

# Challenges for a faculty-based online learning unit in supporting the development of online projects in medical education

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## Abstract

This paper reports on the role of a faculty-based Online Learning Unit (OLU) in supporting four online projects in Continuing Professional Development (CPD) delivered by the Department of General Practice at the University of Melbourne. The projects were evaluated against a set of criteria that together are likely to predict the viability for a funding model for development, maintenance and hosting of online CPD based around a levy on student fees. Three of the four projects, undertaken by small cohorts of self-motivated students enrolling in CDP primarily to enhance their professional skills, used online discussion forums to support communication and interaction between participants. For one project (the only one which did not include any face-to-face component) there were more extensive web-based resources. The fourth project was a part of a vocational training program where online discussion forums supplemented a face-to-face program. Forums were used primarily for dissemination of extra resources and there was very little if any interaction between course participants online. The Online Learning Unit hosted three of the four projects, and the fourth, an existing program requiring more extensive web-based resources, did not proceed due to lack of ongoing financial support. Indicators for educational success for online learning programs were 1) a desire to communicate by program participants; 2) support by both the facilitators and students for online interaction, and 3) use of discussion forums that were relatively inexpensive to set up and where the discussion forum format matched the content and educational objectives of the program. Despite meeting educational objectives, such programs tend to appeal to small niche markets and do not raise sufficient revenue to become self-supporting by returning sufficient profit margins to fund future online developments. Online projects of greater complexity or servicing larger markets which did not have the required external funding to meet the upfront costs of resource development, and / or did not anticipate the amount of time and training required by content experts to develop suitable materials were not ready to make use of the type of services provided by the OLU on a fee-for-service basis. In the current context it is unlikely that a business model where online developments are funded by levies on future student fees will be able to provide a sustainable revenue stream to fund the development of niche online CPD programs in medical education such as the ones reported in this study.

## Introduction:

Online learning is increasingly being used in Continuing Professional Development (CPD) in medicine (Cobb, 2004; Hovenga, 2004). The perceived demand for this form of delivery is based on assumptions that 1) online CPD is convenient, 2) that it is relatively inexpensive, that 3) physicians and other healthcare workers are interested in undertaking online CPD, and 4) are willing to pay for it (e.g. Richardson and Norris, 1997). The users of this CPD still feel that “traditional” methods are superior, but acknowledge the utility of online environments. Online CPD shares with traditional CPD a difficulty in demonstrating significant effect unless endpoints are well defined (Stewart et al. 2005). The perception of potential providers of online CPD is that such programs will tap into new markets based rurally, interstate or internationally, and not currently reached by campus-based programs. It is also assumed that the internet will allow limited domain expertise to be disseminated more widely, and that revenue from student fees will make development of online courses financially profitable.

A survey conducted by the University of Melbourne Faculty of Medicine, Dentistry and Health Sciences (FMDHS) in 2002 identified a number of coursework programs within the faculty using, or planning to use, some form of online delivery for a significant portion of their program. Of the courses identified in 2003 as using or planning to use online delivery, a subset were prioritised for development during the next two years based on self-reported readiness of content, estimated funds available and projected student demand. In order to facilitate online developments identified through this survey, the Faculty set up a centralised faculty resource with academic expertise in online learning. The idea was that this centre would become self-funding within three years based on a per-student levy on fees.

In 2004, only five programs were delivered online through the faculty's central Online Learning Unit (OLU), and to fewer students than projected. Although interest in the potential of online learning remained at a high level, the major issue for new courses was obtaining content in a form suitable for online delivery whereas the major issue for existing courses (those already using some form of online delivery) was an unwillingness to pay for advice on how to improve their online offerings.

This paper describes four online projects from the Department of General Practice that used or planned to use resources of the Online Learning Unit and explores the reasons for the successes and failures of these projects.

Key criteria to consider with respect to each project:

- 1) What was projected market for the program and was it sustainable?
- 2) Are prospective students willing and able to pay fees and will some identifiable portion of those fees go directly towards funding the online component of the program?
- 3) Are the students and educators eager to participate in online education?
- 4) Are there identified sponsors or funding sources for the development, maintenance and hosting of the program?
- 5) Is the pedagogy innovative and does it make appropriate use of the online environment?

The lessons from these four projects are then considered in the context of the role of an Online Learning Unit in the development of online continuing professional development programs in medicine.

## **Case Studies:**

### **Program 1. Continuing Medical Education Program for General Practitioners:**

This program resulted in a web-based interactive learning environment for physicians based around sharing knowledge derived from actual experience and from medical cases developed by active academic medical practitioners (Liaw, Pearce and Keppel, 2002). In the online environment, a basic case was built into an advanced "model" case via a process of guided online discussion, reflection, and access to relevant web-based reference material within a dynamic knowledge and learning network. This web-based social constructivist learning paradigm marks a move to adapt existing learning theories to on-line environments (Hughes, Ventura and Dando, 2004) and is very resource-intensive both in terms of participant interaction and requisite ICT support for development of materials and hosting of interactive forums. In light of this resource-intensiveness, the developers of the program identified ongoing sustainability as being a significant risk to the project, particularly in the absence of a suitable project sponsor (Liaw Pearce and Keppel, 2002). Changes in role of the key staff in the project in conjunction with the requirement to pay upfront fees to the OLU for further development of the online environment and for ongoing hosting of web-based materials and discussion forums resulted in the project not going ahead in 2004.

Evaluation of this program against the key criteria

1. The projected market for the program of 60 students per year was probably sustainable.
2. Students were willing to pay fees, but not at a level to fund ongoing development of the program and fees did not go directly to online development.
3. The educators initiating the project wanted to participate in online education, but it is not clear whether any other staff in the department were committed to contributing to or actively supporting the project.
4. Sponsorship for the development and hosting of the program was not pursued aggressively as the key project members all assumed different roles in 2004.
5. The pedagogy of the program was both innovative and made effective use of online delivery within an ambitious networked learning environment. However the pedagogy was strongly driven by individual practitioners and was not sustainable without their personal level of commitment to the project.

## **Program 2. Vocational Training Program:**

This program was a vocational training package for up to 60 registrars per year enrolled in the Australian General Practice Training Program via one of 22 regional training providers as preparation for the Royal Australian College of General Practitioners (RACGP) college examinations. The training providers administer training packages, but the end-point (college examinations) is the domain of the RACGP rather than the contracted training providers. This training program comprised weekly meetings, weekend workshops, and online discussion forums based around a “Case of the Month” format. The online discussion forums for Terms 1 and 2, 2004 were hosted via Topclass learning management system to 4 groups of registrars. These forums operated over two 5-month periods to two cohorts of registrars at different levels of experience. The number of participants who posted messages to the discussion forums is reported in Table 1. Of the 106 registrars participating in the various programs, only 19 (< 20%) posted any messages, although the majority of registrars logged in at least once and a number continued to visit the site to download resources. The total number of messages posted by all registrars was 37 in the 10 months of the program. This lack of participation in forums and low rate of posting by those registrars who did participate suggests that very little, if any, discussion took place via the online medium. The relatively high number of posts from a small number of medical educators (including course administrators) reflected the primary use of online forums by educators as a medium for delivering resources (as message attachments) and for posting announcements. Fewer than half of the medical educators posted to the forums, suggesting a lack of commitment to the online component of the training program. The training provider has reviewed its use of online discussion forums as part of its training package and has restructured the online component of the training program for 2005.

	<b>No of participants registered for the forum</b>	<b>No of participants who posted at least one message</b>	<b>Total number of posts</b>
<b>Group 1 Registrars</b>	25	11	24
<b>Group 1 Medical Educators</b>	8	3	93
<b>Group 2 Registrars</b>	21	2	7
<b>Group 2 Medical Educators</b>	8	3	51
<b>Group 3 Registrars</b>	28	2	3
<b>Group 3 Medical Educators</b>	10	3	42
<b>Group 4 Registrars</b>	32	3	3
<b>Group 4 Medical Educators</b>	10	2	27

**Table 1:** Participation in online discussion forums by registrars and medical educators.

Evaluation of this online program against the key criteria:

1. The projected market for the program of up to 60 student registrars per year is sustainable.
2. Funding for the program is provided from a government program so funding for the online component and the program overall has to be negotiated with a third party.
3. The majority of educators and registrars (who were enrolled by default) had no particular interest in the online aspect of the program and showed no willingness to participate in online discussion with medical educators or their peers within the program.
4. Direct sponsorship for the development and hosting of the discussion forums was discontinued for 2005 and an alternative online strategy was employed.
5. The pedagogy of the program in terms of the online environment was limited in scope and uses online discussion forums as a convenient delivery mechanism for resources rather than as an opportunity for interaction. This has been addressed in 2005.

### Programs 3 and 4. Communication Skills:

The two subjects comprising Program 3 and Program 4 can be taken as single subject enrolments for self-development of professional skills or for credit within certain post-graduate programs. The majority of students in Program 3 were doctors whereas the majority of students in Program 4 were practice-based nurses and most students who undertake these subjects are self-motivated to improve their professional skills via CPD rather than taking subjects primarily in order to meet a professional development target imposed by an outside organization or professional body. Enrolments in each subject are low per semester but both subjects continue to attract motivated students at this low level, indicating ongoing interest from a niche market sector. Both subjects involved semester-long online discussion forums based around topics set by the facilitators, and two face-to-face workshops during the semester. Program 4 included an online reflective journal readable only by the student and the facilitators. All students and all facilitators participated in the online forums during the course of the semester although most considered themselves not particularly computer-literate and undertook the subjects based on the content rather than the fact that they were being delivered online. Table 2 shows a high level of facilitator input to Program 3 in contrast to relatively little active participation (posting of messages) by facilitators in Program 4. There was a high level of participation by students in both subjects. Due to the technical implementation of the reflective journals in Program 4, facilitator feedback was via email outside of the learning management system and was not tracked even though it was the primary mechanism for feedback from facilitator to student.

	No of participants registered for the discussion forums	Total number of posts to discussion forums	Total number of posts to reflective journals
<b>Program 3 Students</b>	12	85	N/A
<b>Program 3 Facilitators</b>	2	46	N/A
<b>Program 4 Students</b>	6	116 (subject forum) 24 (social forum)	55
<b>Program 4 Facilitators</b>	2	5	not tracked

**Table 2:** Participation in online discussion forums by students and staff

Evaluation of Program 3 and 4 against the key criteria:

1. These are both modest niche subjects catering for small but sustainable numbers of committed students.
2. Students are willing to pay fees to participate in discipline-based higher education for their own professional development but there is no direct allocation of student fees to fund the online component of the subject.

3. Neither the facilitators nor the students were particularly passionate about ICT or being online, but used interactive discussion forums as an appropriate tool to support their communication requirements in the subjects.
4. The modest direct cost associated with hosting discussion forums is being reconsidered by the Department of General Practice for 2005 despite successful use in terms of educational outcome in 2004. There is also consideration of whether to continue supporting such subjects due to the low student numbers and resultant financial penalties imposed by the central university administration for teaching “unpopular” subjects.
5. The pedagogy of using online discussion forums and online reflective journals to complement face-to-face workshops is appropriate use of the online environment and was well received by both facilitators and students, most of whom had little prior exposure to online learning.

### **General Discussion:**

Successful online learning projects require at a minimum to have the following characteristics:

1. An identified sustainable demand for the online content.
2. Prospective students who are willing and able to pay fees and / or host departments (or faculties or institutions) who are willing to contribute some portion of that fee or commit to some other form of ongoing funding for hosting of online resources.
3. Willingness of students and educators to participate in online learning, even if it is enforced as part of an assessment requirement.
4. Sponsors or funding sources for the ongoing development, maintenance and support of the online program.
5. A pedagogy that makes appropriate use of the online environment for resource delivery or for interaction.

None of the projects from the Department of General Practice met all of these criteria, although three of the four programs could be considered successful in terms of their educational outcomes of promoting meaningful interaction between participants. Although these projects were educationally successful, they were less successful in terms of delivering financial benefits to the service providers in terms of achieving high student numbers or by reaching out to new rural, regional and international markets. The registrar training program’s online component did not achieve its educational objective of promoting online discussion around “Case of the month” scenarios and was not embraced by medical educators or registrars in its 2004 format. However, as a small part of a vocational training program to achieve professional accreditation rather than a higher education program based around voluntary participation to improve professional skills, it has different drivers and is the most likely to receive ongoing funding support. There is an ongoing demand for vocational training for reasonably large cohorts of students, all of who appear to be willing and able to pay fees and do not seem overly concerned about the utility of the online component as it is only one factor in their program. The driver for developing a sustainable online program relates as much to perceived competition from training programs in other states as it does to any identified need to improve educational outcomes.

The role of the Online Learning Unit in assisting with these courses included 1) academic advice on how best to use online tools to achieve learning objectives; 2) developing web-based resources such as websites, web pages and documents for download; and 3) hosting services such as creating user accounts, creating discussion forums and providing ICT support for facilitators and students. The fee income for the OLU was based on hourly rates for development of web-based resources, for which most projects did have adequate funding, and a levy per student derived from student fees. There was no direct charge for academic advice, and although this technically-informed academic advice is considered extremely valuable and is the primary expertise of the unit, only one program was prepared to pay for it.

## **Conclusion:**

The primary benefit of an Online Learning Unit is to be available to provide academic advice and assistance to online learning projects, and the Online Learning Unit has provided such advice to a number of programs in addition to those reported on in this paper. Successful online programs delivered by the OLU had a need for communication between students and between student and facilitators, had the support of both the facilitators and students for online interaction, were based around discussion forums that were relatively inexpensive to set up and where the discussion forum format matched the content and educational objectives of the program. Online projects of greater complexity that did not have funding to pay the upfront cost of development of online resources and / or did not anticipate the amount of time and training required by content experts to develop suitable materials, were not ready or able to use the services available from the OLU in 2004. On the current evidence, although it is possible to deliver existing courses relatively economically through an Online Learning Unit, it is unlikely that a business model where academic support for the development, maintenance and delivery of online CPD programs is funded by levies on future student fees would be able to provide a sustainable revenue stream to fund the development of niche online CPD programs in medical education such as the ones reported in this study.

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