Canadian Accredited Independent Schools (CAIS)

Online Learning at Canadian Universities

Environmental Scan

May 2015

Introduction

Canadian Accredited Independent Schools (CAIS) commissioned Academica Group to write a brief summary of trends related to online learning in postsecondary institutions. The purpose of the report is to provide insight into the online learning landscape to assist member schools in ensuring that their students are prepared for the types and level of online learning they will encounter during their university education.

To frame the report, four research questions were drafted by CAIS and Academica Group. The primary focus was to be trends at Canadian U15 universities. The research questions addressed are:

1. Should high school (HS) students of today expect to take an online course during their future university studies?
2. How much blended learning can HS students expect to experience at a Canadian university?
3. What broad trends related to online learning should HS students consider as they think about choosing a university?
4. What is happening in the Canadian MOOC landscape and in relation to offerings similar to the Minerva education model?

Question #1

Should high school students of today expect to take an online course during their future university studies?

Online learning is growing worldwide and Canada's public institutions have collaborated and responded accordingly. Organizations such as Contact North (Ontario), eCampus Alberta (Alberta), BCcampus (British Columbia), Campus Manitoba (Manitoba), and Canadian Virtual University (CVU) have partnered with institutions in order to provide more online options for students.[1] While many partners are at the college level, some of the country's top institutions are also named as members, including the University of Alberta and the University of Calgary (eCampus Alberta); Queen's University, the University of Ottawa, McMaster University, the University of Toronto, the University of Waterloo, and Western University (Contact North); and the University of Manitoba (CVU).

There has also been recent government intervention to increase online university offerings. In 2014, the Ministry of Training, Colleges and Universities (MTCU) announced funding for the Ontario Online initiative, aimed at enhancing flexibility and access to postsecondary education for students across Ontario. This funding was granted to Ontario institutions to help with the development of online courses ready for launch in the 2015–16 academic year.[2] Institutions that received funding for online learning development include Brock, Carleton, Guelph, Laurier, McMaster, OCADU, Ottawa, Queen's, Toronto, Waterloo, Western and York.[3]

Each of Canada's top universities has different levels of online learning available to undergraduate students. Students can expect to have online interactions through the institution's Learning Management System (LMS) for things such as course registration and information, class forums, quizzes, videos, peer evaluation, and assignment posting and submission. Institutional LMSs are used as hubs for students to access all university and class information and are used in many courses, whether classes are offered in-class, online, or a blended learning format. One-off online courses are often offered through the institution's continuing or extended education departments, but are sometimes available to full-time students.

U15 universities tend to be more traditional, and are generally slower to adopt online courses. Many U15 institutions boast having 100 or more online courses, but these are often offered sporadically and only translate to a few offerings in each program area. A scan of university course catalogs and offerings for Fall 2015 showed that the University of Manitoba is set to offer the highest number of online courses of the U15 universities in Canada, followed by the University of Toronto, Western University, and the

[1] http://www.cvu-uvc.ca/Online%20University%20Education%20%20jan17%202012.pdf
[2] http://news.ontario.ca/tcu/en/2014/01/province-improving-online-learning.html
[3] http://cou.on.ca/policy-advocacy/online

University of British Columbia. Institutions that offer fully online undergraduate degree programs include University of Manitoba, the University of Waterloo, and Dalhousie University.[4] Programs offered at the University of Manitoba are primarily three-year Bachelor of Arts degree programs with majors and minors offered in the humanities, some in the social sciences, and a few in computer science or mathematics.[5] A Bachelor of Arts in Psychology is also offered in both three- and four-year degree programs. Fully online undergraduate degrees offered at the University of Waterloo include a Bachelor of Arts with a major in Liberal Studies, English, French Studies, Philosophy, or Social Development Studies, or a Bachelor of Science with a major in Biology, Chemistry, Earth Sciences, Physics, or Science.[6] Dalhousie University offers a fully online Bachelor of Social Work.[7] While the number of students studying online has increased year after year, online learning continues to be particularly popular among mature students seeking part-time studies, rather than traditional postsecondary-aged full-time students. [8]

In conclusion, while most of Canada's U15 universities do not offer full programs online, they do offer a number of individual online courses. Therefore, high school students of today can expect to have online courses available to them during their university studies, though whether they choose to participate in a fully online course will be up to them. While hype about massive open online courses (MOOCs) led many to predict the demise of the traditional campus and in-person learning experiences, most have now tempered this view, and see online learning technologies as having an impact on the traditional university experience but not replacing it.

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[4] http://www.cvu-uvc.ca/Online%20University%20Education%20%20jan17%202012.pdf
[5] Program areas include Canadian Studies, Criminology, English, Geography, History, Philosophy, Family Social Science, Sociology, Anthropology, Political Studies, Geological Studies, Management, and Gender Studies.
[6] http://cel.uwaterloo.ca/undergraduate.html
[7] http://www.dal.ca/academics/online_learning.html
[8] http://www.heqco.ca/SiteCollectionDocuments/Large%20First%20Year%20Course%20Redesign%20ENG.pdf

Question #2

How much blended learning should high school students expect to experience at a Canadian university?

Blended learning combines face-to-face and online modalities of course delivery. It can take many forms, including simple incorporation of technology in the classroom or as part of assignments, to "flipped" classrooms that essentially re-structure postsecondary course delivery by providing students with video lectures prior to the class and using class time for engaging activities and discussion groups.[9] Blended learning is increasing in popularity across Canadian universities, not only because of its benefits for student and instructor engagement, but also for its ability to deliver quality programming more efficiently and as a means of meeting students' increasingly diverse needs.[10] As enrolment in common first- and second-year courses grows, resources become scarce, and blended learning is used to increase the effectiveness of the student learning experience.[11]

An annual study conducted by the Educause Center for Analysis and Research (*Study of Undergraduate Students and Information Technology*) has shown that blended learning is often preferred by students and has positive effects on learning outcomes and student engagement.[12] Students clearly still have a desire for face-to-face interaction with teachers and other students, but enjoy the online and technological aspects for convenience, flexibility, and engagement. In 2013, 76% of Canadian students had taken a blended course, up 5% from 2012. In the updated 2014 report, 72% (US and Canadian) stated they learned best in courses with some online components as opposed to fully in-class or fully online courses.[13] Another study has shown that blended learning initiatives at Canadian universities have improved teaching and learning, created more flexibility for students, and increased student satisfaction and performance.[14] Some innovative blended learning practices that exist at Canada's U15 institutions are briefly summarized below:

- Queen's University's Faculty of Arts and Science has received attention for its Blended Learning Initiative (BLI).[15] Initially launched in 2011 as a response to oversubscribed first-year courses (Psychology, Human Geography), the blended learning initiative is continuing to gain traction.

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[9] https://facultycommons.macewan.ca/wp-content/uploads/REPORT-ON-BLENDED-LEARNING-FINAL1.pdf
[10] Ibid.
[11] http://contactnorth.ca/trends-directions/how-make-most-blended-learning
[12] http://contactnorth.ca/trends-directions/key-concepts-online-learning/lopen-education-resources-oer-0
http://www.heqco.ca/SiteCollectionDocuments/Large%20First%20Year%20Course%20Redesign%20ENG.pdf
http://net.educause.edu/ir/library/pdf/ERS1302/ERS1302.pdf
[13] https://net.educause.edu/ir/library/pdf/ss14/ERS1406.pdf
[14] https://facultycommons.macewan.ca/wp-content/uploads/REPORT-ON-BLENDED-LEARNING-FINAL1.pdfs
[15] http://contactnorth.ca/pockets-innovation/engaging-first-year-students

There are currently 10 high-enrolment first- and second-year courses at Queen's, with five more to come in the 2015 academic year. Since the redesign of these courses, enrolment increased by 10-20%.[16] Three classrooms on campus have been altered in order to be conducive to active, blended learning with technological integration.[17]

- McMaster University in 2007 introduced its IntroPsych Blended Learning Model that combined online modules, in-class lectures, and group tutorials.[18]
- From 2004 to 2008, the University of Calgary provided funding to instructors who wanted to redesign their course for blended delivery. The redesigned courses received positive feedback from students, though a lack of funding led the program to be discontinued. The University now incorporates online technology into its teaching and learning model through the use of blogs, wikis, and synchronous online sessions (video-conferencing).[19]
- The University of Waterloo supports blended learning through its Centre for Teaching Excellence (CTE) by providing resources for instructors on how to leverage blended modes of teaching. Blended learning courses at Waterloo are typically delivered fully online with a one-hour in-person tutorial session each week. Data from Waterloo shows that the number of courses that are blended is steadily increasing.[20]
- Between 2000 and 2010, the University of Saskatchewan received provincial funding for Technology Enhanced Learning. During this time, most investments went towards distance education, but some funding was allocated to the development of blended courses and infrastructure to support this learning style. The University has also developed an E-Learning Task Force that makes strategic recommendations, one being additional investment by the institution into blended learning over the coming years.[21]
- The University of Manitoba focuses strongly on online learning. In 2011, the Department of Extended Education made a significant investment into the development of blended courses to be offered in the summer session. Funding was also allocated for faculty wishing to develop blended courses. Moreover, the University of Manitoba has transformed its introductory psychology course into a blended learning format.[22]

Innovative pilot projects have led to promising practices and outcomes in blended learning at institutions across Canada. The benefits of this mode of teaching and learning are clear, but it does not come without challenges. Barriers identified in recent reports include resistance from faculty; reluctance on the part of students who are not ready to transition from a passive to active student role; insufficient technical support; and a lack of institution-wide policies or strategic plans for blended learning.[23]

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[16] http://contactnorth.ca/pockets-innovation/strategic-advancement-moving-ahead-with-blended-learning

[17] http://www.queensu.ca/artsci/staff-and-faculty/initiatives/blended-learning

[18] http://contactnorth.ca/pockets-innovation/blended-learning-introductory-psychology

[19] https://facultycommons.macewan.ca/wp-content/uploads/REPORT-ON-BLENDED-LEARNING-FINAL1.pdf

[20] Ibid.

[21] Ibid.

[22] Ibid.

[23] Ibid

Postsecondary institutions are only just starting to build blended learning course options into their programming.[24] While faculty are increasingly incorporating technology in the classroom as a means of communication and to provide supplementary learning materials, there are still only a few institutions that have fully adopted blended classrooms as a mode of teaching.[25] Students seem to prefer blended modalities so they can have the best of both worlds: traditional interaction with instructors and classmates and ubiquitous access to course materials. Due to research showing blended learning as an effective and preferred mode of learning for students, it is likely that more universities will begin offering this option to students.

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[24] Ibid.
http://contactnorth.ca/trends-directions/how-make-most-blended-learning
[25] Ibid.
http://net.educause.edu/ir/library/pdf/ERS1302/ERS1302.pdf

Question #3

What broad trends related to online learning should high school students consider as they think about choosing a university?

Education and technology trend-watchers (bloggers, magazines, associations) have identified several technology-intensive trends in online learning for 2015 and the following years. These include big data; gamification; personalized learning; augmented or adaptive learning; mobile learning; focus on return-on-investment; application programming interfaces; and cloud-based learning management systems.[26]

- The effects of big data on e-learning comes in the form of statistics. Big data is said to be able to improve e-learning by enhancing the understanding of user statistics such as completion time, drop-out point, drop-out rate, etc. Data can also track the materials that are more engaging for users, generate more personalized courses based on user data, and perhaps shed some light on strategies for return on investment models.
- Gamification, while not a new concept, is being applied more in the educational realm. The use of games and technology has been shown to improve student engagement, particularly because gamification involves students performing actions themselves as opposed to passively acquiring information. Fun competition between students online has also been proven to enhance motivation.[27]
- Linked to big data, personalized learning can be developed by monitoring the online user experience and altering material in order to match success or progress levels. Learning strategies, curriculum, and pace can be modified to fit individual students' needs.[28]
- Similar to personalized learning, augmented learning is "on-demand" learning in which the environment adjusts to the user. This is typically used in advanced video games or virtual reality. One example of this is location-based functionalities where content is generated based on the user's location in order to provide context for the user and to demonstrate the application of course concepts in real-life situations.[29]
- Mobile learning incorporates connected devices into teaching and learning, and is capable of improving overall access to materials and further customization for the student. Students can learn at their own pace with access to content regardless of time or location.

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[26] http://www.edtechmagazine.com/higher/article/2014/12/10-online-learning-trends-watch-2015-infographic-0
http://www.talentlms.com/blog/elearning-trends-follow-2015-infographic/
http://www.bsminfo.com/doc/from-gamification-to-moocs-cloud-learning-increasingly-tech-based-0001
[27] https://onlinelearninginsights.wordpress.com/2014/12/29/three-trends-that-will-influence-learning-and-teaching-in-2015/
[28] http://elearningindustry.com/rise-personalized-learning
[29] http://www.edtechmagazine.com/higher/article/2014/12/10-online-learning-trends-watch-2015-infographic-0

- Return on investment is particularly important given the high upfront costs of developing online education models. Institutions will begin to examine this more, weighing the benefits (savings in travel, training, and logistics) versus the costs (content design, implementation, technology and infrastructure).
- Application programming interfaces can be used in online learning environments in order to automatically generate reminders or notifications regarding online courses or material.
- Learning management systems (LMS) are essential for online learning. It is predicted that use of LMS by institutions will continue to grow, particularly cloud-based LMS interfaces. Cloud-based LMS saw growth of over 50% in North America in 2014.[30]

While these trends have been identified as upcoming developments in online education, recent reports have shown that many students are slow to embrace learning technologies, and that many students do not expect or desire to use mobile devices as part of their learning experience, or to rely solely on online materials as a learning mode.[31] However, looking several years into the future, postsecondary students will need to prepare for changes when it comes to online learning and should be ready to make a shift in how technology is incorporated into their classrooms.

Another trend to consider is the increase of online graduate degree offerings. This increase in graduate level offerings can be attributed to the fact that many prospective graduate students have already entered the workforce and are looking to upgrade their skills.[32] Current high school students can expect that more fully online graduate degrees will be available to them following their undergraduate careers. At this time, seven Canadian institutions offer a variety of online master's degrees, while three offer online doctorate degrees through Canadian Virtual University.[33] Key players in the online graduate degrees in Canada are the University of Waterloo, Memorial University, the University of Manitoba, Thompson Rivers University, Laurentian University, and Concordia University.[34] While these programs are offered fully online, they often require short residencies, demonstrating again the effectiveness of a blended approach.

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[30] http://elearningindustry.com/list-corporate-learning-management-systems
[31] https://net.educause.edu/ir/library/pdf/ss14/ERS1406.pdf
[32] http://www.universityaffairs.ca/features/feature-article/why-more-universities-are-offering-online-graduate-degrees/
[33] http://www.cvu-uvc.ca/cgi-bin/cvu/cvuinfo.cgi?qn=level&lang=en#X6
[34] http://www.universityaffairs.ca/features/feature-article/why-more-universities-are-offering-online-graduate-degrees/

Question #4

What is happening in the Canadian MOOC landscape and in relation to offerings similar to the Minerva education model?

While institutions try to navigate how to best leverage MOOCs, students struggle with whether the credentials will push them ahead or set them back. Current research shows that undergraduate students are still only experimenting with MOOCs and that few find the credential earned to be legitimate enough to be used on a resume.[35]

Among Canada's U15 universities, seven currently offer MOOCs courses: the University of Alberta; the University of British Columbia; Dalhousie University; McGill University; McMaster University; the University of Saskatchewan; and the University of Toronto. These institutions offer various MOOCs through Coursera, edX and Canvas.net.

Recent data from MOOC users sheds light on typical course registrants. MOOCs are typically taken by individuals who already have some form of postsecondary education. According to a survey conducted with Coursera users, 30% had a four-year undergraduate degree and 34% had a master's degree. The median age of MOOCs users was 35, and the majority (73%) were working full-time. The average completion rate of a MOOC was 7%.[36] Thus, MOOCs are changing the way individuals can access postsecondary education, but not yet in a way that drastically affects the traditional student. The true benefits of MOOCs are their ability to widen the postsecondary market, providing those already in the workforce with skill upgrades and professional development, and providing those who might not be able to afford a traditional education with access to postsecondary education.[37] It is clear that while growing in popularity and certainly set to be transformative of postsecondary education, MOOCs are still only in an early stage of development and have some challenges to overcome, including low completion rates, inadequate technology and support, a lack of an accreditation system, and no clear institutional strategies for profiting from the free courses offered.[38]

CAIS expressed particular interest in innovative educational systems such as the Minerva learning model. Minerva Schools at KGI is an elite program that caters to highly engaged, academically inclined students using active learning models and unique online technologies as its main draws. Students begin with an interdisciplinary foundation year in San Francisco, followed by subsequent years in a number of

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[35] http://contactnorth.ca/trends-directions/key-concepts-online-learning/lopen-education-resources-oer-0
[36] http://ideas.ted.com/moocs-by-the-numbers-where-are-we-now/
[37] http://www.wsj.com/articles/SB10001424052702303825604579515521328500810
[38] http://www.universityaffairs.ca/features/feature-article/all-about-moocs/

different cities where campuses have yet to be established (Berlin, Buenos Aires, Hong Kong, Mumbai, London and New York). Classes of no more than 20 students are conducted online synchronously, allowing higher levels of engagement and evaluation than traditional learning models.[39] The inaugural class entered their first year in 2014, so it is too early to analyze the learning model's successes and challenges. The model, however, is anticipated to revolutionize higher education by incorporating technology in a more innovative way than traditional modes of postsecondary education. Whether the school itself fails or succeeds, the very fact that this new learning model exists could lead to more of these types of non-traditional, hybrid institutions offering further options for future students.[40]

As far as Minerva-like learning models offered in Canada, there simply is not one; however, there are Canadian institutions that have developed innovative teaching and learning practices aimed at increasing student engagement and responding to diverse needs of the student population. While they are not U15 institutions and online learning is not necessarily integral to all of the models, these practices are worth noting to demonstrate the ways in which Canadian institutions are beginning to provide alternative programming for students. Active learning is the key theme running through all of these innovations, and while not necessary to each one, online learning and ubiquitous access to information is a significant contributor to the shifts in postsecondary education that have led to these innovative developments.[41]

- Quest University is the institution that stands out as most innovative in terms of teaching and learning practices. This liberal arts college offers only one degree – Bachelor of Arts and Science – and students take foundational courses for their first two years prior to specializing. Quest's Block Method allows students to take one course at a time in an intensive learning environment, allowing them to stay focused on the course topics. Technologies such as Skype and DropBox file sharing are mandatory in this setting as the idea is that students are constantly connected and engaged in learning materials.[42]

- Similar to Quest's Block Method, Okanagan College recently launched a multi-disciplinary program called ArtsX that is meant to expand postsecondary options. ArtsX is limited to a cohort of 30 students, with students taking four courses per semester that are only open to ArtsX students with room for one additional elective. Courses are multidisciplinary, alternative grading mechanisms are used, and while no component is online, students are responsible for self-directed learning by ensuring active engagement with the material.[43]

- A professor at Wilfrid Laurier University developed a course that connects students in Waterloo with students in Istanbul. The course was in Muslim Studies and incorporates active learning

[39] https://minerva.kgi.edu/overview/

[40] http://www.businessinsider.com/minerva-schools-of-kgi-2014-1

http://www.theatlantic.com/features/archive/2014/08/the-future-of-college/375071/

[41] http://contactnorth.ca/trends-directions/evolving-pedagogy-0/new-pedagogy-emergingand-online-learning-key-contributing

[42] http://www.universityaffairs.ca/news/news-article/unbc-pilot-project-experiments-with-block-teaching/

[43] http://www.okanagan.bc.ca/Programs/Areas_of_Study/arts/artsx/ArtsXProgram.html

http://academica.ca/top-ten/okanagan-offers-avant-garde-liberal-arts-program

through the use of online communication tools. Students were engaged in group discussions and interactive projects via videoconference and social media.[44]

- Ryerson's Zone Learning concept began with its Digital Media Zone (DMZ) developed in 2009 as a unique learning environment/incubator where students could gather to share and develop their ideas for digital products or services. With a heavy focus on entrepreneurship and commercialization of student ideas, the DMZ grew into the concept of Zone Learning where students take a single project-based course that allows them to connect with other students and companies in their area of interest. Zones include fashion, design, social ventures, legal innovation, and energy.[45]

The innovations explored above challenge the way government, institutions, administration, faculty, and students think about traditional postsecondary learning models. While some faculty and institutions are ahead of the curve, these teaching and learning innovations are still in the early stages of development and adoption. How they will impact the greater postsecondary environment remains to be seen.

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[44] http://contactnorth.ca/pockets-innovation/active-learning-intercultural-online-environment-wilfrid-laurier-university?utm_content=bufferbafe2&utm_medium=social&utm_source=twitter.com&utm_campaign=buffer
[45] http://www.ryerson.ca/zonelearning/FAQ/index.html

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