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# From disconnected to connected: Insights into the Future of Distance Education and Web 2.0 Tools in Higher Education

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## Introduction

The integration of information and communications technologies (ICT) in higher education, especially in North America and Europe, has reached a tipping point, where one is hard-pressed to find a classroom utterly devoid of any digital technology. In the developing world, distance education models are increasingly being implemented in postsecondary schools, particularly to promote the development of professional skills. This special issue reviews some distance education models and sheds light on how the exponential growth of online social interactions via increased adoption of Web 2.0 technologies such as blogs, wikis, and purposeful games has impacted student learning and instructional strategies in post-secondary schools from an international perspective. We critique the most common theoretical underpinnings for distance education and report some empirical evidence of how Web 2.0 technologies are being employed to improve performance in higher education classrooms in Canada and abroad.

Below, we present some Canadian data for this special issue. We begin with a discussion of how Canadians use the Internet, drawing heavily on reports by the Association for Canadian Studies on Canadians' online reading habits and Internet use in order to supplement their knowledge of Canadian history. One of our objectives is to help strengthen connections between practitioners and researchers, while involving multiple stakeholders in conversations concerning Web 2.0 use in higher education. We then review the literature on ICT use in higher education to provide a solid empirical foundation for the manuscripts published in this special issue. Finally, we provide a counterpoint to opinions currently expressed in the popular media on the future of technology use in higher education by offering evidence from a recent study that examined students and instructors' attitudes towards effective technology use in universities across Quebec.



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## Canadians' Use of the Internet

The popularization of the Internet in the early 1990s grew exponentially with the development of software dedicated to democratizing information technology. The growing availability of high-speed Internet access and the rise of Web 2.0 technologies at the turn of the 21st century enabled individuals to create and publish their own online content, and this has spurred the evolution of social media. Understood as a “group of Internet-based applications that build on the ideological and technological foundations of Web 2.0,” social media platforms “allow the creation and exchange of user-generated content” (Kaplan & Haenlein, 2010, p. 61). Included in this vast category of interactive technologies are social networking sites, which are a form of participatory social media. Boyd and Ellison (2007) describe these sites as:

Web-based services that allow individuals to 1) construct a public or semi-public profile within a bounded system, 2) articulate a list of other users with whom they share a connection, and 3) view and traverse their list of connections and those made by others within the system. (p. 211)

In Canada, 80% of citizens aged 16 and older use the Internet, and of these, 58% reported that they regularly use social networking sites (Statistics Canada, 2011). Notably, as of September 30, 2012, 52.7% of Canadians were Facebook subscribers (Internet World Stats, 2012).

## Online Reading Habits

Data compiled by the Association for Canadian Studies (ACS) call into question the claim that using the Internet to find information is changing reading habits, and thereby affecting the learning process. Their results challenge the widely held perception in Canada and elsewhere that the shift from paper to screen will result in a decline in reading. The ACS points to the findings of a 2012 survey conducted by Pew Research, which highlights that “While Americans enjoy reading as much as ever – 51% say they enjoy reading a lot, little changed over the past two decades – a declining proportion gets news or reads

other material on paper on a typical day” (Pew Research Center for People and the Press, 2012, p. 4).

Pew Research notes that there has been a shift in reading from print to electronic platforms. In their survey, 29% of respondents said they read a newspaper the day prior to completing the survey, with 23% reading it in the print version. A somewhat larger proportion (38%) said they regularly read a daily newspaper, although this percentage has declined from 54% in 2004. Moreover, Pew Research revealed that in the past decade, the percentage of people reading a print newspaper fell by 18 percentage points (from 41% to 23%). It is worth noting that the figures for newspaper readership may not include certain people who read newspapers on websites that aggregate news content, such as Google News or Yahoo News.

In the last ten years, there have been smaller declines in the percentages of Americans reading magazines or books in print (6 points and 4 points, respectively) than for newspapers (Pew Research, 2012). Just as online newspaper readers make up an ever-greater share of all newspaper readers, so too are more readers of magazines and books abandoning the printed page for tablets, digital books, and other devices.

So, what is the digital readership situation in Canada?

In a series of telephone surveys of nationally representative samples conducted by the ACS from 2007 to 2012, 9% of Canadians who said they read a magazine the day prior to the survey, and 20% who read a book, read them in a non-print format. According to the Canadian Newspaper Audience Databank (NADbank), in 2011 about 22% of Canadians read a daily newspaper online each week, with readership highest in Ottawa (37%), Quebec City (36%), and Montreal (35%). The National Book Count (National Reading Campaign, 2012) found that in a typical week in January 2012, approximately 3.4 million books were bought and loaned, and 10% of English language book sales were in digital format. This finding puts English Canada near the very top of international estimates of e-reading.

Book sales and public library circulations were counted for the week of January 23 to 29, 2012 as a snapshot of a typical reading week in Canada: approximately 3.4 million books were sold or circulated that week. Compared with the findings for the previous year, English language print book sales for the week increased by 4% over 2011 among English language booksellers. Although no direct comparison can be made, publishers have reported a “significant” increase from 2011 in downloaded e-books, and the practice is fully expected to continue rising.

## The Case of Canadian History

Elsewhere, data collected by the ACS indicate Canadians’ knowledge of the country’s history and the ways in which citizens use digital technologies to source information about their country. Promoting this kind of knowledge is widely seen as an effective way to foster citizenship. When asked to self-assess their knowledge about the country’s history, Canadians generally give themselves high marks. When Canadians need information about the country’s history, about four in ten go to the Internet, while one in four refer to books (see Table 1). Not surprisingly, there is a discrepancy between the oldest and youngest cohorts, with the majority of those under age 35 saying they use the Internet to obtain information about Canada’s history compared to about 36% of those over 35.

**Table 1.**

Which is the Principal source you go to when you need information on Canadian History?

Age	18–24	25–34	35–44	45–54	55–65	65+	Total %
Internet	51	53	41	35	37	31	41
Books	18	24	23	28	28	32	26
Television	11	3	7	11	8	11	9
Radio/newspaper	3	3	3	5	7	10	5
I never seek information on this subject	13	13	21	18	19	15	17

Note. Data collected by Leger Marketing for the Association for Canadian Studies

Individuals aged from 18 to 24 who use the Internet to seek information about Canadian history were much less likely to have read a book about the country’s history than those who used books as their main information source. Less than half of the youngest cohort surveyed who used the Internet as their main source of information on Canadian history had read a book on the subject in the past two years.

Not surprisingly, the more that people use the Internet, the greater the likelihood that they will use it to find information about Canada and Canadians. However, more frequent use of the Internet to find such information does not seem to heighten interest in Canada’s history, geography, people, or institutions. Furthermore, although pride in Canada appears to be somewhat higher among heavier Internet users aged 16 to 21, this does not imply greater interest in learning about Canada. In fact, the lighter Internet users agree more strongly when asked whether they wanted to learn more about the country, and this was true for 16- to 21-year-olds as well as 22- to 30-year-olds.

## Information and Communications Technology Use in Higher Education

In addition to Canadian citizens’ consumption of web-based material for personally motivated learning, we are also witnessing a growing trend to incorporate increasingly sophisticated ICT tools in education. These may be signs of the future indispensability of ICT tools in education. Nevertheless, it would be foolhardy to imagine that student up-

take of technology is a foregone conclusion simply because of the presumed benefits.

Liu (2010) conducted a survey of 126 university students who used course wikis over one semester and discovered that wiki self-efficacy, or “a person’s judgment of his/her capability to use wikis” (p. 55), perceived ease of use, perceived usefulness, and wiki use intention had a significant bearing on the students’ wiki use. Wiki self-efficacy combined with online posting anxiety explained 76.4% of the variance in perceived ease of use. In turn, the addition of perceived ease of use to Davis’ (1989) technology acceptance model explained 57.2% of perceived usefulness. Meanwhile, an impressive 82.5% of the variance in wiki use intention was explained by the aggregate combined variance of wiki self-efficacy, online posting anxiety, perceived ease of use, and perceived usefulness. Nevertheless, the proposed technology acceptance model predicted only 35.3% of actual wiki use. According to Liu (2010), factors such as enjoyment, social norms, and course grades may also contribute to predicting the use of such social media tools. In addition, Liu concedes that a more nuanced measure of wiki use may be required, whereby modification and use of wiki content are measured independently.

Part of Web 2.0 technology’s appeal is that individuals can post their own content online, and in the case of wikis, edit the content of others. Nevertheless, Liu (2010) argues that online posting can produce feelings of anxiety, as illustrated by the practice of online “lurking,” where users stealthily read the content of others but do not modify it or post content of their own. Whereas online posting anxiety was not found to be an issue in Liu’s study, the particular course wikis used by the participants were not open to the general public. Had they been, Liu suspects that the results may have confirmed the hypothesis that online posting anxiety predicts perceived ease of use and usefulness in the classroom.

Liu (2010) makes a significant contribution to the currently scant literature on wiki use in higher education. Further studies are needed to specifically identify how wikis are used by students and tea-

chers. Thus, whereas the purpose of the course wikis in Liu’s study was to “discuss course materials, share resources, critique [students] and conduct group projects” (p. 59), we need to know the extent to which these are generally done by students, and not just at one university. Moreover, teachers’ perceptions of wikis are noticeably absent from the discussion, yet common sense would dictate that they have a significant impact on students’ use of wikis.

Tsai, Laffey, and Hanuscin (2010) obtained largely positive responses from pre-service K-8 teachers at a mid-western state university in the U.S. who shared an online course management system (NETwork) with alumni who were teaching students at the same level. After using the system for one semester, the student teachers’ perceptions of social navigation, ease of use, usefulness, and the overall NETwork experience improved significantly. Moreover, interviews held during and after the semester revealed several perceived benefits. For instance, the students felt that the system supported their learning and boosted their teaching confidence. The more they participated in online discussions and activities, the greater their sense of community. Perhaps unsurprisingly, the student teachers wanted to remain members of the online community in order to continue broadening their insights into teaching with the input of in-service teachers. These findings are encouraging for advocates of Web 2.0 integration in university curricula. Nonetheless, the small sample size ( $n = 49$ ) and conspicuous demographic imbalances (student  $n = 47$ , working professionals  $n = 2$ ; females  $n = 46$ , males  $n = 3$ ) call for further and more wide-reaching studies.

In a more recent study, Buckley, Pitt, Norton, and Owens (2010) modified the Approaches and Study Skills Inventory for Students (ASSIST) survey tool (Entwistle & Ramsden, 1983) to conduct a mixed methods study that examined students’ perceptions of and proficiency with ICT use. A sample of 144 first-year undergraduate students completed a 52-item survey. Focus group interviews were also held to gather attitudes about blended learning, inclu-



ding networked technologies in the classroom. Eight items in the ASSIST addressed students' self-perceived concepts of learning; 52 items addressed deep, surface, and strategic approaches to learning; and eight items addressed students' course and teacher preferences. An instrument developed by Goodyear, Asensio, Jones, Hodgson, and Steeples (2003) called Judgments about Networked Learning (JNL) was used to collect data on students' attitudes toward computer-networked learning. In addition, 19 students were interviewed in five focus group discussions.

The results of Buckley et al.'s (2010) study showed significant positive associations between deep learning and perceptions of ICT use, as well as negative associations between a surface approach and perceptions of ICT use. Qualitatively, three themes emerged from the data. First, most students were aware of their own study approaches and strategies. Second, students were increasingly learning how to become independent learners based on their own strategies. Third, students still enjoyed the ability to express themselves in a live environment, regardless of their preference for specific ICT. Accordingly, Buckley et al. recommend that educators vary their pedagogical delivery before incorporating ICT in the classroom so as to help students select the approach and mix of learning strategies that would best suit their self-determined learning needs. The implications for a future that will be grappling to understand the role of Web 2.0 tools in higher education are multifaceted, and will require sustained theoretical and empirical research.

### **What does the future hold for Web 2.0 in Higher Education?**

In 1916, the education philosopher John Dewey wrote, "If we teach today as we taught yesterday, we rob our children of tomorrow." Dewey's words seem to have influenced a number of recent dialogues and opinions in popular media addressing the future of higher education. In the digital age, curriculum designers are beginning to acknowledge that the use of interactive technologies, such as certain

social media platforms, impacts both conventional notions of teaching and learning and learners' relationships to knowledge production and consumption (Haste, 2009). For example, it has been suggested that the arrival of massive online open courses and the economic benefits of online learning force us to reconsider the professor's role in and outside the university classroom. Elsewhere, opinion pieces in the popular media have exhorted university teachers to stop treating learners like "empty vessels," to do away with lecturing, and to make the shift to collaborative pedagogical models so as to encourage deeper, as opposed to surface, forms of learning.

For the record, we disagree with both Dewey and the above claims.

Allow us to explain. In February and March 2011, Magda Fusaro at the Université du Québec à Montréal and Vivek Venkatesh at Concordia University (Guest Editor for this special issue) co-led a province-wide study of over 15,000 students and 2,600 professors at 12 Quebec universities. Participants completed an electronic survey consisting of 120 items addressing their perceptions of technology integration, the instructional strategies used in university classes, and the overall effectiveness of the courses offered for that winter semester. The results, which were initially published in October 2012 by the Conference of Rectors and Principals of Québec Universities (Fusaro et al., 2012) and more recently in a focused analysis (Venkatesh, Croteau & Rabah, in press), were nothing short of surprising.

The results showed that university students overwhelmingly associated an effective course with one that emphasized lectures: yes, that good old traditional "sage on a stage" paradigm is highly predictive of an excellent student experience in a university course. In addition, students wanted these lectures to be intellectually stimulating and engaging, regardless of how technologies were used. Professors, on the other hand, believed that lecturing had a negative impact on a course's success, preferring instead to engage students in discussions and generally employing a more constructivist ap-

proach. These trends are not unique to Quebec: surveys of nearly one million learners who have taken courses at the Open University in the United Kingdom point to similar student preferences concerning pedagogical design.

Digging into the Quebec data set, Fusaro et al. (2012) found that learners and professors showed vastly different patterns of technology use during university courses. Instructors used the Internet to create and share content via blogs and wikis far more than students did, whereas learners used the Internet for reference purposes, and very rarely to share content. Additionally, content creation and sharing via social media usage was rampant, with more than 50% of Canadians using Facebook as a tool to build networks of online friends. Therefore, what the findings by Fusaro et al. and Venkatesh et al. (in press) tell us is that learners know what technologies they do not wish to use in their classes: they make a distinction between using technologies for pedagogical and communal purposes. The results of this large-scale study highlight the shortcomings of professional development programs for university instructors, which currently might be leaning too heavily on pedagogies that transfer cognitive responsibilities onto learners.

In light of the above studies, when it comes to implementing Web 2.0 technologies such as blogs, wikis, podcasts, virtual environments, and social networks in higher education, university instructors need not reject their previous teaching approaches. Instead, they could attempt to develop integrated pedagogical strategies that bridge the old-school instructivist lecturing and relatively newer constructivist styles. Several scholars have underscored the need to provide instructors with training on the best ways to integrate technology in their classrooms according to subject areas and teaching plans (Butler & Sellbom, 2002; Cuban, Kirkpatrick, & Peck 2001; Loveless, 2003; Mumtaz, 2000; Pelgrum 2001; Russell & Bradley, 1997; Subhi, 1999). Thus, instructors need more than professional development workshops to help them realize the full potential of these technologies. Studies are also needed to demonstrate the value of incorporating various tech-

nologies into learning environments and how these tools can be used creatively and effectively to instruct. If educators do not buy into the pedagogical value of these technologies, they will remain just fashionable add-ons to our curricula.

Marginson and Van der Wende (2007) emphasize that universities are more important than ever as mediums for continuous global flows of information and knowledge. Accordingly, this special issue of IJTHE presents five articles that address various aspects of Web 2.0 implementation in higher education. The eight international scholars who contributed to this issue come from a variety of social science disciplines, and they cover a wide range of topics related to technology implementation in higher education. They discuss the benefits and limitations of using Web 2.0 technologies in and outside university classrooms, for a thought-provoking contribution to the ongoing discussion on the use of ICT in higher education.

## Article Outlines

In the first article titled “Social media in higher education: A look at participatory culture in graduate coursework,” Davidson and Fountain propose two designs for piloted graduate-level education courses with embedded Web 2.0 technologies. These technologies are treated not only as add-ons in classroom practices, but also as part of the course rationale.

In the second article titled “Web 2.0 and its applications in higher education settings,” Kumar and Leeman present a study that underscores the potential of connecting pre-service teachers to social media, professional networks, and communities of practice in order to provide them with real-world experiences and connections with experienced professionals.

In the third article titled “A parallel world for the World Bank: A case study of *Urgent: Evoke*, an educational alternate Reality Game,” Waddington provides an analysis of an online alternate reality

game, *Urgent: Evoke*, which won the Direct Impact award at the 2011 Games for Change Conference. Waddington highlights the potential of integrating serious games that incorporate Web 2.0 tools into higher education.

In the fourth article titled “Impact of Web 2.0 technologies in Higher Education: Student evaluation of how teaching enhances faculty’s professional development,” McDonald highlights the role of Web 2.0 technologies and the nature of their interactive feedback by sourcing ongoing information from university students in an effort to assist faculty in their continuous professional development in order to enhance teaching and learning.

In the fifth article titled “Distance education in Africa: A longitudinal study of the perceptions of 2,416 students,” Karsenti and Collin conduct an in-depth mixed methods study to gain a deeper understanding of students’ perceptions of distance education programs in Africa. Karsenti and Collin’s results can inform policy makers, decision makers, and practitioners about the potential and benefits of distance learning for developing a qualified workforce attuned to Africa’s local and regional needs.

These papers provide an initial exploration of the benefits of incorporating distance education and Web 2.0 technologies in university courses from an international standpoint. This special issue should mark the start of a rich and productive exploration of this topic. We encourage you, our readers, to take up the ideas proffered in this issue and to continue pursuing this worthwhile investigation.

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