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A 2016 LOOK AT THE FUTURE OF ONLINE LEARNING

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We need to stop having a conversation about online learning as if it were new, different, a niche service, or an innovation. Learning with the aid of a digital device – desk top, hand held, mobile, translation device, immersive headset, simulator, music creators and synthesizers – has been with us in a variety of iterations since 1995 and is now so integrated into the fabric of pedagogy as to be part of the repertoire of all good faculty and instructors and part of the value proposition (whether formally or informally) of all post-secondary institutions.

ONLINE LEARNING AS A DISTINCT CATEGORY IS DEAD

Indeed, online learning as a distinctive category is dead. Instead we have available to faculty and instructors and their students enriched pedagogical opportunities capable of producing high levels of student engagement which can, through appropriate design and assessment, lead to strong and sustainable learning outcomes through flexible routes to success.

To make the point, in the United States, it is now the case that more than twice as many now take a class online as live on campus. There are more undergraduates enrolled in an online class than there are graduate students enrolled in all Masters and Ph.D. programs combined. At the current rate of growth, half the undergraduates in the US will have at least one online class on their transcripts by the end of the decade[1], and a great many will complete their entire post-secondary program through online study. The situation in Canada, so far as we can tell, is basically the same. Online learning is part of the standard mix of programs and course offerings across Canada, with very few higher education institutions not offering online learning to some degree.

Blended learning, where students are studying online, in class, in laboratories and sometimes in the workplace, is now the "norm". It would be rare for a student to be able to complete a program of studies without using online education resources, web safari's, social media and other forms of digital resources whether or not these have been assigned by their instructor. To students, especially the recent high school graduates and millennials, online learning resources and services are like electricity or a pencil – they are part of their learning platform.

The implications of this degree of acceptance are that we should ask the question: "what does teaching and learning look like in the future?". Rather than singling out online learning, we would be more productively engaged to ask what our students will be doing and how their instructors will be teaching, facilitating, mentoring and coaching learning. We might also be advised to explore how learning will be assessed and what credit will look like in the future, since all aspects of the learning process and experience will be impacted by the converging fields of technology, finance, markets and demography.

A DIFFERENT UNDERSTANDING OF LEARNING FOR A DIFFERENT FUTURE

These developments, taken together, pose challenges for the management and development of institutions. As colleges, universities,

1 Source: The Digital Revolution in Higher Education Has Already Happened – No One Noticed. Available at https://medium.com/@cshirky/the-digital-revolution-in-higher-education-has-already-happened-no-one-noticed-78ec0fec16c7 (Retrieved November 5th 2015).

polytechnics and private providers explore new markets, reimagine business processes, reinvent their technology platforms to provide a richer, adaptable and simpler experience and build new value propositions, they need also to consider changes in the way in which more flexible routes to learning will be provided to their students. This is the core challenge at this point in this transition in the digital age.

Using a great many sources, including future studies of learning being undertaken at Harvard and by the European Union, the following seem widely accepted statements among learning futurists. The perspective being taken here is global – these are the implications of the developments already occurring around the world. The challenge for you, Ontario college administrative staff, is to convert these global developments locally.

Ontario's 24 colleges offer a wide variety of examples of exemplary combination of technology and ingenuity in improving learning opportunities and success for students:

- Creating virtual reality scenarios and simulations so students can practice difficult, dangerous, or expensive tasks to gain skill and confidence before tackling the real-life situations or equipment.

- Offering students the choice of attending classes face-to-face, synchronously over the web, or elsewhere by accessing the lectures and discussions at their convenience online, which offers not only flexibility for their scheduling but also excellent tools for review and study.

- Developing models of blended learning, in which students learn the essential theory online before attending classes, that emphasize interaction, case studies, hands-on practice and other forms of active learning that involve application of theory.

- Integrating social media into courses so today's "digital natives" learn how the tools they use in daily life can be part of learning, through developing critical judgement and information literacy skills.

- Using mobile access as a core component of language teaching, so students interact with their communities in new ways, learning about the environment and practicing their language skills through personal interactions.

For more information on these, and many other examples of the leadership of Ontario's colleges and innovation in online learning, visit the Pockets of Innovation Series at teachonline.ca.

1. Learning will no longer be defined by time, place or institutional offerings.

Students will expect and secure access to learning anytime, anywhere on their schedule. This will include a growing number of short courses (2-3 weeks in duration) which carry credit, weekend and intense learning as well as longer learning periods (6-8 weeks). Admission to programs and courses will vary from 6-12 times a year to 365 times a year[2], the cycle being driven by demand; not the availability of academic or instructional staff. New forms of support for learning - instant mentoring, online peer networks, coaching from

2 This already occurs in Kentucky – see the description of their flexible, modular, stackable programs at http://teachonline.ca/sites/default/files/tools-trends/downloads/kctcs_.pdf

global learning support structures, artificial intelligence-enabled supports – will meet this demand. Students will drive provision – they will no longer have to "fit in" with the schedules designed by others. This is not quite Uber-U[3], but we will have a variety of routes to completion for the same program: one size will no longer fit all.

2. **Students will increasingly create their own learning agendas ("learning playlists") which reflect their own career, personal and lifelong learning goals.**

The shift from institutional-determined programs to skills and competency-based programs determined by labour market needs or individual student preferences will reduce the reliance on formalized program structures and increase the ability of students to "mix and match" their learning activities against their own learning agenda. Some of these agendas will be set by the professional bodies or organizations they are seeking to join while others will be set by their own authentic learning interests, passions or commitments. This is not to say programs, like engineering or medicine, will not be designed and delivered only the way in which the components of these programs are used and accessed will vary. For example, as medical education in Canada moves from being a time in class plus time served program and becomes a competency-based program[4], the way in which modules and assessments are accessed will change and who will access what will also change. Similar changes will occur in other programs that shift from time to competency and will enable a new value proposition for those seeking to complete their own program of studies.

Just to make the point this is not idle speculation, UNESCO and the X-Prize Foundation are offering a $15 million prize for the team which can develop open source and scalable software to enable children in developing countries to teach themselves basic reading, writing and arithmetic within 18 months[5].

3. **Students will secure their learning outcomes through a combination of formal, informal, self-directed, instructor delivered, in class and online learning. Flexibility will be the hallmark of student expectations.**

One key difference between now and future learning relates to how students acquire knowledge and skills. In the future, routes to knowledge and skill acquisition will become much more varied. Whether they take courses from post-secondary institutions (as a great many will continue to do so) or obtain their knowledge and skills through self-directed learning, informal learning networks, intense workshops, online learning from public or private sources, open educational resources, mentors, paid for coaches or other means will matter less than the fact the knowledge has been acquired and the skills developed. As we move from "time in class" to knowledge, skill and competency-based assessment as the basis for credit recognition, employment and professional development, how a

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3 See Uber-U is Already Here - Powered by Blockchain at http://teachonline.ca/tools-trends/exploring-future-education/uber-u-already-here

4 For more information, see http://www.universityaffairs.ca/news/news-article/medical-education-competency-based/

5 See http://learning.xprize.org/

person gained knowledge and skill is less important than the fact of mastery. Indeed, as is already becoming the case, what someone knows or can do is more important than where and how they acquired these competencies.

To give an example from apprenticeship, the Red Seal program for cooks is increasingly using competency-based assessments for those who have worked in the industry for many years. They use challenge assessments for the skills and capabilities they consider themselves already having, leaving their learning to just those skills they are yet to master. This "gap"-based programming reduces costs to students and the provider, speeds completion and significantly increases completion rates[6]. In this case, less is really more – less instruction, more routes to success.

4. Students will expect personalized learning services and supports for their learning agenda.

Students are paying for more of their post compulsory learning. Whether directly in tuition fees and materials costs or indirectly through time, travel and other costs, personal investment in learning has grown significantly over the last two decades. These investments will not only continue, but will continue to rise. As they do, expectations of service and quality will increase. Students will expect faster, reliable and quality services not just in terms of courseware and coursework, but also in terms of all of the related services – advising, information services, registration services, mentoring, coaching, guiding, knowledge management, and financial services.

This in turn will require a re-focusing of our understanding of quality – shifting from an "ISO9000-like" view of quality assurance, to one based on student engagement and satisfaction and the learning experience[7]. Understanding the quality of peer-to-peer, instructor: peer, assignment feedback, student engagement and other aspects of the learning experience will all form part of this different approach to quality assurance.

5. New mechanisms for meeting personal learning agendas will appear in the market as the "unbundling" of learning continues.

"Unbundling" refers to the separation of the components of the learning and credentialing process. Who designs and develops courses will not be the same as the group who then delivers programs and courses. Who assesses learning and skills may well be different from who delivers learning. Who provides credentials will differ from who assesses learning and skills. Students will be able to "mix and match" the providers of content, mentoring and coaching for mastery and then undertake assessment in dedicated assessment centres so as to secure recognition by professional bodies, credit coordinating agencies, universities or colleges. Given quality need no longer relates to "residency" (where 50% or more of a student's learning must take place at a given institution for that institution to provide degrees, diplomas or certificates) but to competencies and

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6 For more information, see https://bccampus.ca/annualreport-professional-cook-gap-training-pilot-program/

7 See Rethinking Quality in Post-Secondary Education at http://teachonline.ca/rethinking-quality-post-secondary-education

mastery, unbundling is the key to personalized learning routes and differentiation of providers.

Unbundling does not just happen in the course area but also in the service area. There is unbundling of what students want access to online and what they want face-to-face in terms of service support.

Elements of this are already occurring:

- **Course development separate from delivery**. Open educational resources make content freely available for students to use to develop knowledge, skill and competencies. Most large online learning institutions (e.g. Open University UK, Athabasca University, Thompson Rivers University, Western Governors University US, Indira Gandhi University, India) use course development teams which then may not teach the courses they developed.

- **Delivery separate from course development**. The development of adjunct faculty and systems of tutoring support a model in which a standard of "master" course is delivered in multiple sites by qualified individuals who did not develop that course. This is already the way in which many mega-universities operate and how distance learning moved to scale. Other examples of this use of short-term contracted staff or companies to deliver learning can be found around the world.

- **Assessment separate from delivery**. Some professions (e.g. nursing[8]) and other occupations (e.g. Power Engineers in the UK[9]) already undertake assessment independent of the educational provider and assessment processes of institutions. This certification process is now being accelerated by the development of micro-credentials, badges and other forms of skill and competency recognition. Skills assessment centres in Australia cover a range of different professions and trades. Western Governors University is based on this construct of outcomes-based assessment of learning – it is how they award degrees[10] and this is now also the way in which the University of Wisconsin and others are offering their "flex" route to a degree[11]. The use of MOOCs in Malaysia to replace required courses in its public universities[12] provides another example of assessment being separated from delivery.

- **Certification separate from assessment**. Some qualifications use credit coordination as the basis for the award of a degree or diploma. Athabasca's Bachelor of General Studies[13] is one such degree, but other similar prior learning and competency-based qualifications are available around the world. There are emerging collaborative programs between a variety of institutions – up to five collaborating partners – where the student completes their

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8   As of 2015, the 10 provincial/territorial RN regulators chose the National Council of State Boards of Nursing (NCSBN) as the provider of the Canadian RN entry-to-practice exam.

9   See https://www.engc.org.uk/engcdocuments/internet/website/UK-SPEC%20third%20edition%20(1).pdf

10 For a description of the work of WGU, see http://teachonline.ca/sites/default/files/contactNorth/files/pdf/publications/wgu.pdf

11 See description at http://flex.wisconsin.edu/

12 See http://www.themalaymailonline.com/malaysia/article/malaysia-first-to-implement-open-online-courses-for-public-universities

13 For details of this degree see http://calendar.athabascau.ca/undergrad/current/page03_07.php

competency journey and then chooses which institution is the primary provider of their qualification.

6. **"Courses" will be less important than modules, mentoring, coaching, counselling, advising and assessment. Learning materials will be increasingly available on a range of platforms. Navigating this learning and linking learning to learning agendas is the "new work" for learning in the future.**

The implications of unbundling are that the real focus for the future is on providing opportunities for the assessment of learning and guiding students towards their assessments: designing new, powerful and rich assessment is where new and substantial investment need now to be made. This is aided by significant developments in our ability to assess competencies and skills, supported by immersive technologies, simulation, machine intelligence and adaptive assessment. Hill and Barber capture this in their important 2014 paper [Preparing for a Renaissance in Assessment](), and we can see employers and professional bodies moving quickly to create rich assessments offered frequently so students can be assessed "just in time" and on the student's timetable. Several moves have been made in this direction, with the [Valid-8]() assessment toolkit being a leader in the emerging market for rich assessment for trades, professions and regulatory bodies.

To support this focus on assessment, students will turn increasingly to coaches and guides to help them navigate their learning journey. While some instruction may be necessary for some components of learning, it will be the case that many of the learning needs associated with needed competencies can be acquired through a range of different routes: navigating these requires guidance, coaching and other kinds of expertise. Not all students will navigate their learning journey well.

7. **Geographic boundaries for learning materials, student support, assessment and credentialing will gradually fade for many students.**

Just as help centres for technology companies can be located anywhere in the world, the globalization of professions, employability skills and knowledge will lead to a blurring of geographic boundaries for access to learning, support and assessment. As trade agreements, such as the Canada and European Union Comprehensive Economic and Trade Agreement (CETA) and Trans Pacific Partnership Agreement (TTP), specify reciprocity of professional credentials, assessments completed in one jurisdiction will increasingly be recognized in another. Indeed, thirty-two countries of the Commonwealth entered into a Transnational Qualifications Framework agreement which does just this for these nations. Similar developments are occurring in the European Union. Student mobility will be a central component of learning in the future. This is why UNESCO is moving towards an international convention which seeks to enable global recognition of higher education credentials[14].

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14 For more information, see http://www.unesco.org/new/en/education/themes/strengthening-education-systems/higher-education/single-view/news/first_step_towards_a_global_conven-tion_on_the_recognition_of_higher_education_qualifications/#.V11-oeYrJUN

8. **Diverse and new forms of credentials will appear which reflect the varied needs of students, employers, social agencies, innovation organizations and entrepreneurs. While degrees, diplomas and certificates will still "matter", they will no longer be sufficient indicators of skills and competencies.**

Many significant employers now look less at what the credential is and look more carefully at what an individual can actually do. To help them assess this, more and more employers are looking to work-based learning, badges, evidence from student portfolios of projects completed and other forms of evidence of knowledge, skills and competency. A degree says something about commitment and perseverance and may represent mastery of knowledge, but what can the degree holder actually do?

In the UK, answering this question has led to a new kind of document known as a Higher Education Achievement Report[15] which documents more of what the student can actually do than a traditional transcript. Similar developments are occurring in the US with the development of a Postsecondary Achievement Report. Both of these developments are in their infancy. Also in development are what is known as "nano-credentials" or "micro-credentials". These credentials document hard and soft skills acquired by the student during their studies. Georgia Institute of Technology, Northwestern University, the University of Washington, University of California's Davis, Irvine and Los Angeles campuses, and the University of Wisconsin Extension are all developing such credentials.

Digital badging – recognizing competencies and skills based on agreed rubrics – is also emerging as a way of recording student mastery. A number of MOOC providers are also offering credentials. Udacity, for example, has over 10,000 individuals enrolled in "nano-degrees", designed in partnership with major employers. Coursera is offering "verified certificates" (verified by partner academic institutions).

Alternative credentials will likely not quickly replace the traditional degree or diploma, but they offer another option for professionals and students alike, and may eventually become more integrated within formal programs. For a time, these various credentials will present a confusing landscape for employers and students, but some of these will emerge as leading the "pack" of credentials as "must have's" for employability.

9. **Learning will be continuous throughout the life of an individual. Continuing professional development, skills upgrading, un-learning and personal development will drive the lifelong learning agenda.**

Given the rate at which knowledge is changing and the speed at which new skills and competencies are required to take account of social, technological and scientific advances, learning will become increasingly a life-long requirement for all. This is not just true for the student, but also for all of the staff at colleges and administrators are expected to model and lead.

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15 For more information, see http://www.hear.ac.uk/

But there is also another force at work. Changing demographics in Canada will lead to a very large cohort of seniors with significant disposable income, some of whom will seek to develop new knowledge and skills relevant to their interests and personal development. In other parts of the world, the University of the Third Age provides a collaborative peer-to-peer learning network for time-shared learning. Some universities and colleges provide low cost or free access to courses for seniors. Seniors and the young retired are enrolling in large numbers in courses in photography, culinary arts, art, dance, theatre, music and kinesiology. There is a sizeable market for non-credit, and short course-based learning for this market.

Also emerging for informal learning are time share-based learning schemes. A report for the European Commission (Ala-Mutka, 2010[16]) makes clear that, given the rise of communities of interest and practice and the emergence of time-shared learning networks and other informal learning networks, a great deal of meaningful learning by highly motivated students and coaches is a significant component of life-long learning. Indeed, the author notes, all educational policy objectives adopted by the EU Council of Education Ministers secure part of their response from such networks. In the work of the Commonwealth of Learning in farming and technical and vocational education[17], such informal networks are crucial in securing significant gains in learning outcomes and social impacts.

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16 Ala-Mutka, K. (2010) *Learning in Online Informal Networks and Communities*. Luxembourg: Office for Official Publications of the European Communities (mimeo). Available at http://ftp.jrc.es/EURdoc/JRC56310.pdf (Retrieved December 17th, 2015).

17 See https://www.col.org/programmes/lifelong-learning-for-farmers and also https://www.col.org/programmes/technical-and-vocational-skills-development