



Evaluating an institutional blended & mobile learning strategy

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The University of Western Sydney is investing in three levels of learning technology provision: institutional, academic-led and student-led. A new strategy launched in 2012 included infrastructure and software upgrades, recruitment of more staff to assist in blended curriculum design within disciplines and, from 2013, the issue of iPads to all new undergraduate students and to teaching staff. This paper describes how these initiatives are being evaluated, to gather evidence of the initial impact of the investment on the student learning experience and on the capacity of staff to provide quality teaching and curricula.

Keywords: blended learning, mobile learning, institutional strategy, evaluation

Context

The strategic vision of the University of Western Sydney (UWS) is 'bringing knowledge to life' among the growing and diverse population in Greater Western Sydney, across six campuses. In practice this means a focus on providing access pathways, support for learning skills development, and designing curricula that integrate learning with the life of the local community. UWS draws almost a quarter of its students from low socioeconomic status (SES) backgrounds. Many UWS students are time-poor. They often have work and/or family commitments, and may need to travel some way to reach a campus. So an effective and flexible blend of campus and online learning is essential.

The UWS definition of blended learning refers to "... a strategic and systematic approach to combining times and modes of learning, integrating the best aspects of face-to-face and online interactions for each discipline...". Figure 1 shows schematically the key components of the University systems involved (dotted boundaries): campuses and within them teachers and students, in class or using online tools. The brown arrows indicate where these technologies can support learning interactions, internally and with the wider community.

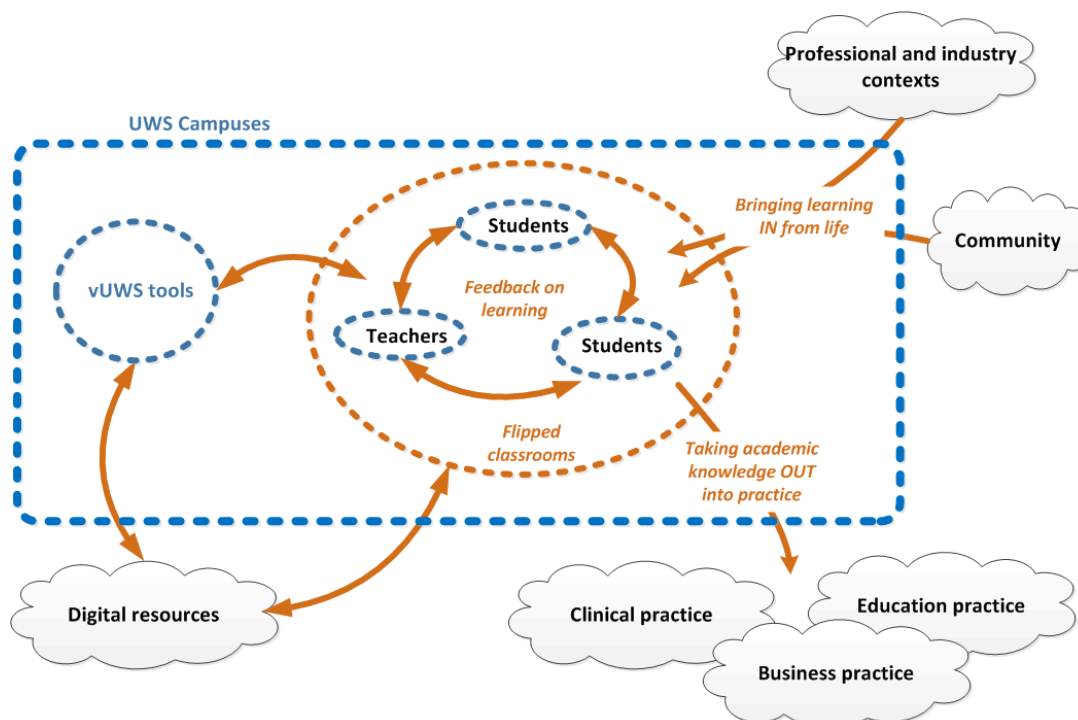


Figure 1 Where technology can help in ‘bringing knowledge to life’ in the curriculum

As well as an institutional online learning management system and extensive wifi provision on its campuses, UWS has also provided students and staff with iPad tablet devices. At the same time there has been a substantial investment in additional support for blended learning design within academic disciplines. Teams of blended learning designers and advisors based in Schools complement the work of a central team – a total of about 50 blended learning specialist staff working alongside curriculum development and learning skills support staff. The three objectives of the UWS Learning and Teaching Plan 2012-2014 are:

Students –optimize student access, engagement and success

Curriculum – implement a curriculum characterized by innovation, engagement and excellence

Quality – build staff capacity to engage in quality teaching.

Building on previous research

A large-scale survey of students across three Sydney Universities in 2010 provided information on student expectations and experiences of learning technologies. Analysis of the results (Gosper, Malfroy, & McKenzie, 2013) led to identification of three aspects of university technology provision:

4. institution-led (wifi, IT infrastructure & support, online learning management systems, provision of computers and tablets, etc.)
5. academic-led (how teachers are using the available tools to support learning activities)
6. student-led (how students are choosing to use their own technologies, such as their personal mobile phones and laptops, for educational activities).

A follow-up qualitative analysis identified where institution-led and academic-led initiatives have begun to address some of the student expectations (Russell, Malfroy, Gosper, & McKenzie, in press). In 2010 students reported inconsistent quality in their teachers’ use of technologies for learning. Many students also asked for better wifi and support for use of mobile technologies on campus.

The advent of tablet technology such as iPads has further focused attention on mobile technologies in learning and teaching. However, the iPad was only released in 2010 and so research on its educational use is still in its early stages. Murphy (2011) describes six main capabilities of tablets in the university setting: ubiquitous access to course and subject materials; enrolment and administration; peer-to-peer and peer-to-education collaboration; content generation; research/material yielding; productivity enhancement.

The current initiatives at UWS, including the provision of iPads in 2013, are aiming to address simultaneously all three aspects of learning technology provision. For example, the iPad roll-out required enhancements to

institutional infrastructure and IT support services and also to teaching staff development. Issuing iPads to students gives them more options for personal technology use. As part of the evaluation of these initiatives we are looking for evidence of how the students' reported experiences have changed since 2010. Figure 2 illustrates how the evaluation feeds into the core learning and teaching objectives.

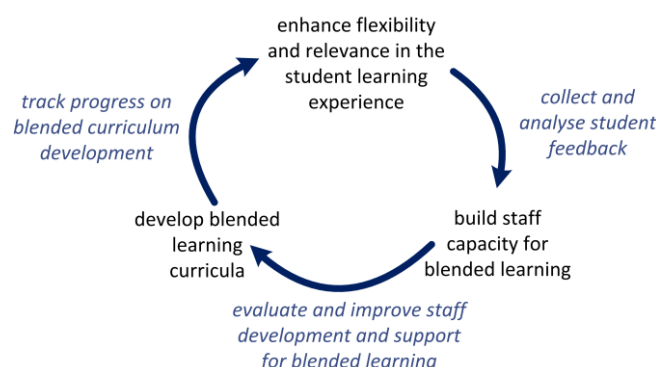


Figure 2. Three components of UWS blended learning evaluation: student, staff and curriculum.

The full benefits of the strategy may not flow through to curriculum design until 2014-5. But the provision of iPad tablet devices along with improved institution-wide learning technology systems in themselves will enhance students' ability to access learning resources and activities. Many teachers are also already introducing new ways of interacting with 1st year students, making use of mobile learning technologies.

Research methodology and methods

Overall this is a pragmatic evaluation exercise designed to provide evidence of how the introduction of blended learning design and mobile learning technologies is influencing student learning experiences and outcomes.

Some specific research questions related to initiatives begun in 2012 are:

1. How has the 1st year student experience of technologies in learning at UWS changed since 2010?
2. How is the availability of iPad devices now influencing 1st year students' learning experience at UWS?
3. To what extent is blended learning already contributing to student learning experiences and outcomes?
4. How well are academic staff able to use online and mobile technologies to good effect in their teaching?

The research will adopt a mix of quantitative and qualitative methods, broadly following the triangulation design described in *Designing and conducting mixed methods research* (Creswell & Plano-Clark, 2011, p 63). In this design, qualitative and quantitative data are gathered together, initially analysed separately and then interpreted in combination, to provide explanations of how the institution-led and academic-led technology provision is influencing student experiences and outcomes.

The student experience

The primary data for gauging all aspects of the impact on student experience will come from anonymous survey of 1st year undergraduate students in September of 2013. This will use a subset of the 2010 survey questions, and then compare the results with corresponding 2010 responses. The survey includes two open-ended questions, identical to those used in 2010, which can be run through an automated thematic analysis developed for the 2010 data analysis (Russell, et al., in press)

To add more contextual depth to the institution-wide data, we are running discipline-specific focus groups with 1st year students. We may also be able to use BlackBoard learning analytics data to compare the reported tool use with system-generated data on use of tools in 1st year undergraduate study.

The staff experience

There will be individual interviews with a cross-section of teaching staff who are teaching 1st year students in 2013, and/or preparing to teach 2nd year students in 2014. The interview questions mainly focus on research question 4, and will aim to tease out whether the various support resources now available for blended learning are reaching their targets, and if additional staff support is required. Figure 3 shows a flowchart of how the various components of the research data and analysis will fit together.

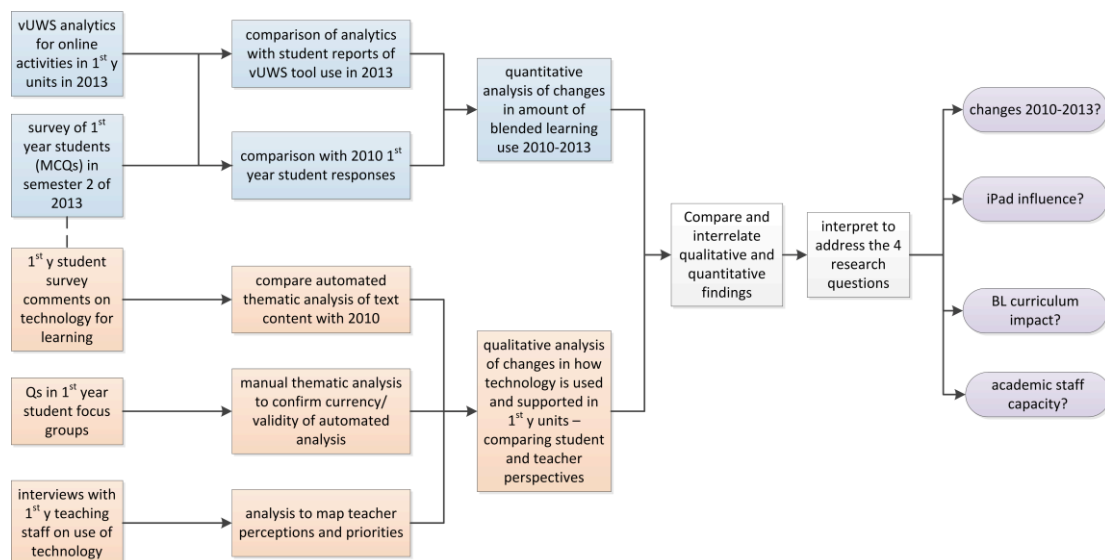


Figure 3. Summary of mixed method research process

Preliminary results and discussion

The 2010 survey asked students how frequently they used various online tools as part of their course requirements. Figure 4 shows an example of responses from 1st year UWS students on how often they used, and how often they would like to use, particular web-based resources.

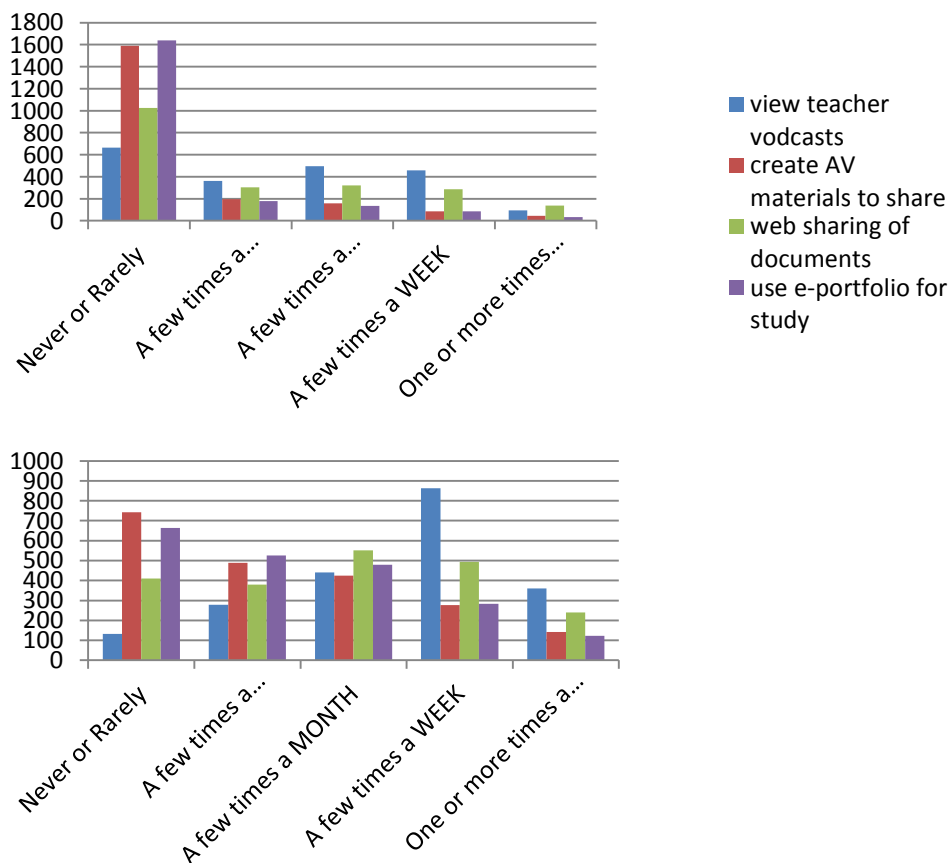


Figure 4. 1st year UWS students' responses in 2010 on how often they use web resources (above) and how often they would like to (below)

A word frequency query in NVIVO across the 2074 responses from UWS 1st year students to 'describe the most important ways that technology has assisted your learning at University' resulted in: **access, information, online** and **vUWS** (the UWS online learning management system) as the most frequent words.

A similar query run on the responses to 'describe ways in which the University could use technology to better support your learning' resulted in: **more, wireless, computers** and **internet** as the most frequent words. Thematic analysis of the text responses to these two questions showed a significant proportion of comments indicating that some teachers were not using the technologies as effectively as others (Russell, et al., in press).

A similar analysis of the corresponding 2013 data on use of web resources and tools will be available in early November 2013. So the conference presentation will include a report on the patterns of online learning activity in 2013, compared with 2010 student expectations. Preliminary data from staff interviews will also be available to identify priorities for continuing staff and curriculum development. Longer-term, the evaluation will provide a comprehensive tracking and adjustment of the institutional strategy for blended and mobile learning as it unfolds.

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