



## Mobile realities and dreams: Are students and teachers dreaming alone or together?

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The use of mobile technologies and social media for teaching and learning signals the potential for ontological shifts in learning and teaching, redefining the roles of both students and lecturers. Understanding tertiary student perspectives on how they use wireless mobile devices for learning is crucial if their lecturers are to make informed evaluative decisions about how they use those same devices in their teaching. Lecturers require professional development in using mobile technologies in teaching, and institutions face challenges with infrastructure. This paper outlines a research proposal for exploring tertiary student use of wireless mobile devices for learning and the relationship of that to lecturer and institutional readiness in a blended learning environment. Cochrane's (2012) six critical success factors for transforming pedagogy with mobile Web 2.0 and Puentedura's (2012) SAMR model of technology adoption will be used as evaluative frameworks.

Keywords: Mobile learning, blended learning, tertiary education, transformative education

### Introduction

Wireless mobile devices (WMDs) (Cochrane, 2012), such as smartphones and tablet computers, are an increasingly every day item. As with other technological innovations, like the radio and the television, there has been a subsequent wave of excitement in the tertiary education sector about the potential of such devices for redefining teaching and learning. The promise of mobile learning is the potential for socially constructed learning, with learners at the centre of knowledge construction.

As with all educational technology innovations, there are concomitant issues and considerations from both teachers and students. The motivation for exploring student use of WMDs stems from the researchers' experiences of being lecturers in a blended learning environment at a private training establishment. The research will explore the student perspective on mobile learning in comparison with lecturer and institutional readiness for providing teaching and learning environments which facilitate mobile learning. Cochrane's (2012) six critical success factors for transforming pedagogy with mobile Web 2.0 and Puentedura's (2012) model of how a particular technology impacts on teaching and learning will be used to explore:

- the student perspective on mobile device use for learning;
- student expectations of lecturers and institutions to provide learning environments which create opportunities for mobile learning;
- the capacity of lecturers and institutions to meet student expectations of mobile learning; and
- the juxtaposition between student expectation, and lecturer and institutional capacity to provide mobile learning environments.

Yoko Ono said "A dream you dream alone is only a dream. A dream you dream together is a reality" (Sheff,

2000). Do students dream of WMDs transforming and redefining their learning experiences? Do lecturers dream of WMDs transforming and redefining their teaching? If so, can these dreams then be a reality? Cochrane's critical success factors and Puentedura's model in tandem may reveal the nexus of student expectation and lecturer capacity.

## **Wireless mobile device use in education**

WMDs which have internet connectivity, such as smartphones and tablet computers, are now ubiquitous (at least in the developed world). In the first quarter of 2013, worldwide mobile broadband subscriptions were approximately 1.7 billion, with that figure forecast to hit 7 billion in 2018 (Ericsson, 2013). Currently, mobile market penetration is 120 – 125% in New Zealand (New Zealand Mobile Communications, 2013). WMDs, such as tablet PCs and smartphones, are referred to as game changers in education, offering opportunities to enhance learning and teaching (Geist, 2011; Johnson et al, 2013; Pegrum et al, 2013; Traxler, 2010). This is due to their affordances of collaboration, anytime/anywhere learning, ease of use, portability and ubiquity (Pachler, Bachmair & Cook, 2010). There is much discussion about the potential of WMDs to facilitate socially constructed learning (Cochrane, 2012) for students in communities of practice (Wenger, 1998).

### **Student use of wireless mobile devices**

In higher education, mobile apps and tablet computers are already being embraced by institutions (Johnson, Adams & Cummins, 2011; Johnson et al., 2013) as tertiary student use of mobile devices is also very common (Melhuish & Falloon, 2010; Pegrum et al, 2013). While it is pertinent for institutions to understand the pedagogical value and use of WMDs in enhancing learning and teaching, it is also important to understand the student perspective. If so many students are making use of these devices in their personal lives, how do they perceive the impact of those devices on their educational experience? At the same time, what are their resulting expectations of lecturer and institutional provision of learning environments which enable mobile learning?

Students report that mobile learning offers flexibility through always having access to information and learning activities on the internet, and being able to learn whenever and wherever they are (Bradley & Holley, 2011; Kukulska-Hulme et al., 2011). Mobile use of social media also enables students to connect with other learners in a variety of ways when they are outside of the classroom (Merchant, 2012).

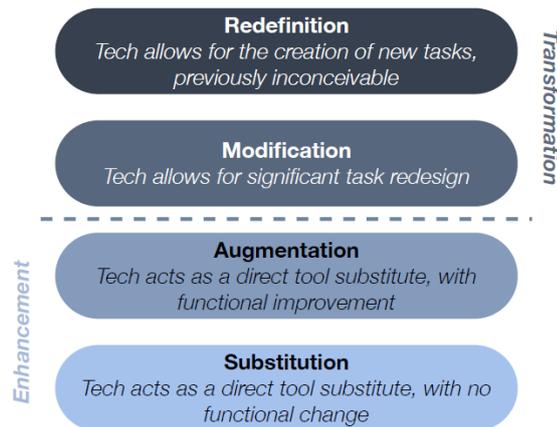
### **Mobile learning and redefining teaching and learning**

Other researchers have called for and proposed frameworks to evaluate WMDs (Traxler, 2007; Vavoula & Sharples, 2009). A current project led by the Australian Digital Futures Institute at the University of Southern Queensland is attempting to address the high pace of technological development in WMD use by generating an evaluative framework which can assess whether any mobile learning initiative is “successful, scalable and replicable” (Farley & Murphy, 2013). Based on six years of mobile learning action research projects, Cochrane identified six critical success factors for implementing pedagogical change WMD use (2012, p.9):

1. The pedagogical integration of the technology into the course and assessment.
2. Lecturer modelling of the pedagogical use of the tools.
3. Creating a supportive learning community.
4. Appropriate choice of mobile devices and Web 2.0 social software.
5. Technological and pedagogical support.
6. Creating sustained interaction that facilitates the development of ontological shifts, both for the lecturers and the students.

The most crucial of the above six factors is the sixth (Cochrane, 2012) because, through achievement of the first five, the roles of those involved in teaching and learning can be reconceptualised. The teacher and learner respectively can move “from content deliverer to facilitator of authentic experience [and] from passive participant to active co-constructor of knowledge” (Cochrane, 2012, p. 9). This reconceptualisation of teaching and learning, as opposed to the mere superficial use of technologies simply because they are available, should be the ultimate aim of adopting any technology for educational purposes.

Puentedura's (2012) Substitution, Augmentation, Modification, Redefinition (SAMR) model of technology use in teaching and learning dovetails with Cochrane's sixth critical success factor.



**Figure 1: Puentedura's (2012) SAMR model**

Substitution is the most basic form of technology use, where the technology replaces an existing tool; for example, typing notes on a tablet instead of handwriting them during a lecture. Augmentation occurs where the technology enhances the activity; for example, using a note taking app which also files notes during a lecture. Modification occurs where the technology enables the activity to be done differently; for example, using a note taking app which also allows students to communicate with each other and share questions/ideas during lectures. Redefinition occurs where the technology creates the opportunity for a task that would not have been possible without it; for example, flipping the classroom (Sams & Bergmann, 2013), by having those students view an online video tutorial and then attend their class to work together on a related project, co-constructing knowledge rather than being passive receivers.

## The research

This research aims to understand the perspectives of students on the use of WMDs in their learning. Another aim is to gauge at which stage of the SAMR model the students rate their lecturers and institution to be and to what extent that meets their own expectations of WMD use. The researchers infer there is a tension between student expectation, lecturer capacity and institutional infrastructure. The participants will be international post-graduate early childhood education students (the cohort is approximately 50) and some of the lecturers (who number 20 in total) at a private training establishment.

The students study in a blended learning environment via a home grown LMS and attend mandatory four hour tutorials once a week. The LMS houses the students' course materials and assessments. Students participate in compulsory online asynchronous discussions which are assessed and contribute to their final grades. The weekly tutorials follow the content of the online course materials.

Some of the students use WMDs during the face to face tutorials, with lecturers observing that the devices are used for note taking and information searching during group work activities. Students post in the discussion forums in the LMS for assessment purposes, but the researchers have observed that some of the students, when posting in the LMS online discussions, are referring to previous online communications they have had, which do not appear in the record of the LMS online discussions. A group of Chinese students have set up their own learning community using iChat, for example. It would be interesting to know what online spaces the students are using to communicate with each other and how they perceive the effect of their WMD use on their learning experiences. At least among those making regular use of WMDs for learning, we predict that students would like their learning environments to at least be at the Modification stage of the SAMR model.

The researchers have observed considerable variation in lecturer use of WMDs in their teaching, with them being clustered into three main camps. One group of lecturers are highly critical of students using WMDs during class, with some banning them altogether. Other lecturers are interested in using WMDs but require professional development to integrate them into their teaching. The third, and smallest, camp are experienced WMD users who encourage student use of those devices. Given that the large majority of lecturers are not using WMDs in their teaching, the first four of Cochrane's critical success factors for implementing pedagogical change through WMD use are probably not being met. This would place some lecturers at the Substitution, or at best

Augmentation, level of the SAMR model, while other lecturers would not register at all.

Wireless internet is available on campus, however, there are restrictions on various websites, with social networking sites being barred altogether. The home grown LMS, aside from the online discussions, is an online filing cabinet (Kelly, 2003), and lacks suitable plug ins that would be available and easy to install with other LMSs like Blackboard or Moodle. The aspiration is to develop the LMS, however, in house development requires considerable planning.

The research will explore the following overall questions concerning WMD use for learning and teaching:

1. To what extent do students perceive that wireless mobile devices redefine what learning is for them?
2. What is the capacity of lecturers and the institution to meet student expectations of WMD use?
3. How do student expectations of wireless mobile device use for learning, lecturer approaches to the use of those devices in teaching, and institutional infrastructure interact?

The students and lecturers will be provided a questionnaire for initial data collection. Based on the questionnaire responses, further data collection will be carried out in the form of semi-structured interviews with some or all of the participants.

## Conclusion

The researchers perceive a mismatch between student expectation and lecturer/institutional capacity. We predict potentially strong tensions between student expectation of mobile learning, lecturer need for professional development in the pedagogical use of WMDs and the institutional infrastructure. The nexus of student expectation and lecturer capacity is potentially, therefore, a disparate one. There appear then to be some barriers to overcome if we are to reach Puentedura's Redefinition stage and attain Cochrane's ontological shifts in learning and teaching. Recalling Yoko Ono's statement, can students and lecturers dream together about mobile learning and therefore make the potential redefinition of learning and teaching a reality? Or is that only a dream?

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