

PROMISE AND CHALLENGE OF E-LEARNING – LITERATURE REVIEW

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Abstract

In this paper is presented the key findings from a literature review on the use of E-learning. The literature review presented here examines the promise and challenges associated with E-learning. Also, this paper reviews literature that deals with the definition of E-Learning 2.0 distinguishing it from traditional E-learning. The benefits of E-learning include a blending of formal and informal learning environments that open up new avenues of self service through experiential learning, while facilitating teamwork and community. While these benefits are fascinating, it is important to recognize that E-learning also poses challenges for educators and students alike. Finally, this paper is closed with conclusions and suggestions for future research on E-learning.

Keyword: E-learning, web-based education, distance learning, blended courses

1. Introduction

It almost goes without saying that web-based education and training has become a global phenomenon. In 2007, companies and organizations spent over \$134 billion on employee learning and development in the United States alone, according to the American Society for Training and Development. That year, spending on e-learning climbed to \$17.5 billion from \$10.0 billion just a year earlier (The Journal, 30 July 2007). By 2008, two thirds of American universities and colleges offered online courses (National Center for Education Statistics, 2009). In the United Kingdom, the government has undertaken an ambitious plan to “transform learning” and encourage students from under-served communities to enter the healthcare field (Higher Education Funding Council for England: Strategic Plan 2006-11, 2009). In Saudi Arabia, several universities, including King Saud University, King Abdulaziz University, Baha University, Qassim University,

and Madinah Islamic University were offering extensive online programs with the industry reaching \$125 million in 2008. The Technical and Vocational Training Corporation of the Kingdom now offers over 4000 online courses. By 2012, the e-learning market in India is expected to pass \$280 million, while India already earns \$15 million from online tutoring alone (The Financial Times, 26 May 2008). Global e-learning expenditure will surpass \$52 billion this coming year (The Financial Times).

In Malaysia, University Tun Abdul Razak, a fully virtual university, caters to working adults and offers every kind of post-secondary degree, including several doctorates. The Ministry of Education has also undertaken to increase web-based learning at all primary and secondary schools. India's elite Institute of Management now offers online Master's programs and the government has encouraged the opening of e-learning centers throughout the subcontinent. Perhaps one of the oldest degree-granting post-secondary distance-learning institutions is the Open University in the United Kingdom, which has been providing undergraduate and graduate degrees since the 1960s, today it has begun to evolve into the next generation of e-learning through its "iTunes U" program that allows students to download course material directly onto their portable computers or listening devices. Many of the UK's top universities offer full or partial online programs including Master's and Ph.D. such as the University of Leicester, Durham University, and Oxford. The University of Manchester not only participates in the government-promoted e-mentoring program for students from underrepresented populations, but has also partnered with IBM in an e-mentoring program for current business students. Canada's University of British Columbia hosts a school-wide "wiki" used for hundreds of its courses and maintained jointly by faculty and students and all faculty evaluations are now conducted online. Each June, UBC has been hosting an e-Strategy Town Hall to discuss and promote its e-learning efforts, it already offers hundreds of online courses including in its school of medicine. In the United States, several universities now offer graduate degrees or certificates in e-teaching and web-based education. The University of Wisconsin-Stout, for example, offers a graduate certificate in E-learning and Online Teaching through its College of Education, Health, and Human Sciences through a series of intensive eight-week sessions. The University of Nebraska at Kearney has an "eCampus" offering fully online undergraduate and graduate programs, while its Lincoln campus offers courses and programs to high school (secondary school), undergraduate, and graduate students.

2. Promise

Where does the appeal of e-learning come from and what does its future look like? This paper proposes that the reasons for its increasing

popularity and the advantages that it has over in-class learning are steering web-based education in a new direction beyond merely offering online content into a new way of peer-to-peer and learner-to-teacher interaction. This direction is often called e-learning 2.0.

Just like distance learning in general from the days of correspondence courses to cassette taped continuing education to radio and video courses. Geographical reach is an important aim of e-learning. Geographically spread out countries like Australia have begun using web-based education to reach people who would otherwise need to move great distances in order to take a course or pursue a degree. China has long used and continues to use radio courses to reach wide audiences in remote locations and is now beginning to offer more online instruction. Not only does the availability of these web-courses spread knowledge and know-how to remote areas, but it also enables those distant learners to collaborate with colleagues in their field or establish wider networks.

Increased equity has also long been another advantage of distance learning in general; distance courses are typically less than half the cost of in-class instruction. Now, with web-based learning those costs are decreasing even further on a per pupil basis and can reach students of almost all economic circumstances. On the other hand, the fact that web-based education offers flexible schedules and modes of interaction also increases equity by reaching students who would not otherwise be able to make the time commitments of traditional classroom courses. Working adults, family caregivers, students with physical disabilities or the elderly can participate in learning activities that would otherwise be impossible or too inconvenient. E-learning's time flexibility makes it possible not only to reach those unable to make the time or monetary commitments required for in-class education, but also to enable those to whom traditional teaching methods are not well suited.

More than an issue of equity and the convenience that makes it possible to reach non-traditional students such as working adults and others e-learning, also promises to reach any type of student who would not feel as comfortable participating in a traditional classroom setting. Some students are too shy to participate effectively in a classroom but could do so in a forum setting or in an online collaborative project, others such as international students might not have sufficient command of the host language to take part in in-class discussion but are able to do so electronically.

The cost savings associated with distance learning in general are even more pronounced in the case of web-based learning. Most estimate the savings at over 50% over the in-class variety. For example, at a Toyota plant in the United States the company saved 60% of the cost of an in-person

alternative on a work procedure training course (eLearnity, 2002). In an effort to improve teaching in finite mathematics, Iowa State University implemented an online interactive version of the course and brought down the cost per student from \$129 to \$77 without sacrificing quality (Love et al., 2006). Moreover, system-wide e-learning efforts (such as those employed by large state universities) have tended to bring costs down even further.

The examples of cost savings just mentioned do not include the hidden costs of classroom learning. First, the learner has to get to the location and pay for commuting costs, meals, and the fees associated with on-campus learning. Second, relocating or commuting have an impact on a learner's family. Being away from family for extended periods of time can be especially demanding for older students or those with children. Finally, there are hidden environmental impacts of transportation, relocation, and opening a new home. Nevertheless, quantifying these costs of on-campus learning remains complex and ultimately depends on the learning's context.

The flexibility, scalability, and rapid deploy ability of web-based learning could also promote innovation because the implementation delay associated with in-class learning can be virtually eliminated. Innovative instructors can incorporate new content or employ new methodology and have immediate feedback from learners, other instructors, or even the Internet public. The University of British Columbia's course *wikis* do just that by enabling both teacher and learner to react, comment, and add content.

But e-learning today is not only accelerating the pace of innovation but rather is driving innovation in a particular direction, that direction towards collaborative learning, peer-to-peer interaction, and problem-based teaching has been called e-learning 2.0 and has its origins in the constructivist paradigm of pedagogy. The paradigm views teachers and learners together as social builders of knowledge, rather than learners as passive "receivers" of information (Rivera & Rowland, 2008; Hutchings et al., 2007; Daly et al., 2007). In this view, the fact that a learning *community* constructs knowledge over *time* makes learning an interactive social phenomenon rather than an individual cognitive one.

While this constructivism was becoming the modern view in education, web technology was reaching the so-called "2.0" stage: social media, instant commentary, peer-to-peer networking, open architecture (easy, rapid entry), and all with a horizontal structure (Rivera & Rowland, 2008). The confluence of a new way of communicating and of using the Internet with a pedagogy based on learner social interaction brought about the coinage of "e-learning 2.0": online learning now strove to take advantage of 2.0 technology and mirrored some of the same 2.0 trends. Blogs, wikis, instant comments on learner forums replaced what once took weeks or months to develop in "hallway" talk between peers and colleagues.

The definition of inspiring learning did not change with the recent growth in popularity of web-based learning, yet the way to achieve that powerful learning has changed. “Powerful” learning is an experience that is memorable, high caliber, impactful, and fertile over time (Rivera & Rowland, 2008). No matter what form it takes, such a learning experience is the ideal of a conscientious educator. What has changed is the possibility of doing this through distance learning. Today’s e-learning 2.0 technology has made this achievable without the traditional face-to-face in-class instruction. A well-designed course today might begin with students discussing a problem over the course of several weeks through an online forum, continue with a project proposal to help solve it and culminate in an actual attempt to implement it in the real world. It might even be revisited months or years after the course has officially “ended”.

Truly learner-centered instruction is now possible through self-paced and flexible courses that allow individual development while creating a knowledge community between learners amongst themselves, and between learners and teachers. The fact that technology can now bring together many elements in various formats makes adding interesting variety a matter of planning and not of expending vast resources. Social networking and communication media now make creating learning networks around key topics of interest a matter of days or weeks. Indeed, geographic, temporal, and economic barriers to implementing effective distance courses seem to be disappearing, but the institutional, faculty, and student challenges remain serious.

3. Challenges

Institutional challenges to implementing effective e-learning tend to be top-level and strategic. First, an institution must face the (now rapidly decreasing) initial costs related to technology, infrastructure, and training. An adequate communications infrastructure goes without saying where the speed and reliability of a network are vital to success. This issue, however, has become nearly obsolete in much of the world and remains important only in some developing countries. Nor are technology costs any longer an issue for most institutions and learners as the price of the software needed for web-based teaching has fallen rapidly. This is even more so for large state or public universities since they can typically negotiate advantageous licensing terms. The software associated especially with e-learning 2.0 may cost virtually zero many of the most popular (typically web-based) applications are free or open source such as wikis, Moodle, and the various social networking tools. Perhaps the only remaining significant initial cost today is faculty, staff, and student training. But that too tends to fall over time as the tools used for web-based learning increasingly become standard practice.

The newest generation of undergraduate and postgraduate students is coming to university not only with experience using social networking media such as twitter and Facebook, but also with prior experience using online course software such as BlackBoard or Moodle (Edmunson, 2007). The remaining important issue with the initial cost of web-based teaching concerns teacher training. Faculty have to learn not only the software and Internet tools to do a new kind of teaching, but also the new design issues associated with it.

The key factor of long-term success in implementing e-learning tends to be developing an e-learning planning strategy at the managerial level. Organizations that declare it as a policy goal and plan accordingly with milestones and short and long-term goals in implementing tend to have more success than those that implement e-learning ad hoc or on a department by department basis (Nichols, 2008). This is because coordinated decisions are necessary for institution-wide policy implementation and technology adoption. Institutions lacking effective planning, or “putting the cart before the horse”, have suffered various setbacks or quality problems (Buchanan, 2004). Having high-level strategic ownership of the e-learning plan also helps the administration to get faculty on-board and moving in the same direction (Nichols, 2008; Galusha, 1998; Rockwell et al, 1999).

Faculty also face various challenges in achieving effective web-based teaching. Most faculty view e-learning as potentially positive. They see the possibilities of innovation, to improve teaching, reach more students, and achieve some of their own teaching and professional goals (Rockwell et al, 1999). However, they remain wary of several issues that could have an effect on their ability to teach their online and other courses, their ability to continue doing research, or the quality of web-based courses. A preliminary concern of some faculty is the time required to learn the new technology or to manage an e-course (Rockwell et al., 1999; Valentine, 2002). They are also concerned about the support and rewards from their administration and the institution. Sometimes it is not clear to faculty that their administration is fully behind an e-learning initiative (Rockwell et al., Valentine, Nichols).

University faculty members are also aware of the complexity of designing effective web-based and blended courses (Buchanan, 2004; Nichols, 2008; Rivera & Rowland, 2008; Valentine, 2002; Sherry, 1996; Poley, 2008; Jain, 2003). A well-designed course today must promote active learning, peer-to-peer interaction, interactivity between teacher, learners, and the material (Hutchings et al., 2007). Because of rising expectations, a course must also incorporate visual and other media content and perpetuate a good level of variety. Rapid teacher feedback is essential for student satisfaction and for overcoming the absence of face-to-face time between teacher and learner (Rivera & Rowland, 2008; Hutchings et al., 2007; Edirisingha, 2009). Moreover, the new demands for a well-designed e-

course call for a new role to be played by the instructor (Sherry, 1996; Rivera & Rowland, 2008). Today's effective e-teacher does not serve as a tutor of a body of knowledge but a facilitator in the individual and social creation of knowledge. Such a role for the teacher also posits a challenge for learners, who may need to adjust to a new way of social interaction.

4. Conclusion

This paper discuss some of the origins of rapid growth trends in web-based education. In conclusion, students must nevertheless navigate several obstacles in order to take advantage of the new opportunity that in the end could be enormously beneficial to them. Technical issues tend to be less important for learners because more and more of them are getting exposed to the software and web-tools used in e-learning. Nevertheless, the two most frequently cited challenges for students in distance-education in general are lack of face-to-face contact with teachers and lack of face-to-face interaction with other. Some of these concerns are fading with better communication technologies, such as discussion forums and email. For universities and faculty, the challenges remain significant but they pale in comparison to the infinite promise that e-learning especially the 2.0 wave holds in store for institutions of higher learning, schools, and business. Professional, vocational, and general education can reach an ever wider audience. Geography, economics and family status will become less important to those seeking knowledge more learning styles will be accommodated. Moreover, the overall quality of education can greatly improve as it begins to truly take advantage of the opportunities of the information age.

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