'It's not the university experience we were expecting': digitally literate undergraduate students reflect on changing pedagogy.

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This paper reports from a 2012 small-scale study with campus-based undergraduate students at an Australian research-focussed university. The students' ownership of learning technologies was examined alongside their appreciation and experience of online learning opportunities. It came to light that a number of the students having opted for a campus- based experience were less willing to embrace fully the wider blend in learning that the learning environment provided. These digitally competent and literate students held a somewhat stereotyped expectation of university teaching as being a didactic process within a classroom with some blend of online learning activities.

The students typically owned a range of personal technologies and they were avid users of one particular social network – Facebook. This preference for a single social network above all others has been found to be true in both prior UK studies (Ofcom, 2012) and US experiences (Dahlstrom, 2012). The students generally considered themselves as consumers of technology to support their learning rather than as engaging with university LMS to transform their learning approach. Suggestions for improving the scaffolding of learning are made.

Keywords: undergraduate experience, technology ownership, pedagogy, social media, LMS

Introduction

With the current emphasis through secondary education on using technology to support learning (see for example the use of iPads in the PEW report, 2012) it is perhaps taken for granted that students embarking on university study will know in advance both the types of technologies they will encounter and the styles of pedagogy which they will meet in their tertiary studies. Students' prior experience of education however has typically been undertaken in a small-class environment, even if the school or college attended before 18 years of age has a large number of students. Students will have been known personally by their teachers and their progress carefully monitored. Starting university, whether it is a research-based or teaching–focused institution indicates a change of learning environment and for many the opportunity to use more technology to support their studies. The differences between studying at university and their prior educational experience have led to research in the UK *inter alia* on supporting students through the induction process and into settling in to university and has indicated the benefits of providing some scaffolding in their early weeks (Lefever & Currant,2010). However it is not just the social transition from the small-scale home environment to the larger-scale environment of university which will be different but also the approaches to pedagogy and technology support for studying.

Learning management systems (LMS) vary in popularity and availability in pre-university institutions from one country to another but the students who took part in the survey described below had little prior experience of their use. These digitally literate students owned or had access to a wide range of pieces of technology for studying and for personal leisure. They were technically competent and expressed themselves keen to use technology to support their studies but appeared generally unprepared for the changing pedagogy they would

meet. The changes which have taken place in many areas of university pedagogy following the introduction of increased use of online materials and a constructivist approach (Dyke et al,2007)leading to collaborative working online and on-campus, appear to have taken some incoming students and possibly their educational advisors by surprise leading to a student approach which can be described as passive and consumer-focussed among undergraduates. In addition the expectation of an approach to pedagogy which adopted a learner-centred paradigm (Barr and Tagg, 1995) was rebuffed in the conversations noted below as not being a part of the experience they had anticipated.

Methodology

A voluntary sample of undergraduate students (n=25), at an Australian university undertook a survey which asked them about their personal technology ownership and their use of technology for their studies. Posters were placed in both an Engineering department and an undergraduate residential college in advance to highlight the timing of open sessions at which students were invited to join a focus group where they would discuss their use of technology to support their learning and to complete the technology ownership questionnaire.

The demographics of the survey and focus groups were: 9 male students and 14 female students. 12 students were studying a range of Engineering degrees and 13 were from programmes across all other faculties. There were 14 1st year students, 3 were on their 2nd year and 8 students were final year undergraduates, 24 of the students were aged between 18 to 21, 1 student was aged between 25to30.

All students completed the questionnaire prior to taking part in focus groups which then introduced a discussion about their use of technology while studying at the University. The survey included questions relating to their prior digital competence and covered their personally owned technology and the technology (the hardware and software) that they might use to support their studies. The immediate source of the questionnaire was from the ECAR studies of student use of technology in HE with a small reduction in the types of technology included (Dahlstrom for Educause, 2012; Salway and Caruso, 2008). The survey is typical of those used in other institutions for measuring student use of technology for learning, for example the University of Edinburgh's annual Freshers' survey (Haywood et al, 2008).

Some quantitative results from the surveys are presented below in graph formats. The focus groups were recorded and transcribed and the results anonymised. The qualitative data from the focus group recordings was analysed to identify salient comments for each question and student opinions from the focus groups are presented under the section of the 'Student Voice' below.

Survey results for student ownership of technology

In this short paper the student ownership of technologies for learning will be primarily considered rather than their use of specific software. Figure1shows the percentage of the students in the focus groups who owned each type of technology. There was 100% ownership of a personal portable computer and a memory stick or portable hard drive. While the ownership of iPads was relatively low at 24%, there was high ownership of iPods (76%) and iPhones (56%). Engineering students owned on average nine items of technology while non-engineers owned somewhat fewer items. Average ownership over 25 students was eight or more items of technology. They owned 35 mobile phones between them: 14 owned an iPhone, 8 owned an Android device, 4 owned Blackberries. There was higher ownership of gaming devices among all Engineers (66%) but ownership was much lower among female non-Engineers (23%). Thirteen females owned a webcam but only three male students owned one. At the other end of the scale, ownership of e-readers was very low since at the time of the survey they were not marketed widely in Australia.
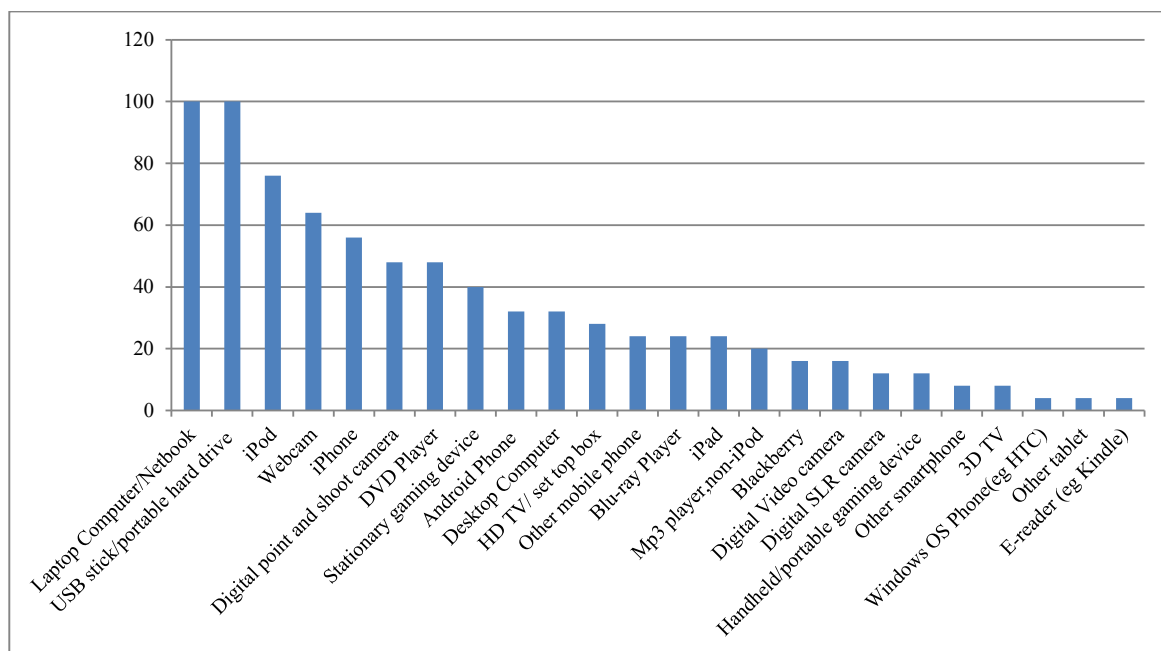
Figure 1Percentages of Student Ownership of different technologies for learning

Student Opinions of Digital Competence

The students in the survey displayed high levels of digital competence which matched the high ownership levels. If they did encounter problems in using their devices they would typically ask a friend for help. The ubiquitous nature of their social networks meant this was easily achieved. A standard comment from this 'digital resident' generation (White & leCornu, 2011) was:

'We just know how to adapt to any sort of technology' Female student, non-Engineering

This was in comparison with their perception of the competence of their parents, who would typically be part of the 'digital visitors' generation (ibid):

'Our parents' and grandparents' generations struggle with it [technology].'

In terms of the competence of their academic tutors, the students were critical when the former displayed a lack of knowledge and an associated unwillingness to experiment. They reported a few academics as digitally competent, including the example of a tutor using Twitter to keep in touch regularly with students and the creative interactive use of Facebook. They also offered too many examples of academics reluctant to use available institutional technologies, mainly from the non-scientific subjects.

'They can't record the lectures because they don't know how to do that …but it's a huge help to us to have it recorded because some lecturers talk [so]fast you cannot keep up.'

Student comments about using technology for learning and its impact on their experience of pedagogy indicated how much they had come to rely on a blend of online and face-to-face engagement but it also highlighted a trend (worrying for some quarters) towards a single commercial product, Facebook instead of the university LMS provision. The lack of flexibility within the LMS for accommodating very large group sizes had persuaded one Dean to move his School's academic support for a first year cohort (in excess of 1200 students) onto Facebook instead. These student comments reiterate their reliance on the social media:

'Facebook is good because it is regularly updated within the hour or two. More people respond to it'

The overall perception by students was that many support materials were made available online which had led to a change in pedagogy and a blurring of previous boundaries between academic and personal spaces.

'My use of Facebook has increased exponentially since coming to uni – not really for social stuff but mainly for uni work. I have so many groups now on all these different things for my courses.'

The students' reflections included comments on other changes in their experiences of pedagogy as they moved from the small-scale to a more 'industrial-scale' of learning with a wider use of technology for keeping up with studies.

'At uni, you can't just get your marks off a teacher here - the size is the main difference'

The students' description of university technology use indicated a wide variation in the use of learning technologies across the institution with overall greater use being made of a social network that was perceived to be 'free of cost' but easier to access and use for supporting their studies, when compared with the university's investment into the LMS. Here the LMS was not being seen to necessarily support the online group working and the changing pedagogy of the institution. Additionally the commitment for any HE institution to maintain an agile, flexible and continually updated version of their LMS is a significant drain on resources. While there was a clear preference to use Facebook as the dominant social network for working in groups, this was affected by the students in this university lacking confidence to use the local version of Blackboard:

'Facebook has provided an avenue for support and to discuss (and I don't actually like Facebook but it is really useful). If they set up Blackboard with blogs and so forth people could use that if there was a student private area on Blackboard.'

Discussion

This paper has begun to consider student ownership of technology used for learning within the context of the development of a blend of online and campus-based learning and a more constructivist approach to pedagogy in HE. The current context is one where student ownership of multiple technologies is widespread and a wireless campus environment is widely expected. The results of the inquiry into their software use identified that they frequently access online material through YouTube and similar sources, but rarely post any self-generated material to these sites.

Familiar pedagogical patterns which students have observed at school of a didactic style of teaching in small class cohorts with the teacher imparting ideas and knowledge and a close guidance of student work, was the stated approach that these students expected to be carried on into their university experience. Now they were experiencing a 24/7 approach to learning, where their materials were available online, anytime, anywhere. At university the students experienced a shift in pedagogies to a blend of large-scale classroom and online group working with far less direct contact with the knowledgeable academic expert. In order to manage the complex social side of their learning they had turned almost unanimously to a single social network to provide the support they sought and away from the university provision. The need for more direction on how best to adapt to studying in the new environment is evident while not forgetting that the institution has a responsibility in supporting student learning and offering direction or scaffolding of their learning (Vygotsky, 1986).

There is evidence of a mismatch between students' widespread access, ownership and adaptability to technology and their current experience of the LMS, which they had not readily adapted to, since it was acceptable and sometimes encouraged to use Facebook instead. While some academics still remain aloof from engaging widely in technology in their teaching, their students use technology as an essential part of their lives and demonstrate a blurring between the personal and study areas of their lives through their use of social media. There are in the author's opinion concerns to raise where a university allows widespread use of inherently insecure social media for students to support their learning, instead of investing further in the facilities of the LMS and in staff development. A commitment to supporting the LMS with its future opportunities is recommended at institutional level especially as students are increasingly communicating via their mobiles. Academics could be making far wider use of the LMS and of the mobile opportunities that platforms such as Blackboard now offer to mirror the facilities in group work and the swift response to postings sought by students, as they noted above, if local support for academics and wider staff development are taken up.

The student perception can be summarised as seeking a campus-based university with an expectation of learning that would remain teacher and pupil-focussed and closely guided. It should be possible to fully integrate student use of the LMS on arrival, with greater scaffolding of their learning to ease them into the changing pedagogy of HE and offer the best of a blended approach of online and classroom-based activities with reliable and flexible support. Their learning can then take place in a secure environment with proper archiving facilities without students' risking losing access to their academic material at a later stage of their careers. Further research to

explore students' experiences of changing pedagogies and the digital competence of staff and students is planned.

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Please cite as: Jefferies, A.L. (2013). 'It's not the university experience we were expecting': digitally literate undergraduate students reflect on changing pedagogy'. In H. Carter, M. Gosper and J. Hedberg (Eds.), *Electric Dreams. Proceedings ascilite 2013 Sydney*. (pp.422-426). https://doi.org/10.14742/apubs.2013.1488