

# Developing ICT and e-learning capacity in a medical and health sciences faculty



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Our poster presents the preliminary stages of a study concerning the question of increasing e-learning capacity to meet the flexible and distance learning requirements of a Faculty of Medical and Health Sciences. We are seeking effective ways to increase e-learning capacity within the Faculty in order to provide increased choice for all learners. Our case study is presented in terms of a simple three part analysis. The three parts of the analysis are: the number of e-learning projects completed by the Learning Technology Unit over a three year period; the number of courses offered within the Faculty of Medical and Health Sciences as a whole; identification of the need to address the e-learning capacity question within the Faculty. In conclusion we suggest some possible strategies for increasing e-learning capacity and outline our future research methodology.

Keywords: capacity, development, flexible, distance, learner, choice

## Learning Technology Unit

The Learning Technology Unit (LTU) - <http://www.fmhs.auckland.ac.nz/faculty/ltu/> - at the Faculty of Medical and Health Sciences is a service unit dedicated to meeting the flexible and distance learning needs of the Faculty. The unit consists of 3.4 staff members comprising of 2.4 instructional designers together with a Unit Director. Since its formation in 2004 the unit e-learning strategy has been as follows: the first phase was a foundational phase which focused on establishing vision, strategy, infrastructure and project management processes for e-learning developments within the Faculty; phase two, which to some degree ran concurrently with phase one, was an advocacy phase which aimed at encouraging and supporting an early majority of academics to use technology effectively in their teaching; and the current third phase which is concerned with developing e-learning capacity within the Faculty.

## LTU Projects

Our understanding of a project accords with British Government of Office Commerce definition. A project is, "A management environment that is created for the purpose of delivering one or more business products according to a specified business case" (British Government Office of Government Commerce, 2006, p.7). We simply replace "business products" and "business case" with "educational product" and "educational case." We approach each e-learning request submitted to the LTU as a project whilst seeking to determine the extent to which particular project management processes need to be employed (British Government Office of Government Commerce, 2006, p.12). For example, whilst all projects require an educational case to be made through submitting an expression of interest [<http://www.fmhs.auckland.ac.nz/faculty/ltu/submitproj.aspx>], relative size and complexity means that not all projects require the same degree of scoping during the project initiation process (British Government Office of Government Commerce, 2006, pp. 47-68).

Since being appointed as Director of the LTU in 2004 we have operated 3 project rounds: October 04 – October 05; October 05 – October 06; October 06 – October 07. The number of projects accepted by the LTU across the 3 project rounds is as follows: 15 Projects accepted from 17 submissions in the October 2004 project round; 18 projects accepted from 21 submissions in the October 2005 round; and 11 projects accepted from 11 submissions in the October 2006 round. During these three project rounds the LTU worked on 22 complete course conversions. A complete course conversion consists of taking a traditional face to face course and converting the course in its entirety for either flexible or distance delivery. The other projects from these three project rounds were not full course conversions. For example, we carried out work involving the development of particular learning objects such as interactive case based studies for medicine and filming work to demonstrate the use of laboratory equipment to undergraduate students.

As a result of our work on total course conversions 28 flexible and distance courses have been delivered across the three academic years 2005, 2006 and 2007 (6 of the 22 courses have been delivered twice).

In the last three years The LTU has essentially operated as a service or production unit. In other words the unit has carried out all the conversion work and in the majority of cases the unit has been responsible for maintaining and updating the courses. The LTU understood that this model was not sustainable in the longer term but took the view that it was important in the first two phases of the strategy to be proactive and to establish a strong e-learning presence within the Faculty through completing projects to a high standard and in a timely manner. Data – not presented in this paper – gathered from student evaluations, student pass rates, Board of Studies reports and project close out documents demonstrates that we have achieved our goals.

## **Putting things in perspective**

The Faculty of Medical and Health Sciences has 3000 full time equivalent students, 630 full time equivalent staff and offers over 450 courses each academic year. This means that although the LTU has provided a valuable service to the Faculty over a three year period, relative to all courses on offer within the Faculty the LTU has worked with only a small number of those courses. This remains true even if we consider all project work rather than just the full course conversions mentioned above. We always understood that wider engagement would require us to revise our model from one of production to an alternative that would increase e-learning capacity within the Faculty and we are now focussing our attention on how to achieve this.

As far as we can see increasing e-learning capacity means that we need to move to a position in which the LTU focuses on offering pedagogical advice, instructional design advice together with training for academic staff that will allow them to produce and maintain their own e-learning content. Concomitantly the LTU would continue to produce interactive content requiring knowledge of specialised software such as Adobe Flash and other specialist media content such as video files. To some degree we are already working to increase capacity in line with the initiatives mentioned above and the next section of the paper outlines some of these initiatives.

## **Steps to increased capacity**

Capacity increase “can be defined as a process by which skills, institutions and knowledge are built, utilised, retained and nurtured with a view to providing an entity with the means of responding to a development challenge” (Ogiogio, 2005). We are concerned with ways to help lecturers develop the knowledge and skills to develop their own e-learning content so that the Faculty can meet the challenge of offering choice to learners concerning where when and how they study. As an ideal we would envisage moving to a position in which choosing to teach using e-learning is as viable as choosing to teach by more traditional methods. The attempt to increase e-learning capacity means that we need to address the question of organisational motivation which can be defined as, “the organisational culture and incentives that influence the use of capacities in pursuit of the organisation’s goals” (Horton, 2002, p.4). Finally our current strategy requires that we set Faculty e-learning targets that will indicate when levels of excellence have been achieved in the various areas of e-learning such as curriculum design, course design, course delivery, staff support, and student support.

## **Knowledge and skills**

We have encouraged staff to use the open source EXE editor to produce e-learning content - <http://exelearning.org/> - whilst providing appropriate training and instructional design advice. Additionally we have made a member of the LTU staff available for one day a week to provide training in the use of other online tools such as Blogs and Wikis and to teach staff particular skills such as converting images for web delivery and producing PDFs. We also have a member of the University Learning Management System (LMS) team available within the Faculty one day a week to provide training in the use of the LMS. The LTU also teaches a course – E-learning and Clinical Education – in conjunction with the Centre for Medical and Health Sciences Education. The aim of this course is to provide clinicians with the appropriate pedagogical theory and instructional design skills to allow them to produce their own e-learning content.

## **Lecturer motivation**

Attempting to get lecturers to produce their own e-learning content raises the question of lecturer motivation. Nunes and McPherson state that lecturers have to “foster their professional careers in

institutions that increasingly devote a disproportionate weight to research in comparison to teaching . . . and it is not unusual that lecturers in HE have no formal training in teaching and learning” (Nunes & McPherson, 2003, p.4). Reeves states that with regard to research there is a publish or perish culture within universities (Reeves, 2002). Thus, whilst we can offer support and training and encouragement the question of lecturers’ time – and therefore motivation – to engage with e-learning will remain a challenge. Our current perception is that encouragement might take the form of eligibility for Faculty teaching awards together with promotion incentives for lecturers who dedicate time to converting courses so that students have more choice concerning when, where and how they learn. A further incentive might be freeing lecturers up for course development through offering grants. However, we have not formally explored this possibility.

### **Setting targets**

With respect to the third point – putting in place appropriate e-learning indicators – it seems fair to say that at least some of what still passes as e-learning is substandard from an educational point of view. For example, literature suggests that the use of the Learning Management System or Virtual Learning Environment is still educationally poor with content consisting of unstructured learning and multimedia material (Conole, Laat, Dillon, & Darby, 2006; Sheely, 2006; Zemsky & Massy, 2004; Zhang & Nunamaker, 2003). One way to address this issue is to make use of a quality assurance manual such as the “Quality Manual for E-Learning in Higher Education” produced by the European Association of Distance Teaching Universities provide very clear measurements for assessing the quality of e-learning within institutes of Higher Education (European Association of Distance Teaching Universities). As an example of an e-learning target the manual suggests that excellence has been achieved in e-learning pedagogical strategy when “Understanding of the relationship between pedagogical design and e- learning component methodologies is widespread and evidence- based” (European Association of Distance Teaching Universities). We are currently working with Associate Dean Education to incorporate appropriate e-learning targets into a five year Faculty Strategic Plan and into the Education Strategic Plan for 2008.

### **Being strategic**

Our experience over the last three years indicates that achieving a state in which e-learning delivery is just as viable as more traditional delivery methods will be difficult. In particular it is clear that wider Faculty uptake of e-learning does not occur automatically as a result of early adopter lecturers engaging with the LTU. Therefore, in order to raise the profile of e-learning and to address issues around knowledge, skills and motivation we are now taking a more strategic approach. In particular we are: seeking to include appropriate e-learning objectives and measurements in the five year Faculty Strategic Plan and in the 2008 Faculty Education Strategy; formally engaging Heads of Schools in the e-learning development process through a renewed focus on a reporting mechanism at the Faculty Education Committee; developing an already existing relationship with the Associate Dean of Education particularly in terms of selecting and evaluating e-learning projects; and instituting a Faculty e-learning showcase to complement the university e-learning showcase.

### **Research approach**

This paper should be understood in terms of Reeves’ model of action research or evaluation research (Keppel, 2005; Reeves, 2000; Reeves, Herrington, & Oliver, 2005). We are focussed upon “solving a particular problem in a specific place within a relatively short timeframe” (Reeves, 2000, p.7). The particular problem is how to increase e-learning capacity within the Faculty and the time frame is currently determined by the fact that the Faculty is completing a five year strategic plan for 2008-2013 and one year strategic teaching and learning plan for 2008. Whilst we are not seeking to construct theories, principles or models at this stage, others in similar circumstances might draw reasonable inferences from our paper for their own initial study of the question of e-learning capacity (Reeves, 2000, p.7). Furthermore, this action research will form the basis for more comprehensive future research both in terms of literature reviews and in terms of monitoring the progress that we make as a result of our actions. As a result of moving forward with this case study we would expect to measure the results of our efforts by first carrying out a Faculty audit and by setting specific targets around e-learning capacity development.

### **References**

British Government Office of Government Commerce. (2006). *Managing Successful Projects with Prince 2*. London: TSO.

- Conole, G., de Laat, M., Dillon, T., & Darby, J. (2006). An in-depth case study of students' experiences of e-Learning - how is learning changing? In *Who's learning? Who's technology? Proceedings ascilite Sydney 2006*. [http://www.ascilite.org.au/conferences/sydney06/proceeding/pdf\\_papers/p127.pdf](http://www.ascilite.org.au/conferences/sydney06/proceeding/pdf_papers/p127.pdf)
- European Association of Distance Teaching Universities. Quality Manual for E-Learning in Higher Education. [viewed 23 July 2007] <http://www.eadtu.nl/e-xcellenceQS/files/members/E-xcellenceManualGrey/index.html>
- Horton, D. (2002). *Planning, implementing and evaluating capacity development*: International Service for National Agricultural Research.
- Keppel, M. (2005). Educational technology and research: Perspectives for the Future. *Ascilite Newsletter: July 2005* [viewed 18 July 2007] [http://www.ascilite.org.au/index.php?option=com\\_content&task=view&id=47&Itemid=0](http://www.ascilite.org.au/index.php?option=com_content&task=view&id=47&Itemid=0)
- Nunes, M. B., & McPherson, M. (2003). Constructivism vs. objectivism: Where is the difference for designers of e-learning environments? Paper presented at the The 3rd IEEE International Conference on Advanced Learning Technologies, Athens, Greece.
- Ogiogio, G. (2005). *Capacity building and knowledge management in Africa: A discussion note presented at the seminar on building capacity for the education sector in Africa*. Norway: The Royal Norwegian Ministry of Foreign Affairs, The World Bank, The Norwegian NETF Reference Group.
- Reeves, T. (2000). Enhancing the Worth of Instructional Technology Research through "Design Experiments" and Other Development Research Strategies. Paper presented on April 27, 2000 at Session 41.29, "International Perspectives on Instructional Technology Research for the 21st Century," a Symposium sponsored by SIG/Instructional Technology at the Annual Meeting of the American Educational Research Association, New Orleans, LA, USA. Retrieved 18th July, 2007, from <http://it.coe.uga.edu/~treeves/>
- Reeves, T., Herrington, J., & Oliver, R. (2005). Design research: A socially responsible approach to instructional technology research in higher education. *Journal of Computing in Higher Education*, 16(2), 97-116.
- Reeves, T. (2002). Storm clouds on the digital education horizon. Paper presented at the Ascilite 2002, In Winds of change in the sea of learning: Charting the course of digital education. Proceedings ascilite Auckland 2002. [http://www.ascilite.org.au/conferences/auckland02/proceedings/papers/key\\_reeves.pdf](http://www.ascilite.org.au/conferences/auckland02/proceedings/papers/key_reeves.pdf)
- Sheely, S. (2006). Persistent technologies: Why can't we stop lecturing online? In *Who's learning? Who's technology? Proceedings ascilite Sydney 2006*. [http://www.ascilite.org.au/conferences/sydney06/proceeding/pdf\\_papers/p167.pdf](http://www.ascilite.org.au/conferences/sydney06/proceeding/pdf_papers/p167.pdf)
- Zemsky, R., & Massy, W. F. (2004). *Thwarted innovation - What happened to e-learning and why*. Pennsylvania: The University of Pennsylvania.
- Zhang, D., & Nunamaker, J. F. (2003). Powering e-learning in the new millennium: An overview of e-learning and enabling technology. *Information Systems Frontiers*, 5(2), 2007-2218.

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