An mLearning Journey: Mobile Web 2.0 Critical Success Factors

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ABSTRACT

This paper discusses six critical success factors for mobile Web 2.0 implementation identified throughout fifteen mLearning action research projects (cycles) carried out and evaluated between 2006 and 2009. The paper briefly outlines the implications of each of the five learning contexts involved in the projects in light of these critical success factors. The resultant developments of strategies for future mLearning projects in 2010 and beyond are also briefly discussed.

Keywords: mLearning, Smartphones, Social Constructivism, Social Software Tools, Web 2.0, Wireless Mobile Devices

INTRODUCTION

Fifteen mLearning projects (Cochrane, 2009b; Cochrane & Bateman, 2010a) from 2006 to 2009 situated within five different case studies (five different course contexts) informed the identification of critical pedagogical success factors for implementing mobile web 2.0 within tertiary education, and were used to inform the planning of twelve subsequent mLearning projects in 2010.

Pedagogical Context

The mLearning projects encompassed five different tertiary courses, forming five core case studies spanning from one to three years of implementation and refinement, and involved a total of 280 participants. The learning contexts included: Bachelor of Product Design (2006 using Palm Lifedrive, 2008 using Nokia N80, N95, 2009 using Nokia XM5800, N95, N97), Diploma of Landscape Design (2006 Using Palm TX, 2007 using Nokia N80, 2008 using Sonyericsson P1i, 2009 using Dell mini9 netbook), Diploma of Contemporary Music (2008, 2009 using iPod Touch, iPhone 3G), Bachelor of Architecture (2009, using Nokia XM5800 and Dell Mini9 netbook), and the Bachelor of Performing and Screen Arts (2009 using Dell Mini9 netbook and Nokia XM5800). The research used a participatory action research methodology, and based its pedagogical decisions upon the foundation of social constructivist learning theories, with a focus upon facilitating student-generated content and student-generated learning contexts. See Cochrane and Bateman (2010a), and Cochrane (2009b) for summaries of the research methodology and project outlines.

Mobile Web 2.0

Explicit social constructivist pedagogy underpins each of the mLearning projects, forming
the basis for the selection of tools to support this pedagogical approach. Mobile web 2.0 tools are web 2.0 services that are formatted for use with mobile devices including: blogs, Google mobile tools, YouTube, Flickr, Twitter, QR Codes, etc. (Cochrane & Bateman, 2010b). These web 2.0 (O’Reilly, 2005), or ‘social software’ tools (Alexander, 2006; Mejias, 2006), share many synergies with social constructivist learning pedagogies. Web 2.0 supports collaborative group work, peer critique, formative feedback, user generated content, user tagging (categorizing and collating), and other processes similar to those used in social constructivist learning environments where the focus is on what the students do and discover.

“The application of social software in this manner supports a constructivist pedagogy where students feel empowered to take charge of their own learning.” (Mejias, 2006, p. 5)

Increasingly educators are harnessing web 2.0 tools for creating engaging student-centred learning environments. This appropriation of web 2.0 tools within a social constructivist pedagogy has been termed “pedagogy 2.0” (McLoughlin & Lee, 2008a). This research was interested in appropriating the benefits of web 2.0 and pedagogy 2.0 anywhere anytime using mobile web 2.0 and wireless mobile devices (or WMDs), in particular WiFi (wireless Ethernet) and 3G (third generation mobile ‘broadband’) enabled smartphones, and 3G enabled netbooks.

**Identified Critical Success Factors**

Based on the experiences gathered from the fifteen mobile learning projects between 2006 and 2009 the researcher has identified several pedagogical critical success factors as emergent themes for mobile web 2.0 integration (Cochrane, 2010a). These success factors were identified across the mobile web 2.0 projects by evaluating the following:

- The level of student engagement and satisfaction achieved – as evidenced in evaluative surveys and focus group feedback.
- The level of moblogging (mobile blogging) achieved by students in the courses.
- Lecturer reflective feedback.

The case studies identified the following critical success factors:

- The level of pedagogical integration of the technology into the course criteria and assessment.
- The level of lecturer modeling of the pedagogical use of the tools.
- Creating a supportive learning community
- Appropriate choice of mobile devices and web 2.0 social software.
- Technological and pedagogical support.
- Allowing time for developing an ontological shift, both for the lecturers and the students.

These identified critical success factors can be compared and validated against similar success factors and principles identified by other research projects (Barker, Krull, & Mallinson, 2005; Herrington & Herrington, 2007; JISC, 2009a). While each of these studies and reports emphasize different critical success factors for mLearning, in general they align with the factors identified by the research herein, adding validity and rigor to these findings. Table 1 compares these critical success factors with the researcher’s.

The comparison of the four lists of critical success factors indicates that most research has been put into the area of pedagogical integration, with relatively little focus on the aspects of technological and pedagogical support, and nothing on the significant time frames required for learning reconceptualisations. The researcher would suggest that this lack of emphasis upon the time required for the ontological shifts that these disruptive technologies (Sharples, 2001) facilitate is because typically mLearning projects are short-term projects and
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