Editorial
Beyond institutional boundaries: Focusing on the learner and embracing multi-disciplinarity

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The University of Toronto was greatly honored to hold the 4th edition of the International Conference on E-Learning between the 16th and the 17th of July, 2009. Toronto's worldwide reputation as a vibrant multi-cultural city and the university's well-established tradition of open academic exploration converged to provide an ideal milieu for the exchange of ideas and practices from around the globe. Thus, it came as no surprise to us that more than 300 participants graced us with their presence over the two days of the event, as presenters or attendees. We thank our international colleagues and our University of Toronto colleagues for making this conference a successful meeting of minds and experiences. We are enriched from the learning we had the opportunity to absorb over the two days of the conference and we hope all our participating colleagues and partners share this feeling.

In this special issue of the Electronic Journal of E-Learning we attempt to convey at least part of that learning through the selection of articles we put together. While, inevitably, we had to leave out other high quality manuscripts, we trust that the material included in this issue captures the cross-disciplinary spirit and truly international dimension of ICEL. Before diving into our description of the articles, however, we want to place their content in the context that was framed, in a somewhat unintended fashion, by the two keynote speakers. The speeches delivered by Professor Robert McClintock of Teachers College, Columbia University and Professor Gage Averill, Dean of the University of Toronto Mississauga, complemented each other in more ways than we would have ventured to imagine before the conference.

On the first day of the conference, in his talk entitled *Disclosing the Commons: On Breaking the Structural Limits of Education*, Professor McClintock presented his theories about the trajectories of technologies, making the particular point that as we, individuals, gain more autonomous control of our learning (something he called "iStudy"), we diminish control of those people who have historically existed between the "thinker" and the audience. But we are at an "intersection." In McClintock's worldview, we are at a point where we can become the agents of "iStudy" – where we can expand user control, or we can fall back and reproduce patterns of institutionalized dominance and control. In his own work, McClintock has tried to put theory to action. He has sought to create environments where both learner and teacher can work without reliance on support. In his view, the future of e-Learning is in how quickly we can normalize faculty to be self-reliant and to produce user-generated teaching and learning.

Using music as his example, Professor Averill treated ICEL participants to a lesson on post-Fordist theory as it relates to education during his keynote address, *Thinking Outside the Bachs: Music, Materiality, and Mash-ups in the Information Society*, on the second day of the conference. Universities, Averill argued, have historically been built around a Fordist approach to learning, where teaching is produced in a controlled, one-size-fits-all modality and where the mastering of scarcity maintains the hegemony of the institution. But, according to Averill, the digital age is pushing back hard against this Fordist approach.

The world is becoming a niche-of-one market, in an era Averill referred to as "post-scarcity," with its inherent on-demand immediacy, infinite choice, universal access and portability. Learning, as with all cultural production, has seen the time from investment, to production, to consumption, reduced to nearly zero under the influence of capitalism. He calls this phenomenon "prosumption," the idea that consumers are blurring the lines between production and consumption, as they take and reuse, and ultimately push for content to be free. In this context, Averill concluded, the challenge for educational institutions in this post-Fordist digital age is to move with the times, but still find a way to maintain the quality of the educational experience, and maintain the business of running the school.

There is a common thread that arises from these thematic approaches; that is, the need to breach entrenched educational institutionalism. And this breach of institutionalism gives us food for thought in re-defining the pedagogical value of digital technologies by placing emphasis on the advancement of the individual learner's needs. Assisted through e-learning tools, instructors and learners alike can expand the increasingly fluid boundaries of knowledge internalization that transcends the walls of one's place of learning. It is while pondering these trends that we assembled the collection of articles contained herein which speak from multiple perspectives tied together by the practical applications of digital technologies in various educational domains.

In an example of crossing the institutional boundaries, Charbonneau-Gowdy and Cechova report on a project designed for language teaching for learners located in remote areas, away from the affordances of a physical place of instruction. Cohorts of learners from Canada and the Czech Republic avail themselves of a platform using Web 2.0 technologies to communicate and gain fluency in English or French. The authors suggest that there is strong evidence that the online real-time communication method they describe is conducive to language acquisition.

A successful example of e-learning in health care is demonstrated by Garside et al. They designed and tested an online module meant to train resident clinical clerks and residents in filling out the paperwork needed in compliance with the Mental Health Act in Canada. The module contained a pre-determined sequence of steps, including an introductory section, a presentation of the legal forms, a guided tour outlining the proper completion of the forms as well as a case study to which the user had to apply the form. Based on the testing conducted by the authors under laboratory conditions, the conclusion suggests that the e-learning module is an efficient and cost-effective method in training health workers in this specific aspect of medical care.

Two articles in this special issue approach blended learning methods in very similar ways, yet in very different disciplines. Both instances presented here comparatively illustrate the pedagogical utility of technology in the classroom, without diminishing the continued importance of tried and tested methods of course delivery in the university. In the field of visual communications, George-Palionis and Filak experimented in a classroom setting with the parallel use of traditional course methods and electronic means of delivering the same course content. Two versions of the course were set up, one involving instructor-led lectures and printed textbooks in the classroom, the other comprised of audio or video lectures and an option to use an e-book. The authors found that, over the 15-week duration of the course, the level of student engagement in the blended approach was on par with the traditional method. However, the significant finding pointed out by the authors was the fact that the students in the blended

course were less negative about the course material and their performance than the students in the traditional course.

Laing Gibbard and Salajan provide another example of blended learning in a prosthodontic dentistry course. Second- and third-year students in the course, learning the principles of removable partial denture design, were each divided into two equal groups. For each year, one group performed the design on paper using a physical cast-model of the denture, while the other group carried out the same task via a web-based e-learning module containing a sequence of decisional steps enhanced with 3D images and animations. The results of the pre- and post-tests revealed that the students were impressed with the interactive nature of the online application. While they seemed to have performed better in the e-learning scenario than in the traditional mode, the students still felt that the tactile sense of holding a physical model was still important in their understanding of the design principles they had to learn.

Andergassen et al. present a study on the motivations of students who blog. In their study, Andergassen and her colleagues used "Ethnographic Decision Tree Modeling" to create predictive models of blog use by the students. The researchers found that those students who did use blogs, did so because of an interest in technology or some other intrinsic motivation. Those students who started using a blog but then stopped cited dissatisfaction with the technical features of the blog software and the lack of interaction with others as the main motivation for stopping. Finally, those students who did not even try using the blog cited the loss of privacy and the lack of immediacy as the main reasons for not adopting the technology. Overall, the researchers conclude that the lack of use of blogs was mostly attributable to what they describe as "external" factors, whereas those that did adopt the technology did so for internalized reasons.

Takeuchi et al. describe an ingenious e-learning system implemented in Japan, developed for university students in engineering. The system involves a university-wide networking solution that stores and broadcasts course materials both through workstations available throughout the campus as well as through a more novel medium represented by portable video game players. On the one hand, this setup provides the instructors and students to communicate via webcasts allowing for adjustments in course content application and provision of feedback both between teachers and learners as well as between peer students. On the other hand, the use of the portable video game players give students the possibility to engage in self-paced and personalized learning within, around or outside the university setting in situations requiring quick reviews or reinforcement of learning concepts.

Aborisade writes about his experiences using wikis with a large cohort class (+2000 students) in Nigeria. According to Aborisade, the large-class context calls for the creation of innovative pedagogies. He and his colleagues divided the students in his Language Arts course into problem-solving teams and had them use wikis to share the results of materials gathering and interviews on a project. A term paper was the end result, but the process of learning was the main objective. As a result of the wiki initiative, Aborisade and his colleagues noted a significant positive affect on the learning process, teamwork and leadership. In addition to improving ICT skills, the project also saw the wiki environment grow organically into a social network. Unfortunately, all was not perfect with the project, particularly the strain of a poor infrastructure, providing further insight into the benefits and challenges of the set-up and use of new knowledge technologies in our technology-poor context.

Two papers in this issue approached lecture recording and podcasting as an educational methodology from slightly divergent angles. Gorra and Finlay share their experiences in using podcasts as a formal part of a business studies course. The researchers found that the podcasts provided a reasonable alternative for students with different learning preferences and enhanced motivation to study. Gorra and Finlay also noted that podcasting production is viewed by faculty as a benefit for their own peer-based professional learning and development. The researchers noted that students seemed to value flexibility over mobility (tending to watch on a computer rather than on a portable media player like an iPod) and included the advice that podcasts are best used as a supplement to existing learning materials, and their use should be discussed in face-to-face course sessions so that students understand they are a fully integrated part of the course.

On a similar theme, Joordens et al. studied how students interacted with online recordings of lectures from mathematics courses and compared those interactions to how students used recorded lectures in a large cohort psychology course. Over several years of study on the use of recorded lectures, researchers discovered that more students preferred to watch the lectures online rather than attend live; that the watching experience was unrelated to the intended performance (for example, many students watched the lectures in novel contexts, for example with their parents); and students became habitualized to one mode or another (either in-person or online). In an earlier study, Joordens and other colleagues determined that simply watching the recordings did not result in a change to grades, however, in the psychology course, there was a positive correlation between the use of the pause and seek buttons and the final exam grade. But the researchers weren't sure if the correlation was causal or related to some other factor. So, to test the hypothesis, Joordens and some math colleagues recorded the lectures of an upper year calculus course and put them online as well. In the math course, however, watching the lectures online and using the pause button were negatively correlated to performance. This has led the researchers to the following hypothesis: the use of the pause feature in watching recorded lectures is more likely associated with surface-level memorization-type learning, which is not an effective strategy for conceptual courses like upper year calculus, but would be a more reasonable fit in an introductory psychology course.

In her article, Paulo Kushnir describes and tests the effects of the informational stimuli embedded in online environments on student cognition. The author tests her hypotheses of perceptual loading on two categories of students, one highly experienced and the other one less experienced in using online materials for learning. The students are faced with three scenarios involving a stimulus-low, a familiar and a stimulus-rich environment, respectively. One of the significant findings in Paulo Kushinr's experiment was the apparent counterintuitive logic that the students considered highly experienced with online tools were the ones who reported negative learning results in the stimulus rich environments. To redress such outcomes, Paulo Kushnir makes the case for solutions that include systems of online content delivery that allow learners to customize the learning environment according to their experience.

Like Paulo Kushnir, Greener and Jenkinson each set out to evaluate e-learning through a cognitive meta-analysis approach. Greener begins by pointing out that there isn't much current evidence that teachers are role-modeling effective e-learning to their learners. While some of this may be due to competency issues, Greener believes more of this reluctance is about fear and anxiety. Her paper explores the concepts and behaviors implied in the role-modeling of effective e-learning in the classroom, drawing on data directly from teachers and learners. Greener concludes that when a teacher is prepared to appear open and perhaps vulnerable in class, not insisting on being the only person in control of what the students learn, and when

a teacher demonstrates the value of the learning processes, rather than the value of content, effective role-modeling of e-learning occurs. Sometimes, this is a question of giving the student experience greater importance than the teacher experience in order to produce the socially purposeful outcome of the able enquirer and critical thinker who is at home with evolving technology, writes Greener.

In her research, Jenkison, explains that when we attempt to apply an information-processing model to the evaluation of e-learning, it fails to capture the complex interactions that occur between the learner and the knowledge object. According to Jenkinson, it is not surprising that studies examining the effectiveness of e-learning technology, particularly in the area of basic science, have reported mixed results. Interactive technology has been integrated into the curriculum at many levels, writes Jenkinson, but at times we are sacrificing an opportunity to explore understanding in a more meaningful way, in favor of more replicable, generalizable results. While this model of evaluation may tell us what new knowledge is learned by students, writes Jenkinson, it fails to describe both the transformative process by which new knowledge develops and the factors involved in supporting and sustaining this change.

Like Jenkinson, Barkand and Kush are interested in complex learning environments. In their case, Barkand and Kush write about three-dimensional virtual learning environments generally, and the Game Environment Applying Real Skills (GEARS) system specifically. Barkand and Kush aptly describe the learning environment and the experiences of the learners, but as they themselves conclude, being a relatively new form of educational delivery, there needs to be an urgent call for those who are utilizing three-dimensional virtual learning environments to collaborate and conduct research regarding their experiences and success for use in future program development. In fact, we would agree and extend this notion to all technology-mediated learning.

We are confident that the collection of papers assembled in this special issue is evocative of the power and versatility of e-learning solutions at once enhancing, pervading and supplanting the institutional fabric of learning. It is quite evident from these readings that the physical place of learning is being adapted to meet the challenges of a boundless quest for individualized knowledge generation and acquisition. We hope you will enjoy the variety of viewpoints contained here and that you will find them as thought-provoking as we did.