

Unlocking Potential: harnessing the pedagogical benefits of e-learning

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Introduction

In October 2008 the London Metropolitan University published its draft Strategic Plan (2008) which places e-learning at the heart of its development over the next 10 years. Definitions of blended learning and e-learning are diverse and this paper deliberately avoids such debates. Put simply, technology (including e-learning) enables us to:

- Extend the classroom
- Enhance the classroom
- Replace the classroom

How and why we wish to do this should be anchored in well accepted principles of good teaching and learning not in technology. Thus, decisions about which of the above routes should be taken, and details relating to the nature of the 'blend' of face-to-face teaching and e-learning, should be taken by subject lecturers/groups and will have at its heart pedagogy and the student learning experience. In this context, this paper selectively reviews some of the recent literature in this area with the goal of highlighting some of the potential benefits of using e-learning for enhancing learning, teaching, assessment and retention.

Background

London Metropolitan University has a history of innovation in learning and teaching, and the opportunities offered by e-learning were capitalised on by the management team with the building of the 'technology tower' and by initiating associated pilots for development. This provides an example of the estate expanding to cope with e-learning, whereas recent technological innovations (e.g. wi-fi) may well see that trend reversing. One example of pedagogical innovation that drew on this first wave of e-learning resources is provided by WebCT work that I led on in the then University of North London in 1999/2000. The study (Cook, Leathwood and Oriogun, 2002) involved a WebCT online conference where 120+ students were split into groups of 3-6 to engage in online critical debate as part of assessed work. There were about 1500 contributions to the debates over 10 days. One result was

that 70% of students stated that the approach taken was successful at getting them involved in critical debate (the 1999 score for the same question was 56%). More recently, in addition to the successes of the Learning Development Unit, the Write Now and Learn Higher CETLs, in the technology remit we have seen the successful work of LTRI (<http://www.londonmet.ac.uk/ltri/>) and the Centre for Excellence in Teaching and Learning in Reusable Learning Objects or RLO-CETL for short (<http://www.rlo-cetl.ac.uk/>). The Science Centre has invested heavily in technology to transmit science lab work to a large local audience. The University has invested in a robust and stable VLE (Weblearn) and is making significant progress via TLTC training with familiarising academic staff as to the pedagogic benefits of the various tools.

London Metropolitan University has a diverse student population. For example, around two-thirds of our students at London Metropolitan University are mature learners, often with English as a second language. Having a high proportion of mature learners changes the typical learning dynamic, as the students very often attend for lectures only. Research by Pfeiffer et al. (2003) showed that by week eleven of their first semester, only 19% of year one students had joined a student society and only 44% had attended a social event at the University. The students experience financial hardship, and many are trying to combine full-time study with nearly full-time work, with an average of 15 working hours per week. Furthermore, London Metropolitan University has a persistent challenge in terms of retention, progression and achievement. Over recent years various approaches have attempted to reduce the significant number of students that leave the University having prematurely ended their studies. From a University-wide perspective, these initiatives appear to have met with limited success. Consequently, it seems timely to look at how e-learning used in a blended learning context can assist in enhancing the student learning experience with an eye in particular on improving retention.

Why change to blended e-learning?

English universities that are currently performing well in terms of embedding e-learning include Liverpool, Derby, Staffordshire and Hertfordshire. For example, the University of Hertfordshire's Blended Learning Unit (www.herts.ac.uk/blu) provides various resources which include their Benchmarking and Pathfinder (CABLE) activities. However, a recent HEPI report (Sastry and Bekhradnia, 2007) noted that assessment and feedback is the category which respondents to the National Student Survey rate as weakest. Given the current and local debate raging about the National Student Survey, we need an argument that offers an insight into the role of technology. Indeed, it may be that English universities eager to acquire a reputation for rigour in undergraduate provision would be better advised to work on assessment and feedback as a means of increasing private study, rather than to provide additional teaching hours. When asked in the survey (Sastry and Bekhradnia, 2007) what would improve their academic experience, students in the HEPI survey

called for smaller teaching groups over an increase in the number of teaching contact hours a week. However, students rated training for lecturers even higher than smaller teaching groups, suggesting that it is the quality of the teacher which concerns students more than the character of the teaching occasion.

E-Learning, if used judiciously and by well-trained tutors, can help improve feedback and reduce staff time spent certain activities, thus freeing up time for smaller groups. David Nicol has lead the way in this area:

Most ICT implementations just add extra cost if they are not properly grounded in a research-based, and convincing pedagogy. ICT should support the delivery of some powerful teaching and learning ideas (pedagogy). To my mind this requires transforming vague ideas about learning into defined principles that are easy to understand and that can guide implementation. For example, I was interested in how formative assessment could support the development of learner self-regulation and lead to learning gains. I identified some principles of assessment, clearly articulated them and then used technology to support their implementation in powerful ways. All local projects had to implement subsets of these principles to be funded and supported.

David Nicol (Personal communication, April, 2008)

An example of the formative assessment work by Nicol is in the area of a first-year Psychology class, redesigned as part of the REAP (<http://www.reap.ac.uk/>) project. Here a single teacher was able to organise rich and regular peer feedback dialogue (a REAP principle) for 560 students on a series of online essay-writing tasks resulting in significant learning gains compared to previous years. Specifically:

In many cases, the redesigns did not involve a reduction in academic workload. Instead, there was a redistribution of effort with staff spending more time supporting learner-led interaction with content with less time being spent on lecturing or traditional assessment activities. For example, Psychology reduced lectures by 50% but used that time to support student interaction through online essay-writing tasks with facilitated and monitored peer feedback. Students spent more 'time on task' and the mean exam mark improved from 51.1% in 2005/6 to 57.4% in 2006/7. In Educational and Professional Studies time spent by teachers on assessment activities was reduced while peer feedback processes were given increased support. Here a 10.4% gain in mean exam marks was evidenced compared to 2005/6.

(Nicol, 2007, p. 2).

In another REAP project, first-year Mechanical Engineering class with 250 students, teachers were able to cut homework marking in half, saving 102 hours, by encouraging students to engage in self-assessment (another REAP principle) using an online homework system without any decline in exam performance. Specifically:

Some assessment redesigns involved the replacement of face-to-face activities with online tasks where students could practise specific skills at their own pace. Such redesigns were characterised by reductions in staff workload without any loss (and often gains) in learning quality. For example, in French, tutorials were reduced by 50% and replaced with online tasks: a saving of 200 hours in staff time was shown while the exam failure rate was still reduced from 24% to 4.6% compared with 2005/6. Mechanical Engineering used an online homework package to reduce homework assessment workload – this department saved 102 hours in staff time over the year without any drop in exam performance.
(Nicol, 2007, p. 2).

Furthermore, the recent JISC (2008) report on ‘Exploring Tangible Benefits of e-Learning’ provides various other examples of student learning gains, for example:

In the Glasgow Scottish History case study, the introduction of e-learning coincided with an overhaul of the course. The specific role of e-learning is thus difficult to quantify but results have nonetheless been transformed: the proportion of students who finished with an A grade overall leapt from 1% to 15%, while the number of ‘fails’ (less than D) fell from 12% to 5%. Glasgow University Department of Theology and Religious Studies has also seen an improvement in pass rates since the adoption of the VLE to support courses with previously good pass rates of 90% now increased to 100%.
(p. 21)

Indeed, there is emerging evidence that e-learning can assist with improved student retention:

*There is clear evidence of **improved student retention** as a result of the improved personalisation and mentoring opportunities afforded by e-learning applications such as e-portfolio systems. We have seen these benefits demonstrated in areas such as Nursing with a high proportion of non-traditional learners where attrition rates are traditionally high. An improvement of only 1% in retention across the sector would, even at the lowest rates of funding, be worth over £132 million per annum to institutions.*
(JISC, 2008, p. 31, my bold)

In addition, research shows that students who work in groups develop an increased ability to solve problems and evidence greater understanding of the material (Stanford, 1999). There is emerging evidence that e-learning can be used to support this effective form of collaborative learning and this avenue should be explored (e.g. see Coultas et al., 2004).

Conclusions

Above I have outlined the emerging literature that appears to confirm that when e-learning is used in a pedagogically effective way it can have a positive impact across a range of indicators like retention and attainment. As we have seen, there appear

to be various advantages to be gained from doing this if such an undertaking is pedagogically focused, based on research evidence and evaluated thoroughly. Retention of home and international students will clearly be desirable and e-learning can help in this respect.

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Biographical note

John Cook (PhD MSc BSc CEng MBCS CIP FHEA) is Professor of Technology Enhanced Learning in the Learning Technology Research Institute, London Metropolitan University. He has a cross-university role of E-Learning Project Leader. John has over 14 years' previous experience as a full-time lecturer at various HEIs and in 2007 was made a University Teaching Fellow. He has over 8 years project management experience, which includes AHRB, BECTA, HEFCE-CETL and EC work. Furthermore, John has published or presented over 180 refereed articles and invited talks in the area of Technology Enhanced Learning, having a specific interest in four related areas: informal learning, mobile learning, user-generated contexts, and ICT Leadership & Innovation. A founder member of the Learner Generated Contexts group, John was Chair/President of the Association for Learning Technology (2004-06). He is the Vice-Chair of ALT's Research Committee, and conducts Assessor and review work for the ESRC, EPSRC, EU, DfES and the Science Foundation of Ireland.