

Designing Mobile Learning Environments: Mobile Trials at Unitec 2008.

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ABSTRACT

This paper outlines the progress of mobile learning trials currently being undertaken at Unitec. These trials are the second stage in an action research process, following on from the first mobile learning trial at Unitec in 2007. The 2008 mobile trials are informed by the results and experiences of the first trial in 2007. An outline of the three trials and their progress is provided, along with an overview of the design and support structures being utilised. The three trials follow a common design and support process, with tutor and student support utilising principles from a communities of practice model, and are based on an explicit social constructivist pedagogy. The trials are based in three different teaching and learning contexts utilising three different mobile device platforms. Thus the trials are designed to explore the transferability of the concepts and identify common critical success factors. The trials explore the potential of mobile web 2 tools to enhance teaching and learning, in particular mobile blogging (moblogging). Outcomes of the trials will be published at the end of the academic year.

Author Keywords

Mobile, Social Constructivism, web 2, moblogging, action research, communities of practice.

INTRODUCTION

The main focus of this project is on the support and enhancement of face to face teaching and learning by using wireless mobile devices (WMDs or smartphones) as a means to leverage the potential of current and emerging collaborative and reflective e-learning tools (e.g. blogs, wikis, RSS, instant messaging, podcasting, social book marking, etc...). These are often called "social software" or web 2 tools. The project links the use of freely available mobile friendly web 2 tools accessed via a smartphone with the learning objectives of a variety of different tertiary education courses. The smartphone's wireless connectivity and data gathering abilities (e.g. photoblogging, video recording, voice recording, and text input) allow for bridging the on and off campus learning contexts – facilitating "real world learning". The research is focusing on social constructivist approaches to education (Bijker *et al.*, 1987; Lave & Wenger, 1991; Vygotsky, 1978; Wenger *et al.*, 2002) and a conversational model (Laurillard, 2001, 2007) of teaching and learning. The disruptive nature of Web 2 and mobile technologies (Sharples, 2000, 2001, 2005; Stead, 2006) facilitates a move from instructivist pedagogies to social constructivist pedagogies. The personal, social networking, and context awareness of mobile devices democratise power relationships and are best suited to open learning environments. Disruptive technologies are those technologies that challenge established systems and thinking, requiring change and are thus viewed by many as a threat to the status quo. Disruptive technologies democratise education environments challenging the established power relations between teachers and students. Mishra *et al* (2007) argue that "appropriate use of technology in teaching requires the thoughtful integration of content, pedagogy, and technology".

The addition of a new technology reconstructs the dynamic equilibrium between all three elements forcing instructors to develop new representations of content and new pedagogical strategies that exploit the affordances (and overcome the constraints) of this new medium. Similarly, changing pedagogical strategies (say moving from a lecture to a discussion format) necessarily requires rethinking the manner in which content is represented, as well as the technologies used to support it" (Mishra *et al.*, 2007).

Definitions of mobile learning have focused upon the mobility of the devices and the learners. Sharples proposes a form of Laurillard's conversational framework, excluding the teacher, to define mobile learning by its contextual and informal learning characteristics. "The processes of coming to know through conversations across multiple contexts amongst people and personal interactive technologies" (Sharples *et al.*, 2006). However, a key element in the conversational framework is the dialogue between teacher & student. In contrast to Sharples *et al* (2006), Laurillard (2007) emphasizes the teacher's input in mobile environments through good pedagogic design that facilitates continuity between the face to face and remote peer learning contexts. Her definition of mobile learning incorporates the critical pedagogical design input of the teacher: "M-learning, being the digital support of adaptive, investigative, communicative, collaborative, and

productive learning activities in remote locations, proposes a wide variety of environments in which the teacher can operate” (Laurillard, 2007).

Mobile trials

This paper reports on the progress of several qualitative action learning trials being run to investigate the impact of WMDs on teaching and learning in higher education. The anticipated learning outcomes of these trials for students are:

- i. Developing critical reflective skills
- ii. Facilitating group communication
- iii. Developing an online eportfolio
- iv. Developing a potentially world-wide peer support and critique network
- v. Learning how to maximise technology to enhance the learning environment across multiple contexts

The 2008 trials build on critical success and limitations identified in the first mobile trial in 2007. The first trial began in February 2007, with Diploma Landscape Design students implementing the use of Blogs, online image sharing, eportfolios and RSS (Rich Site Summary or Really Simple Syndication) aggregation to create a collaborative team-based project design for the Ellerslie International Flower Show (November 2007). With research funding made available in July 2007, students were provided with Nokia N80 smartphones to post to their Blogs and upload photos and videos to their online eportfolios via 3G (Third Generation cellphone data) or WiFi (802.11a/b/g/n wireless Ethernet) networks. This provided students with a flexible collaborative and context-sensitive elearning environment with which to document their Flower show projects. The first trial (Diploma Landscape Design 2007) provided a basis for informing the second trial (Bachelor of Product Design 2008). A full report of the first trial can be found on Google Docs (Cochrane, 2007a, 2008a, 2008b). The first trial highlighted the disruptive nature of mobile learning technologies, and their potential to move teachers and learners from an instructivist to a social constructivist pedagogy. The following trials attempt to better scaffold this pedagogical change and address the key technological shortcomings highlighted in the first trial. Critical success factors identified in trial one included:

- i. Introducing the mobile devices at the beginning of the trial
- ii. Getting academic staff on board early
- iii. Clearly identifying course integration and goals
- iv. Providing suitable text entry facilities (Bluetooth keyboard or handwriting recognition touch screen device)
- v. Providing both WiFi and 3G data access for ubiquitous connectivity

Students and teaching staff are provided with a 3G smartphone with a 1GB/month mobile broadband account plus a personal voice account (Students are responsible for paying for voice calls and txt messages, while the 1GB data plan costs are reimbursed by the project) for the duration of the trial (2008). Internet connectivity is also available via the Unitec WiFi network while on campus. This provides faster, free web access while on campus. As the previous trial in 2007 indicated that the limitations of text entry on the smartphones was significant in hindering student reflection, participants in the 2008 trial are also provided with a folding Bluetooth keyboard that can be paired to their smartphone. Also student interaction and collaboration were significantly increased by switching from Wordpress (Automattic Inc, 2007) to Vox blogs (Six Apart Ltd, 2007), therefore Vox is used as the blog/eportfolio host of choice from the beginning of trial2.

Smartphone selection

The choice of mobile device for each trial is based on the best fit of features with the key requirements of each course. Previous trials identified the importance of a ubiquitous connection to the Internet for student productivity across multiple contexts, and the preference of students and tutors to carry a single device (i.e. a cellphone); hence preference was given to smartphones over WiFi capable PDAs (Personal Digital Assistants). Common specifications required include: WiFi capability for free web access while on campus, 3G for fast web access off campus, a built-in camera, media playback, multitasking operating system for instant messaging capability, alternative text entry capability, support for key web 2 applications. Windows Mobile devices were not considered based on their small marketshare, instability, and inherent ‘uncoolness’ for students. Palm smartphones had been trialed initially in 2007 but had been rejected by students because of the poor quality of the built-in camera, ‘clunky’ form-factor, and aging OS (Operating System). Budget was another factor, limiting the cost of the device to \$700NZ each. To keep the cost of the devices down, the smartphones were purchased ‘unlocked’ through parallel importers.

Communities of Practice

The tutors involved in the trials have previously been involved in the development of academic peer support groups guided by a teaching and learning professional, i.e. an intentional Community Of Practice (Cochrane, 2007b; Cochrane & Kligyte, 2007), investigating the use of Web 2 social software tools and then mobile learning in education. This Community of Practice also provides a model for academics to use in their own student classes as they later integrate social software and mobile technologies into their courses. The project is guided and supported by weekly “technology sessions” facilitated by a ‘technology steward’ (Wenger et al., 2005) who is the researcher and an Academic Advisor in elearning and learning technologies in the Centre for Teaching and Learning Innovation (CTLI) at Unitec. The projects are collaborative projects between the ‘technology steward’, the course tutors, and the students on the course.

Support

As part of the role of the ‘technology steward’ for the trials the researcher has also taken on developing the technical and learning support for the trials. This has involved the investigation and purchase of appropriate smartphones and folding Bluetooth keyboards for the smartphones. The best option for providing voice and data connectivity for the trial participants (within the project budget) was investigated with Vodafone New Zealand. The smartphones were pre-configured with the wireless settings and software appropriate for the trial (e.g. Vox client, GMail client, Shozu client, Google Mobile and Moodle shortcuts etc...). Tutorial courses have been created for each trial within the Learning Management System (LMS) used by the course (either Moodle or Blackboard). Demonstration tutorials have been created using screen captures of the smartphones accessing the various web 2 tools utilized and embedded as interactive slideshows within the LMS. Support has been provided for the course tutors in the form of pre-trial tutorials on using the smartphone and web 2 tools. Finally the core support element of the trials is a weekly ‘community of practice’ investigating the use and integration of the smartphones and web 2 tools involving: the technology steward, the course tutors, and the students. Each trial ‘learning community’ is also supported by the ‘neighbourhood’ social networking feature of Vox, and the use of instant messaging for facilitating communication and a sense of social presence.

Research Questions:

1. What are the key factors in integrating Wireless Mobile Devices (WMDs) within tertiary education courses?
2. What challenges/advantages to established pedagogies do these disruptive technologies present?
3. To what extent can these WMDs be utilized to support learner interactivity, collaboration, communication, reflection and interest, and thus provide pedagogically rich learning environments that engage and motivate the learner? To what extent can WMDs be used to harness the potential of current and emerging social constructivist e-learning tools?

Data gathering consists of:

1. Pre-trial surveys of lecturers and students, to establish current practice and expertise
2. Post-trial surveys and focus groups, to measure the impact of the wireless mobile computing environment, and the implementation of the guidelines.
3. Lecturer and student reflections via their own blogs during the trial.

Pedagogical Design

The core activity of the project is the creation and maintenance of a reflective Blog as part of a course group project. Additionally a variety of mobile friendly web 2 tools are used in conjunction with the smartphone. The trials investigate how the smartphone can be used to enhance almost any aspect of the course. The project uses the smartphone and Personal Computers for the following activities (see the following table illustrating the alignment of these activities with the projects underlying social constructivist pedagogy - there is an interactive online version available at <http://ltxserver.unitec.ac.nz/~thom/mobileweb2concept2.htm>):

Activity	Overview	Pedagogical outcomes
A reflective Blog	A blog post (including media) can be uploaded directly to VOX using the Vox client on Nokia smartphones, or Shozu (http://www.shozu.com), or emailed to VOX xxxxxx@moblog.vox.com	Developing critical and reflective thinking
An eportfolio	VOX (http://www.vox.com) includes media sharing (video, audio, documents, images, links...) and linking (YouTube, Flickr etc...) as well as social networking.	Collaborative sharing of media and peer critique, also forms the basis for a career portfolio.
Email	GMail (http://gmail.com) provides a free email account that can be used on almost any Internet capable device. A GMail account also opens free access	Communication and collaboration

	to all other Google web services. The Google Java application optimises Gmail for phones.	
RSS	RSS enables subscribing and tracking/sharing of online activity. It provides a link between all your web 2 media sites. Google reader (http://reader.google.com) is a great web based RSS reader, while Newsgator (http://www.newsgator.com) also provides RSS clients for synchronisation via PC, Mac or mobile.	Collaboration
Shared Calendars	Google Calendars (http://calendar.google.com) can be shared between groups of people via invitation. Google Calendars use an open format that provides interoperability between many calendar systems – e.g. iCal on Mac OSX	Time scheduling and collaboration of activities
Image Blogging	Dedicated image sharing repositories such as Flickr and picasaweb offer more interactive features than Vox's image repository, and are linkable to Vox and other Blogging systems. Direct mobile upload to Flickr can be achieved via either the Vox client, or email. Picasaweb mobile is supported via Shozu destination uploads.	Event, data and resource capturing and collaboration. Creativity.
Video Blogging	YouTube (http://www.youtube.com) is currently the most popular video-sharing site. The mobile version supports viewing of videos online in the mobiles web browser, or via a downloadable Java client for specific phones. Uploading mobile videos to YouTube is achieved via email attachments.	Event, data and resource capturing and collaboration. Creativity.
Shozu	Shozu is a service for linking all your online mobile Blog and Media sites together via either the Shozu client application, or an email sent to go@m.shozu.com	Shozu provides links between all the pedagogies described.
Podcasting	Uploading an audio file to Vox creates a podcast episode that others can subscribe to via an automatically created RSS feed.	Interviews, critiques, reflections, shared collaboration.
Instant Messaging and Skype	Fring (http://www.fring.com) is a free Instant Messaging and Skype client for most mobile phones. It allows messaging between the most popular IM systems. It works best over a WiFi connection, or good 3G connection.	Communication and collaboration
Shared Bookmarks	Delicious (http://del.icio.us) is a social bookmarking site – allowing the creation and sharing of Internet bookmark libraries and searching via tags (descriptive keywords). Mobilicious (http://mobilicio.us) a mobile optimised version.	Collaboration
LMS	Moodle is a mobile friendly Learning Management System, hosted on a production level Unitec server. Course notes, discussion forums, and various activities can be hosted on Moodle.	Scaffolding and support
Mobile Google	A gateway into the Google Mobile services (http://mobile.google.com) via the phones web browser. iGoogle (http://www.google.com/ig/i) is a customisable mobile Google Homepage.	Links to tools that support all of the mentioned pedagogies.
Mobile Codes	Mobile Codes (Datamatrix codes in this case) provide sharing of URLs, text and messages via scanning using the smartphones built-in camera. Codes can be created and downloaded from http://mobilecodes.nokia.com and scanned using either a compatible scanning application on the mobile phone.	Scaffolding, support, collaboration.
Web Browsing	The Built-in Web Browser is very good, but in some cases Opera Mini may work better, and Opera Mini has several tools built-in (RSS feeds, synchronisation with Opera on a PC etc...)	Research skills
Document Reading & Editing	Google Docs (http://docs.google.com) is Microsoft Word, Excel and PowerPoint compatible. Documents can be uploaded and shared and edited by a group. They are viewable online in a web browser without MS Office. Docs can be created on mobile devices by emailing the document to a private Google Docs address. To edit uploaded documents you need a full PC web browser, or a full version of 'QuickOffice' on your smartphone – a mobile version of MS Office (~ \$60).	Documentation, reflection, critique, description, and collaborative document publishing etc...

Table 1. Table of trial activities aligned to social constructivist pedagogical outcomes.

2008 TRIALS

The following sections outline the current three mobile learning trials. Although each trial has a specific project focus, the trials are exploring how a mix of mobile web 2 tools can enhance the student's learning throughout their whole course. Each trial uses a Learning Management System (LMS) to provide scaffolding and support for both tutors and students. Each project also uses a different 'smartphone' device, appropriate to the requirements of the course, and each project has a specific timeline that has been negotiated between the course tutors and the researcher. The timeframe of the trials was designed to firstly familiarise the tutors with the tools and technology before introducing it to their students. Semester one goals are mainly to get tutors and students experimenting and confident with the tools, embedding them into their course workflows, followed by more explicitly targeted pedagogically designed learning experiences in semester two.

Bachelor of Design (Product)

Starting in February 2008, the focus of this trial is the development of group product design teams formed between the students and external client product manufacturers. Students must develop a commercially viable product for their assigned client. Student blogs and eportfolios are used to record and reflect on their design processes, and are made available to the client for comment and interaction. Students and staff were initially supplied with a Nokia N80 WiFi/3G smartphone and folding Bluetooth keyboard, which was later upgraded to a Nokia N95 smartphone. Students use the smartphone for recording and uploading evidence of their design process and prototypes to their VOX blog and other online media sites such as YouTube for video. Students are marked on this evidence of the design process and reflection, as well as their critique and reflection on other students' blogs via commenting. The smartphones are also used as a communication tool between students and with teaching staff for immediate feedback via instant messaging, email and RSS subscriptions.

Participants:

- i.8 students (two teams of 4) – students volunteer to participate in the trial using the provided smartphone. The average age of the students is 24, and the gender mix is 1 female student and 7 male students.
- ii.2 Course Tutors
- iii. Technology Steward (Thom Cochrane – CTLI)

Below is a generic timeline developed for the 2008 trials, based upon supporting the critical issues identified in the 2007 trial:

Project Steps	Project Milestones
1. Pre trial	✓. Brainstorm project goals and course integration with course Tutors
2. Pre trial	✓. Purchase folding Bluetooth keyboards for smartphones i. Investigate best option for providing voice and data connectivity i. Configure the smartphones with software appropriate for the trial (e.g. Vox client, Gmail client, Shozu client, Google Mobile and Moodle shortcuts etc...) i. Setup Moodle support course
3. Pre including students in trial	✓. Provide course tutors with smartphone and tutorials on setup.
4. Trial setup with students	✓. Blog and Web2 setup session with Students and Staff
5. Trial official start with students	i. Provide students with smartphone and begin weekly technology support sessions.
6. On going, weekly throughout trial	i. Support students and staff during trial via weekly 'technology workshops' i. Monitor student progress via their Vox Blogs/eportfolios
7. Mid trial and end of trial	✓. Student and staff surveys ✓. Focus group i. Data analysis and report write up. i. Re-evaluation of Trial for second semester
8. End of trial	i. Final Data gathering, analysis, and report write up.

Table 2. Typical Trial Process and Timeline.

Diploma of Contemporary Music

Starting in February 2008, this trial is centred on the music technology paper that is part of the Diploma of Contemporary Music. Students experiment with and evaluate current music creation and delivery technologies, including podcasting and sharing via blogs, eportfolios, and social networking. For semester one of the trial tutors and students have been provided with an iPod Touch (16GB) each, which will be replaced by a 3G iPhone in semester two when they become officially released in New Zealand. While the iPod Touch is not a smartphone, it has WiFi and is essentially an iPhone without the phone or camera capability, thus it provides a limited connectivity version of the iPhone until they are available. The iPod/iPhone includes a virtual keyboard for text entry as part of its touch-screen interface. Blackboard was used as the Learning Management System for providing tutorial support for the project. The Trial is initially examining how the iPod Touch can be used as a communication and collaboration tool between students and staff (using email and instant messaging) and as a tool for accessing, editing and commenting on their online blogs and media eportfolios. In semester two, the iPods/iPhones will be integrated into the course delivery and assessment as part of a PODcast and VODcast sharing project with another similar course at another New Zealand institution. This will include elements of peer critique and review recorded on their VOX blogs.

Participants:

- 11 students – students volunteer to participate in the trial using the provided iPod Touch. The average age of the students is 22, and the gender mix is 6 female student and 5 male students.
- 2 Course Tutors
- Technology Steward (Thom Cochrane – CTLI)

Diploma of Landscape Design

This trial has a focus on an elective experiential trip to Japan in September 2008 and is set to start in semester two 2008. The students are required to create a reflective journal of their trip and it's influence on landscape design ideas in New Zealand. Because of the expense involved in the Japan trip, the average age of the class is much higher (55) than the other trials, as the younger students cannot afford the extra cost of the trip. Participants are provided with a SonyEricsson P1i smartphone plus Bluetooth folding keyboard for text entry. Moodle is used as the support Learning Management System for this trial. The smartphones will be used to record, upload and comment on photos and video of their landscape design projects, including sourcing plants and ideas while off campus, and in Japan. The smartphones are also used for communication and collaboration via email, instant messaging, and RSS subscriptions to each other's blogs.

Participants:

- 8 students (two teams of 4) – students volunteer to participate in the trial using the provided smartphone. The average age of the students is 55, and the gender mix is 6 female student and 2 male students.
- 2 Course Tutors
- Technology Steward (Thom Cochrane – CTLI)

DISCUSSION

The three 2008 mobile learning trials are still in early days, but good progress is being made. The amount of support required to initiate and nurture the three groups of students and tutors has been more than was envisioned. Nurturing successful intentional Communities of Practice requires significant time and effort (Langelier, 2005; Wenger et al., 2002). However this has been minimised by having a common design to the three trials that has been developed from the experiences of mobile and web 2 projects over the past three years. The partnership between the researcher and the three groups of tutors has been built-up over this period as well - initially through communities of practice investigating the use of educational technology, and now this model is being loosely used to create learning communities consisting of the researcher, tutors, and their students. The challenges include modeling the pedagogical use of the technology to the students, and making the learning outcomes explicit for the students while allowing the flexibility for each group to creatively experiment and develop uniquely.

Using an action research methodology for the trials provides the flexibility to critique, reflect on, and modify the projects as required.

The 2008 trials have built upon the foundation laid by the first mobile trial in 2007 (Cochrane, 2007a, 2008a, 2008b), which found that:

- A context spanning social-constructivist learning environment is facilitated.
- Teachers require a new pedagogical toolkit to capitalise on this environment.
- Students require explicit scaffolding in this environment.
- The capabilities of affordable smartphones are constantly increasing, as is the availability of free mobile Web2 services. These can be matched to create highly collaborative and motivating learning environments.
- Good pedagogical design of contextual learning environments is essential.
- Tutor professional development and technology support is critical.
- An ethos of the educational use of mobile web2 technologies needs to be developed within the teaching and learning environment.

- Technology support for students is critical and must be integrated early into the course.
- Student preferences must be considered when choosing appropriate wireless mobile devices.
- Significant time is required to develop skills in the use of the technologies for both students and tutor

Feedback from the 2008 trials has so far been very positive. While initially finding learning the smartphone interface and variety of web 2 sites/tools daunting, students integrated their use into their everyday lives. Access to online media has been significantly increased by the addition of a 1GB per month 3G data plan for each member. While the 2007 trial participants were limited to WiFi access and pay-as-you-go 3G data (which was far too expensive to utilize), the 2008 participants have found 3G data to be significantly faster than the institutions WiFi network. This has led to a significant increase in the use of real-time multimedia on the smartphones. Students particularly valued the ability to capture and record ideas and content using the smartphones multimedia capabilities (Cochrane & Bateman, 2008b). They uploaded significantly more media (Mainly still images) to their online eportfolios than actual blog posts. There is evidence of careful selection of the media that students finally add into their blog posts for display and commenting. Several students preferred to VODCast (record and upload a video monologue) rather than post text based reflections on their blogs. The ability to make video demonstrations of design prototypes and upload these to either VOX or YouTube was particularly utilized by the Landscape Design and Product Design students. Unfortunately the iPod Touch does not incorporate a camera, and the iPhone is currently incapable of recording video, however Diploma Contemporary Music students have uploaded still photos of their performances. Watching YouTube videos on their mobile devices is a popular activity, especially with the N95 and iPod Touch which support video out to a large screen or video projector. Least valued by students was the ability to access course content on the smartphones. This is a reflection on the underlying pedagogy chosen for the trials (Social constructivism) where a conscious decision was made to focus on communication, collaboration and user generated content rather than repurpose course content for small screens. Students who own laptops have used the smartphones to complement their use of their laptops, and in some instances replaced the use of their laptop with their smartphone while traveling. Although a small number of the 2007 Diploma Landscape Design students rejected the idea of purchasing their own smartphone, the 2008 Bachelor of Design and Diploma Contemporary Music students were unanimous in indicating they would purchase their own smartphone. The second Diploma Landscape Design project is set to start in semester two 2008.

When asked in what situations the WMDs were most effective, students replied

As a mobile computer – instead of a laptop, and as a communication tool for a team who are in different places all the time, too busy to meet, to transfer information, pictures, documents etc. (Diploma Landscape Design student 2007)

Spur of the moment, spotting something inspirational, documenting an idea when a PC is not around. (Bachelor of Product Design student 2008)

It's the convenience of the small device, nice and handy fits into the pocket. No matter where I was I could use it, spare time having lunch, toilet, even in the classroom while the teacher wanted some information about a particular person. At school looking for information on the net, leisure times, looking at other classmates' webpage's, blog and youtube videos etc... (Diploma Contemporary Music student 2008).

While integration into the courses required significant rethinking of staff pedagogies and assessment procedures, all the staff involved in the trials were very positive at the results (Cochrane & Bateman, 2008a; Cochrane & Clifflin, 2007).

Once I learnt how to use the technology I then moved on to be able to work with the students. I modified an elective exercise that we didn't formally teach, but was an opportunity for students to put their studies into practice by creating a design for the Ellerslie Flower Show. We decided to make it a course, that doesn't have to have content, but a process, synthesizing all aspects of their Landscape Design course and we can bring in all these learning technologies to support it, including blogs, wikis, and an eportfolio instead of presenting it the traditional way. So in 2006 we trialed it and have built on the idea since then. Thom helped us along the way with this... The Community of Practice that was fostered and the new skills that the students gained in the e-world were fantastic and contributed to them doing so well. It's been a great success and we get savvier every year continuing to experiment with new technologies. Students are feeling more satisfied with the capabilities of the tools they are using and I'm going to keep learning too! (Diploma Landscape Design staff 2007)

It isn't 'easy' working in this way but it is immensely valuable and exciting. I think that it would be very hard to go back to traditional teaching only methods now I have begun to use blogging and mobile blogging. (Bachelor of Product Design staff 2008)

WMDs are very effective for motivated students who need to communicate for group projects.

I would now be better able to integrate the WMD into assignments rather better. (Diploma Contemporary Music staff 2008).

The final results of the current three trials will be evaluated and reported upon at the end of 2008.

CONCLUSIONS

The mobile web 2 trials have been designed using explicit social constructivist pedagogy, with freely available web 2 tools being integrated into three different courses. Flexible multi-contextual learning environments are being facilitated, and the technology steward is supporting the tutors involved in the three trials in their discovery of new pedagogical toolkits. Using an intentional Communities of Practice model to form a strategic element in the support structures for the trials is proving successful, but it is yet to be seen whether it can be sustained in the longer term. It is hoped that the potential success of the trials will lead to further uptake and integration within the institution, and provide valuable insights for the growing international mlearning community.

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