Toward an Online Learning Research Agenda for Ontario

Themes, Opportunities, and Challenges

Contact North | Contact Nord
Ontario's Distance Education & Training Network
Le réseau d'éducation et de formation à distance de l'Ontario

Toward an Online Learning Research Agenda for Ontario

Faculty at Ontario's 24 public colleges and 20 public universities continually strive to improve the online learning experience for their students through research and evaluation. As online and hybrid learning are increasingly integrated into post-secondary education, a substantive, clearly defined, and cooperative research agenda for online learning can enhance quality, increase collaboration and sharing, and position Ontario educators as leading thinkers and innovators in the expanding field.

This document is a preliminary step towards the development and implementation of such an agenda. It begins by outlining some of the sources that already exist for collaborative research in online learning and provides a brief overview of current research directions in Ontario. Some conclusions of national and international overviews of online learning research provide a cautionary tale, as well as suggesting a number of themes and directions for future attention.

The core of this discussion presents some of the research themes and opportunities that could be included in a research agenda – outlining research issues that would benefit all post-secondary institutions. Finally, some questions for readers solicit input to advance the development of an Ontario online learning research agenda.

Sources of Research in Online Learning

Collaborative and institution-wide research has been taking place on effective online teaching and applications of technologies in Ontario and across Canada.

In Ontario, for example, the Institute for Research on Learning Technologies (IRLT) at York University and the Educational Informatics Lab at the University of Ontario Institute of Technology faculty undertake cross-disciplinary and collaborative research. At the Ontario Institute for Studies in Education (OISE) of the University of Toronto, studies focus on the effectiveness of technological innovations for teaching and learning. The Higher Education Quality Council of Ontario has sponsored several collaborative studies on online learning. Much of this research is available on the websites.

The Canadian Institute of Distance Education Research - CIDER - is a research initiative coordinated from the Centre for Distance Education at Athabasca University in Alberta. CIDER is a self-managed, online research community, exploring the strategic use of technology, issues of access, and other factors that influence distance education in Canada.

The Killick Centre for E-Learning Research at Memorial University in Newfoundland and Labrador fosters innovative research, training, and generation of new knowledge in the area of e-learning in the field of education, particularly as it relates to rural, isolated areas.

Much of the research on online learning in Ontario, and elsewhere in Canada, takes place

in institutions, whether by researchers, faculty, instructional designers, or administrators. They often work as sole researchers or in small teams, sometimes with partners from other institutions. In a few cases, the research has been done in collaboration with private industry.

A Snapshot of Current Research in Ontario

Contact North | Contact Nord has begun to assemble a database of researchers in online learning at public colleges and universities in Ontario, including their particular research interests. We want to expand this list and hope this process will bring to light others engaged in research in this area.

Among the researchers in the database in its early stages, there was a wide range of topics, with most researchers listing three or four areas of interest. Among the main areas of interest were pedagogical or learning issues, new or emerging technologies, student engagement/ personalized learning, with topics such as simulations/gaming, blended learning, mobile learning, institutional strategies, interface design/Human Computer Interface, assessment, and methods of professional development also attracting multiple researchers.

The database will be posted on the Ontario Online Learning Portal in late Fall 2012.

Based on experience in research in the areas of science, health, or social sciences, much could be achieved by bringing together Ontario researchers interested in research in online learning to work towards a common agenda.

The Current State of Research in Online Learning

There have been several comprehensive reviews of the state of research in online learning has been undertaken and, despite differences in focus, timing and location, these studies have come up with consistently similar conclusions.

Abrami and colleagues (2006) conducted an extensive review of the Canadian research literature on e-learning reviewing 1,146 papers and articles on e-learning, Bates (2006) conducted a survey of literature on e-learning research internationally between 2003-2005 that covered more than 2,000 reviewed papers and 28 books/major reports/theses focused on post-secondary education and vocational training. Zawacki-Richter, O., Bäcker, E. and Vogt, S. (2009) did a review of distance education research covering the period 2000 to 2008. Michael G. Moore (2004), the editor of the American Journal of Distance Education, published an editorial on the quality (or lack of it) of much of the research submitted for publication in the journal. Buell and Anderson (2006) proposed a Pan-Canadian Research Agenda for e-Learning. It must be noted that the latest study in this list was published in 2009, and the two Canadian ones in 2006. Many of the latest trends and technologies in the quickly evolving world of online learning would not have been addressed in these studies.

Below is a summary of their conclusions:

- Overall, research in online learning had not been a Canadian priority;

- The majority of studies were on fully online learning or on technology as classroom aids; there was almost no research on hybrid courses or hybrid design;

- The research focus was on a narrow range of issues:
    - Completion rates (and factors influencing them);
    - Constructivist learning/computer-mediated communication;
    - Learning objects/open educational resources;
    - Technology standards;
    - The use of a specific technology; and
    - University teaching (as distinct from colleges or vocational training).

- The following areas were, in general, rarely researched:
    - Performance indicators for online learning;
    - Evaluation of government or institutional strategies for online learning;
    - Cost-benefit analyses of online learning business models;
    - Effectiveness of online learning quality assurance processes;
    - Types of learners who benefit most from different kinds of online learning;
    - The effectiveness of new models of course development or design
    - Inter-cultural issues in global online learning;
    - Policy and strategic issues.

- There were few large research programs in online learning: the predominant model was research being done by individuals or small teams;

- Research was compartmentalized into separate worlds: educators or computer scientists; on-campus instructors or distance educators; even whole journals reinforced these divisions by their focus;

- There was a lack of quantitative studies, large samples, longitudinal research, and convincing results;

- Pedagogy and design were included in about 30% of studies; and

- The biggest unanswered question for policy makers and practitioners concerned whether online learning is worth the cost.

As Abrami et al. (2006) commented: "It is a shame to attempt innovation and not be able to tell why it works or doesn't work. In this sense, the finest laboratories for e-learning research are the institutions in which it is being applied."

Opportunities for Online Learning Research in Ontario

During the March/April 2011 engagement process with Ontario's post-secondary education and training sector, Maxim Jean-Louis, Special Advisor to the Minister of Training, Colleges and Universities identified key research themes and opportunities which could be developed to support decisions about online learning at the college, university, and policy level in Ontario. As online learning changes rapidly, with new possibilities added continuously, several new research topics have also arisen.

The key research themes and opportunities include:

1. Significantly improving the level of student engagement in online learning courses.

   This is a critical issue - how can student engagement in online learning courses and programs be increased and does doing so increase completion rates, knowledge retention and student satisfaction? Accompanying this is the need for evaluation of courses, resources, and strategies during the development process and on an ongoing basis to ensure the highest levels of student engagement.

2. Moving the practice of instructional design from content and skills mastery into higher level skills and competencies.

   A large number of employees in Canada function at literacy and other skill levels below those required to productively perform their tasks. These low skill levels have negative consequences for the performance of companies and organizations in Ontario, as well as for job satisfaction, personal lives, and communities. Using new curriculum design methods for online learning to advance communication, problem-solving and other essential skills and ensure that all post-secondary graduates have high levels of literacy and other workplace and personal skills would be a major contribution to the Ontario population and economy[1].

   Across the online curriculum, what can be done to enable the acquisition of advanced literacy and other skills?

1 See http://www.dataangel.ca/en/cost-benefit-jan26.pdf for a cost-benefit analysis.

3. Developing a community of practice to enable and accelerate innovation in mobile learning.

   If we accept the premise that mobile or m-learning will be a major component of any online learning strategy for the coming decade, then the key to this will be better "apps" to run on hand-held devices. Of the 400,000 apps now available for the iPhone/iPad, around 12% are related to learning (with a strong focus on language learning and K-12). What do next generation post-secondary learning apps look like and how can we make learning more engaging on the m-learning platform?

   The key can be public-private partnerships for innovation – to create a learning apps "factory" so that the development of learning apps is easier and their use more effective. New tools to speed and ease the development of apps and new cross-platform resources are emerging which would facilitate this.

4. Developing new models for rapid online course development.

   This is an interesting opportunity for applied R &D – it requires the re-engineering of current course development processes used by Ontario institutions (including re-thinking the roles of faculty/instructors, technology and instructional design and library-knowledge workers) so as to dramatically speed up program and course development (from months to weeks) and offer more programs and courses to Ontario with less development costs (time and money) and higher quality.

   This opportunity calls for systematic experiments which look at: (a) new process designs with the same roles as now; (b) new process designs with new roles for the participants; and (c) new kinds of incentives.

5. Determining the most effective online learning practices for Aboriginal learners.

   According to Statistics Canada (2011), Aboriginal status youth participate in post-secondary rate at a much lower rate than non-Aboriginal – with almost a 25 per cent difference. The Conference Board of Canada recently reported on the potential of online learning as a methodology that could respond to this challenge and provide a basis for effective learning circles that involves elders and band members as supportive mentors and coaches for learning. But what approaches work best and under what conditions?

6. Studying longitudinal trends in online learning in Ontario.

   In 2011, a survey of online higher education activity by the Ministry of Training, Colleges and Universities in Ontario captured the current scale of online learning at public colleges and universities in the province. For this information to be truly useful, however, regular updates are required that track the trends and the changes in online learning activity.

   Can we complete a secondary analysis and reporting of annual data being collected by the Ontario post-secondary sector for the benefit of the sector?

7. Evaluating technological and pedagogical developments that have a direct impact on online learning.

   Copyright, open educational resources, mobile learning, ePortfolios, Massive Open Online Courses, new models of outcomes assessment and course credit aggregation, and cloud computing all have potential impacts on online learning. Information on applications and effectiveness, inter-institutional case studies and evaluations, and policy recommendations could be provided for institutions and the province.

8. Understanding the costs and benefits of online learning.

   There is to date very little research that enables us to understand the costs of online learning and, in particular, the factors that drive costs. Without more studies, it will be difficult to identify ways in which online learning could increase productivity, or maintain or improve quality at lower cost. It is important to identify and measure benefits and costs.

9. Improving institutional planning and strategies for online learning.

   Academic administrators need to plan for the growth and maintenance of online learning, in terms of funding, instructor training and support, and above all in programming. What factors should determine the balance of classroom and online learning? Where and how should such decisions be made?

   This can also be seen an organizational design and implementation issue which means examining the managerial and strategic implications of, for example, increasing enrolment without new costs and re-imagining the use of capital and labour. It also involves identifying best cases and best practices in planning for learning technologies within institutions. What changes are necessary to have one-third of students taking at least part of their programs online, or having half of an institution's programs available online?

Next Steps

What has been presented here are some of the research themes that could be included within a province-wide, education research agenda for online learning. This is only the first step of a collaborative process to outline the essential components of such an agenda and consider how it might best be implemented to serve the needs and have an impact on online learning across Ontario.

Three next steps are proposed to support the development of online learning research agenda for Ontario:

- The database of researchers in online learning in Ontario, mentioned above, will be posted on the Ontario Online Learning Portal in Fall 2012. The database will not be complete but will comprise a substantive list of researchers in colleges and universities and their areas of interest.

- To begin the sector-wide dialogue and exchange of ideas on the potential research agenda, a few questions have been posed to collect information on the individuals and the topics that could be part of the agenda and its realization.

    1. We have identified some broad opportunities for research. What is your response to those ideas?
    2. Are there other areas that should be considered?
    3. Do you currently conduct research in online learning? If so, what are your main research interests?
    4. What is the best way to identify those in Ontario who are interested in research and evaluation in online learning?
    5. May we contact you directly if we have additional questions? If so, please provide your contact information.

    Send us your responses to these questions at research@contactnorth.ca.

- Based on the input to this informal consultation and discussions with colleagues across the sector, a series of steps towards the establishment of an Ontario research agenda for online learning will be posted in Fall 2012 on the Ontario Online Learning Portal.

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