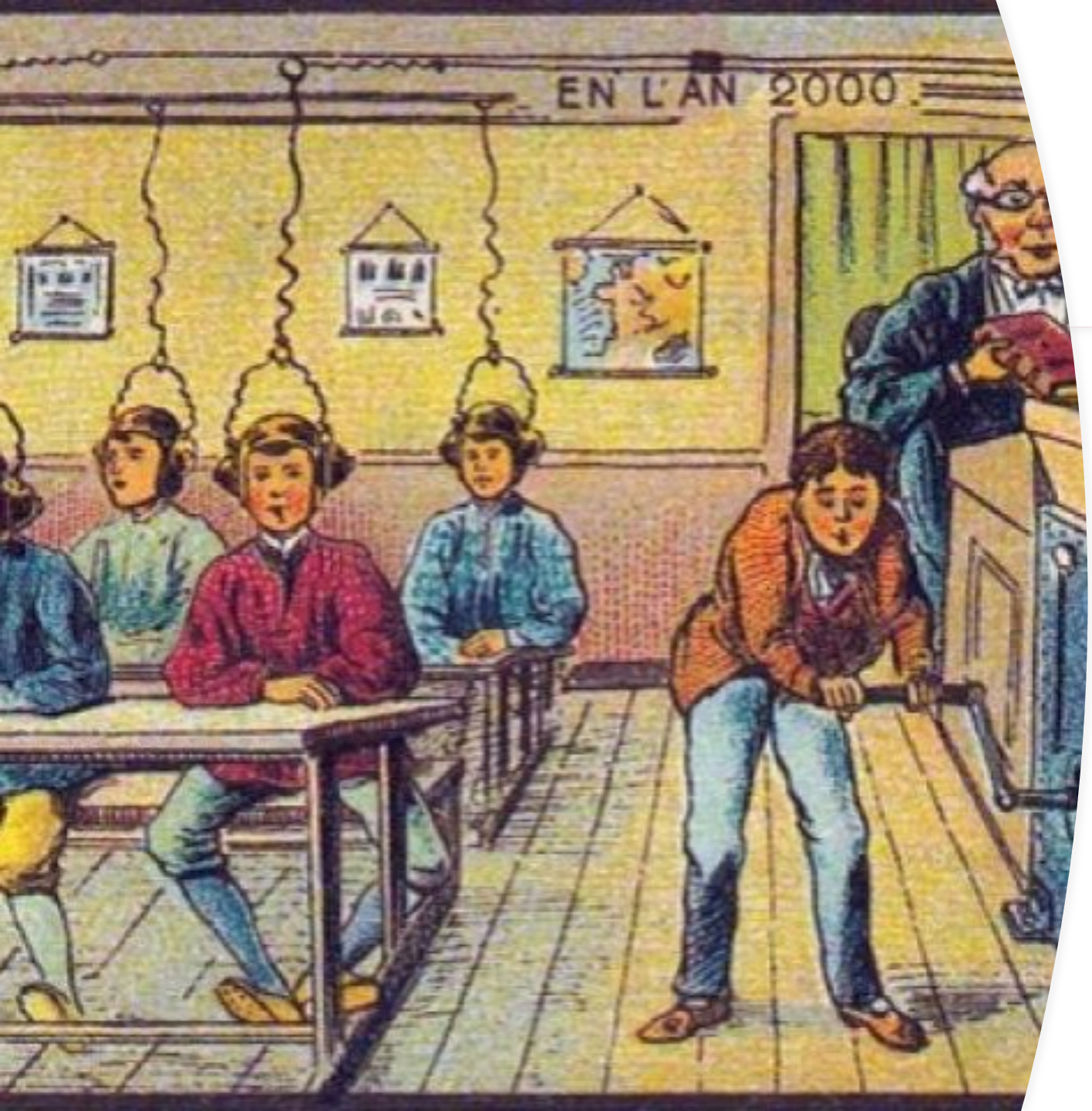
- **Curators and knowledge-keepers** – we know what matters and what students need to know. But we need to find effective ways of making what we know and understand accessible, available and useful – technology can help if it is enabled through interaction.
- **Enablers and mentors** – telling is not teaching. Helping students connect, use, understand and build their own capabilities is what we are asked to do.
- **Coach's and Guides** – when it comes to applying knowledge and capabilities, students need help and support. We should do more of this.
- **Assessors and Learning Organizers** – we do assess but could do so more creatively and effectively and more often.

The Core “Rules” of the New Pedagogy

- **Transformative Learning** – learning which changes how a student understands and applies their learning in powerful ways.
- **Developmental –** progressively developing knowledge, skills and capabilities through learning.
- **Skills and Outcome Oriented** – less about content and more about knowing-doing.
- **Coherent** – the entire learning journey needs to have its own inner-logic. Not 40x3 unconnected credit courses but one mapped learning journey.
- **Experientia**l – not passive, but active (even if through games and immersive learning).

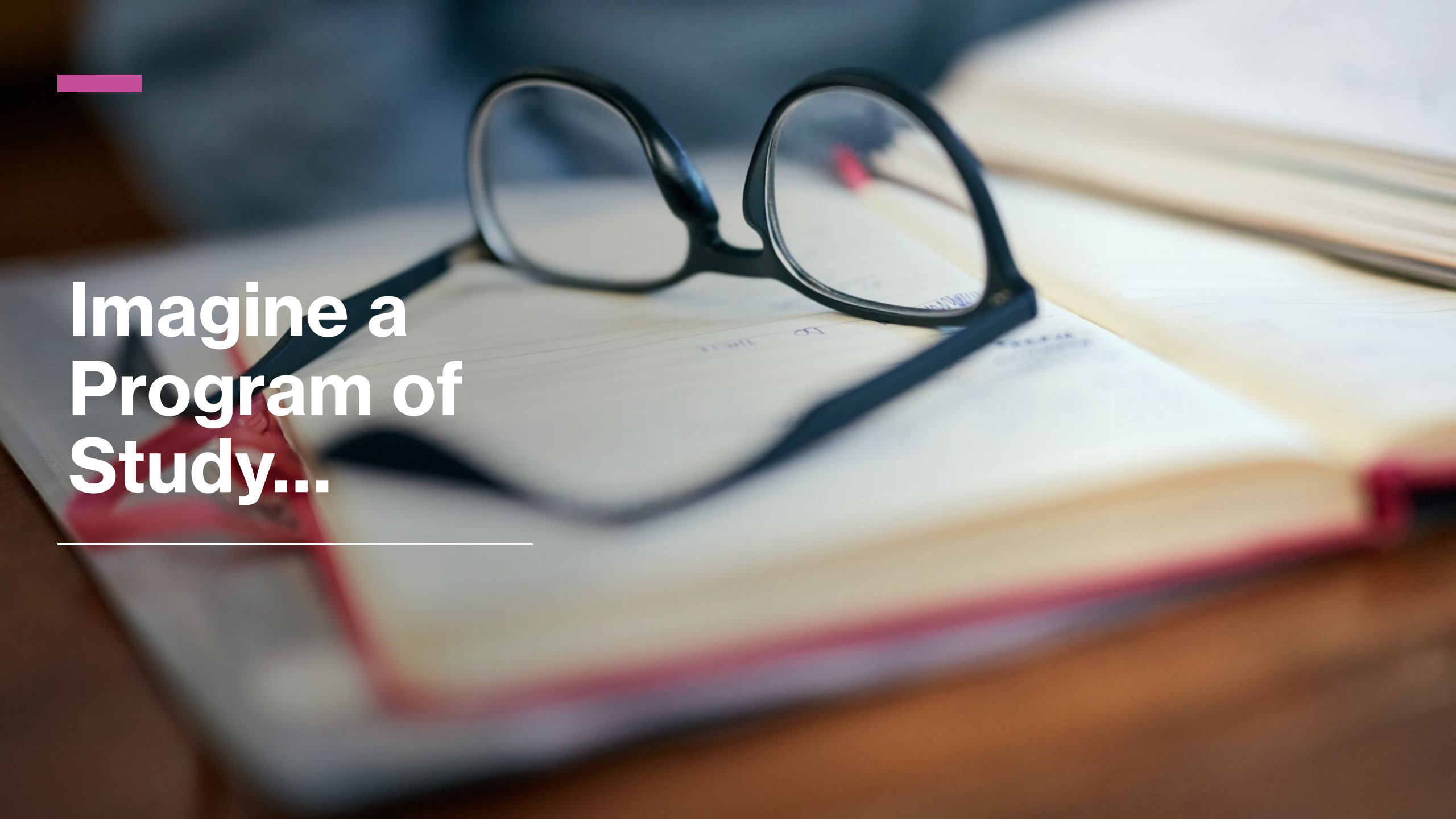
How to Get Going

- Take a risk and do something new and different and do this with colleagues. Collaborate and innovate together.
- Take an existing course | program and “blow it up” and do it differently, working backwards from competency statements through a design process that seeks to maximize student activity and minimize your teaching and maximize your coaching work.
- Make students do more – find knowledge, curate knowledge, organize knowledge around skills – get them to build ownership and agency…
- Leverage technology to help you make stronger personal connections…



Place of Technology

- Tools for collaboration and engagement
- Tools for self-management of learning
- Tools for insight and anticipation
- Tool for anytime | anywhere assessment



Imagine a Program of Study...

Imagine A Program of Study

- Foundational knowledge and skills (methods)
- Followed by projects done in partnership with community organizations, firms, non-profits and other institutions in which students must demonstrate the application of knowledge and skills and the soft skills needed to execute
- Projects get progressively more demanding over the course of study.
- Assessment based on competencies (show me what you can do with video, audio, text, simulation) not mid-terms and end-of-term – available on demand
- Teaching is through a team approach, peer to peer learning and project mentoring / coaching
- AI can be used to simulate real-world co-op experiences, as it is right now at Athabasca..

Example: Agricultural Systems Bioengineering

- Smart agricultural technologies
- Vertical farm management and technology integration
- Smart bioproduction systems
- Circular energy and water systems engineering
- Biobased aquaculture management

Competencies..

- Integrate the components of a productive biosystem, based on sustainability criteria.
- Manage productive biosystems complying with international quality and safety standards.
- Integrate cutting-edge technologies in the area of productive biosystems.
- Evaluate the use of sustainable technologies in productive biosystems to minimize their environmental impact.

Bachelor (Diploma) in Business Intelligence

- Use of analytics to improve productivity and performance
- Change management through evidence-based decision making
- Digital media narrative building
- Solutions and innovation management

Some Suggestions

Not to Do’s, Start to Do’s and Stop Doing Advice

Three Things Not to Do

01

Waiting for Direction from Government "forgiveness is easier to get than permission".

02

Avoiding Risk – "if you haven't failed with an initiative, you are not trying".

03

Going Solo – "we can do more together than we can do alone"

Three Things to Stop Doing

Listing skills, competencies and capabilities as outcomes when you have no intention of assessing them – less really is more.

Mid Term and End of Term Exams – assess continuously and leverage peer-to-peer assessment

Using a textbook as a resource – use OER and readily available materials and get students to build a knowledge resource centre of material that works for them (build their curator skills). “Real world problems do not come with chapter numbers!”

3 Things To Start Doing

01

Check your course and design for fun – what is the fun quota in your course?

02

Find challenges and projects which your students could do that would have a real impact in your community...

03

Start to assess competencies and skills directly and use video, audio or rich tools to do so

The Purpose of All of This..

“The purpose of a university [or college] is to make students safe for ideas, not ideas safe for students” Clark Kerr

They also need to prepare the next generation for work, society and challenges.

Higher education is a key engine of social and economic progress – we need to have real impact

Doing what we have always done slightly more efficiently is no longer sufficient for 21st century learning.

Thank You!

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