Online Learning: From a specialized distance education paradigm to a ubiquitous element of contemporary education

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Abstract- **This paper provides a literature overview of the increasing importance of online learning across all modes of instruction, whether they take place in higher education, school-based or informal education. It then moves to discussing the current situation regarding the Australian university sector and then provides an example of the same subject offered in a School of Education across four different modes – two being face to face and two by distance. The modes are reviewed to examine the use of online learning with the common subject and assessment being the control.**

Keywords: e-Learning, online learning, education, ICT, information communication technology, higher education

I. INTRODUCTION

As predicted by Anderson and Baskin [1], online learning has shifted "from the domain of distance education to encompass all modes of educational delivery." Ten years ago, online learning almost exclusively belonged in the province of distance delivery of education but now pre-school children engage in computer games that are not installed on their local computer but delivered from the cloud. In 2002, some higher education courses delivered on-campus were beginning to see the benefits of blending face to face with online delivery, but now all subjects at many universities and institutions of higher education mandate the inclusion of an online component, regardless of their mode. This is now not unusual in tertiary education delivery and is just indicative of the current trend in ensuring that elements of online learning are used in all modes of delivery. In school-based education, the Queensland state government provider of online resources has established 'Polaris', a data centre housing 1.5 petabytes of data, has 6000 square metres of rack space, 3 floors of server rooms and 2 x 20 tonne back-up generators. This is just to serve the government primary and high school requirements for online learning in one state of Australia and is a compelling indication of the explosive growth in online learning. In informal education, the Internet has become a primary source for learning and this includes a blending of formal and informal education through the availability of free and open enrolment in courses through massive open online courses (MOOCs). This paper will explore current trends in the literature pertaining to online learning and then will explore a case study of a university program delivered across four different modes from two sites, that empowers undergraduate students to create their own web-enhanced learning activities using Google Sites and associated Google Apps. Two of the modes are face-to face, one is blended and the other totally online.

II. LITERATURE REVIEW

The age of globalization and technological development has changed the appearance and operation of modern society and the world has become increasingly digital. Advances in technology and the interrelation of Information Communication Technology (ICT) with teaching and learning settings have quickened the growth of distance learning and fundamentally changed the way that we teach. Competing in the world marketplace, students need to be equipped with 21st century skills that are offered by the arrival of technology. Researchers in the field argue that ICT has proven its potential to fulfil the promising expectations of life-long learning by assisting in the delivery of high-quality services [2].

This has attracted the attention of educational policy makers who have worked to utilize the benefits of distance learning or virtual education modes as alternatives to face-to-face learning or as a means of offering blended modes of delivery. McCoog[2] and Henry, et al. [3] also highlight the importance of thoughtful and purposeful use of technology to facilitate students' achievements helping exploration of other learning avenues in the process of differentiating instruction with clear educational goals. Based on constructivism, recent studies confirm the potential of the Internet and the Web to enhance even the best classroom teaching [4] such as engaging students in creative information gap activities and real experiential learning [4].

According to Palloff and Pratt [1999; cited in 5], distance education involves both distance teaching (focusing on the instructor's role) and distance learning (focusing on the learner's role). Such a mode, as asserted by them, requires separation of teacher and learner in space and sometimes in

time and the use of educational media to connect teacher and learner [5]. Mshvidobadze and Gogoladze[6] also define the term "distance learning" as the learning environment in which most or all of the learning happens outside the traditional classroom using paper resources, video, teleconferencing, Computer Managed Learning, or on-line courses. Distance education popularity relies not only on its convenient approach for employees and parents to follow higher or continuing education [7], but also on its flexible access to learning resources regardless of space and occasional time limits which are more responsive to students' needs [5, 8, 9].

In summary, distance education creates an opportunity for collaborative learning among a group of people irrespective of their age, background, and geographical distance limitations. Anderson and Baskin [1] also claim that "the value of the on-line environment lies in its capacity to enable our collaborative knowledge about teaching and learning to interact so that each becomes a structuring, and constitutive resource for the other" [1]. From a report published in 2003 by the Illinois Network Online [cited in 8], independent learners take advantage of online courses as the majority of students taking such classes are attracted by the convenience, availability, and flexibility of scheduling classes, not because of the suitability of the classes to their learning styles. Ryan [10] also states that most students attending online classes are attracted by the convenience and flexibility of scheduling.

To ensure IT competency in the modern marketplace, students need to be equipped with a high skill level to remain abreast of technological advances. Online learning as an emerging paradigm of modern education [11] works best for people who are well–organized, self–motivated, and able to manage their time well [12]. The focus of instruction should be on students' achieving an effective integration of technology. For example, Sun, et al. [11] believe that "e-learning's characteristics fulfill the requirements for learning in a modern society and have created great demand for e-learning from businesses and institutes of higher education" [11] with a growth rate of 35.6%. However failure exists as some users stop their online learning after an initial experience for unknown reasons [11]. Gansler[12] further states that the teacher can easily recognize when students in the classroom understand a lesson or not, by simply reading their facial expressions, whilst in online learning the responsibility lies with students to ask the teacher for help when they need more clarification or explanation.

According to Mshvidobadze and Gogoladze[6], most of the universities and colleges in the world are now developing different types of distance education programs offering courses from the most basic instruction through to the highest levels of degree and doctoral programs. For example, the majority of educational institutions use the Learning Management System (LMS) to manage and monitor learners, teachers and content of courses [13]. Learners can log in to LMS and use online tools like email, chat, quizzes and forums to communicate. Learners can also use LMS as a means of social networking and knowledge sharing. Ramli et al, also highlight a report released in 2011 by the U.S. Department of Education, saying that "from 2000 to 2008, the percentage of undergraduates enrolled in at least one distance education class expanded from 8 percent to 20 percent, and the percentage enrolled in a distance education degree program increased from 2 percent to 4 percent " [6].

Many professionals in the field agree about using technology in classrooms, to accommodate the changing nature of literacy and the new technologies [3, 14, 15]. There is a need to integrate new literacies into the classroom to prepare students for the 21st century. According to socio-constructivists, learning happens via interaction between learners and their environment, therefore, Mupinga, et al. [8] recommend providing ample opportunities for student-to-student and student-to-teacher interactions in online courses. Mupinga, et al. have found that student interaction with online instructors provides the most significant benefits in online courses.

III. Online learning: Dominantparadigm or important partner in all modes of learning?

Sun et al. [11] speculate, "e-Learning is emerging as the paradigm of modern education". Since 2008, e-Learning has not proven to be 'the paradigm' of current educational practices but has shown remarkable growth, not just in distance education delivery but an infiltration across all modes of education has become apparent. Undoubtedly, e-Learning has become an important aspect of almost all forms and stages of learning and the rate of growth and uptake of e-Learning has not yet peaked.

A major report on Australian universities by consultants Ernst and Young outlined in The Australian Newspaper (2012, October, 24th, p.1) concluded that only the elite universities will survive the next 25 years and they caution that "exploding enrolments in massive open online courses, or MOOCs, and increased demand for tertiary degrees globally point to the need for Australian institutions to broaden their scope in how and where they teach." Australian universities who are offering access to MOOCs are experiencing high levels of uptake. Recently, Professor Gyln Davis, the Vice-Chancellor of Australian Group of Eight University, Monash, reported that his university had started offering some subjects through the established MOOC, Coursera and that the uptake was astonishing. Overall Coursera has 1.4 million enrolments and 33 university partners, including elite institutions such as Stanford and University of London (The Australian Newspaper, October 17th, 2012, p.23). Despite this massive change, Professor Hilmer of the University of New South Wales expressed the view that universities would not need to change as rapidly as the report recommended. He argued that most students enrolling in universities were unlikely to want to gain entry to higher education and then go upstairs in their

residence and log on. He cited the importance of the face-to-face university experience, including the social aspects of university life as a key motivator for face-to-face attendance at universities (The Australian Newspaper, October, 24th, p.4). The current arguments are not about whether e-Learning is important but about whether its influence will be dominant and overwhelming.

IV. An example of current practice regarding the infiltration of e-Learning across modes

One of the current authors (Anderson) coordinates and teaches in the James Cook University (Australia) subject, ED3441 (Technologies Across the Curriculum), which is an undergraduate subject in the School of Education. This subject is taught in four different modes to distinctly different groups of students. In all four cohorts the students are overwhelmingly female, since the teaching profession in Australia has for a long time been a gendered profession, dominated by women. The first group 'Cairns – Internal' consists of 48 students, 5 of which are males. This group lives in a regional city and is mainly school leavers who have finished 12 years of schooling and have enrolled in the Education degree in face-to-face mode. Group two 'Townsville – Internal' live in another regional city that has a distinctly different culture and are also attending face to face. This group of 91 students has 16 males. Group three has 5 female enrolments of students from an Aboriginal or Torres Strait Islander background. In this mode, students are supported by face-to-face tutors who are employed by the state school education authority. The authority supports this mode in order to encourage the graduation of more Australian Indigenous graduates, which is also a priority of the university. In addition to the face-to-face tutoring, these students access the online resources.

This then provides an excellent scenario for examining the use of e-Learning across three different modes, where the common subject outline and assessment provides a 'control' for a brief review of the use of online learning. As mentioned previously, all subject modes must have an online site for students to access. The discussion will encompass online resources; online discussion board; use of online tests and the way students created online resources.

It was a common feature of all modes that the subject readings for each weekly theme were posted online in weekly folders. For face-to-face students, PowerPoint files were loaded after the lecture but for the distance students, PowerPoint files were uploaded at the beginning of the week and were designed for individual viewing with hyperlinks to information that would be discussed during lectures. Another important resource was the use of video files for key lectures and another use was as a substitute for technical lab instruction related to the use of Google Sites. The subject required students to design and create their own web-supported learning activity in Google Sites. The websites that they created needed to follow the Webquest model. As distance students did not have access to the face-to-face technical tutorials, these were reproduced using the software 'Captivate'. These video tutorials were designed specifically for the distance students but the face-to-face students requested access to them, as they sometimes needed to miss tutorials or wanted to revise the instructions.

Across all modes, students had access to the 'Blackboard' based discussion board on the weekly topics but only a handful of the face-to-face students posted responses to the questions whereas hundreds of posts were received from the distance students. The policy implemented by the subject coordinator was that all posts received a response from an academic staff member, even if the post was a comment rather than a question. This was the single change made from the previous year's offering and this strategy appeared to make a very significant positive difference to the formal student feedback from students in distance mode. Students were also encouraged to interact with each other on the discussion board. All students in all modes completed an online multiple choice quiz after the third week as the first three weeks involved the students in acquiring core knowledge prior to moving to the more creative and higher order task of creating their own web-based learning activity. This strategy was very well regarded by the students as they received immediate feedback on their acquisition of core knowledge and saved the lecturers' time in marking.

From this brief analysis, it is clear that e-Learning was an important part of each mode and undoubtedly, the dominant paradigm for the distance students. The students in each mode not only participated in learning through online means but they each created their own web-based and web-supported learning activity to be used in their own teaching for students at pre-school, primary school and secondary school levels. An example of a web-supported learning activity created by one of the students can be found at: https://sites.google.com/site/oceansaviours/.

While e-Learning has become the most dominant means of providing distance learning, it is evident that as time has gone on, it has achieved higher levels of importance and uptake across all modes of learning and the course outlined in this paper is one example.

REFERENCES

1. Anderson, N. and C. Baskin, *Can we leave it to chance? New learning technologies and the problem of professional competence.* International Education Journal, 2002. 3(3): p. 126-137.
2. McCoog, I.J., *Integrated instruction: Multiple intelligences and technology.* The Clearing House, 2007. 81(1): p. 25-28.
3. Henry, L.A., J. Coiro, and J. Castek, *The flickering mind: The false promise of technology in the classroom and how learning can be saved.* Journal of Asolescent & Adult Literacy, 2005. 48(5): p. 442-445.
4. Felix, U., *The web as a vehicle for constructivist approaches in language teaching* ReCALL, 2002. 14(1): p. 2-15.

5. Zhang, X. and G. Cui, *Learning beliefs of distance foreign language learners in China: A survey study.* System, 2010. 38: p. 30-40.

6. Mshvidobadze, T. and T. Gogoladze, *About web-based distance learning.*International Journal of Distributed and Parallel Systems (IJDPS), 2012. 3(3): p. 133-143.

7. Niu, J., et al., *Exploring an integrated approach to web-based course assessment.* AAOU Journal 2005. 1: p. 38-44.

8. Mupinga, D.M., R.T. Nora, and D.C. Yaw (2006) *The learning styles, expectations and needs of Online students.* College Teaching 54, 185-189.

9. Rassool, G.H. and S. Rawaf, *The influence of learning styles preferences of undergraduate nursing students on educational outcomes in substance use education.* Nurse Education in Practice, 2008. 8: p. 306-314.

10. Ryan, S., *Is online learning right for you?* American Agent and Broker, 2001. 73(6): p. 54-58.

11. Sun, P.-C., et al., *What drives a successful e-learning? An empirical investigation of the critical factors influencing learner satisfaction.* Computers & Education, 2008. 50: p. 1183-1202.

12. Gansler, A., *Is online learning right for you? Certain personal traits predict success online.* Distance Learning Today, 2007. 1(1).

13. Ramli, N.F.M., S. Darus, and N.A. Bakar, *Metacognitive Online Reading Strategies of Adult ESL Learners Using a Learning Management System.* Theory and Practice in Language Studies, 2011. 1(3): p. 195-204.

14. Leu, D.J., et al., *The lessons that children teach us: Integrating children's literature and the new literacies of the Internet.* International Reading Association, 2004: p. 496-503.

15. Coiro, J., *Reading Comprehension on the Internet: Expanding Our Understanding of Reading Comprehension to Encompass New Literacies.* the Reading Teacher, 2003. 56(5): p. 458-464.

BIODATA

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