IMPLEMENTATION OF A LEARNING MANAGEMENT SYSTEM USING AN INTEGRATED APPROACH TO PROFESSIONAL DEVELOPMENT

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Abstract

Australian universities are challenged to provide training programs in the use of learning management systems (LMS) that assist staff both understand the software environment and use it effectively in their teaching practice. In this paper, we describe the development of an integrated professional development program designed for staff who want to use WebCT in their teaching. The program was part of a strategic initiative to provide centralised Information and Communication Technology infrastructure for teaching at Monash University. The integrated training program comprised a variety of strategies including: a series of 5 3-hour workshops, developed to introduce academic staff to design techniques and principles of delivery of educational material using WebCT; the option of specialist group access to workshops more tailored to meet their needs; support of networks of staff throughout the university and the use of third party instructional online tutorials. Workshops included discussion of teaching and learning issues of online course delivery, as well as hands-on use of the software. Printed resource materials to complement workshops are currently being developed. This paper discusses some of the implications of both the design and implementation of the integrated training program.

Introduction

Most Australian universities are either planning to or have adopted a centrally supported Learning Management System (LMS) with the most popular being those provided by WebCT and Blackboard. The dilemma for university staff is that while these integrated environments provide a simple interface for using a number of Internet based information and communication tools, they may also encourage practices that are not considered representative of good teaching in higher education (see Chickering & Gamson, 1991). Teaching staff who may have poor computer and information literacy skills as well as few of the information management skills needed to effectively use a LMS to support their teaching, must not only learn how to operate within these environments but develop an informed critical perspective of their use of the LMS in teaching in a variety of modes (Fox & Herrmann, 2000). For some teaching staff this is a daunting task (Alexander & McKenzie, 1998).

University administrators seek to provide staff with simple, accessible and centrally supported Information and Communication Technology (ICT) infrastructure but then must encourage quality teaching practices with the technology through training that marries both LMS and pedagogy (Ellis & Phelps, 2000). As technology often underpins university initiatives under the auspices of flexible learning or Internationalisation of the curriculum ("Leading The Way –Monash 2020"), it is extremely important that universities do not simply have their staff translate existing poor teaching practices to the online environment (Bates, 2000). Whilst the technology can support "bad transfer" as "effective transformation" of the curriculum, we should not merely "dump" our lectures online, but take the opportunity to improve our teaching (eg improve our face-to-face tutorials with effective online communication or provide additional learning experiences that would otherwise not be possible). Offering learning programs offshore via online technologies further complicates the pedagogical issues which must be considered in adopting and adapting a LMS (Vitartis et al, 2001).

This paper describes the integrated professional development program that is currently evolving at Monash University for training staff in the use of WebCT, the university's centrally supported LMS. Intentionally located within a unit traditionally acknowledged throughout the university for its support of teaching, especially its critique of teaching with ICT, the professional development program aims to fulfil the need to train significant numbers of staff in using WebCT in the context of localised conversations about the teaching and learning issues staff must address when using a LMS to support their teaching.

Background

Monash University is Australia's largest university comprising over 42,000 students located in 10 faculties (110 departments) spread over 6 Australian and 2 international campuses. While Monash university is a metropolitan Melbourne university, with the bulk of its quite diverse student population living and studying in Melbourne or nearby regional areas, it does provide both open and distance education programs. In more recent years, the University has embarked on a major expansion of its courses, locations and offerings, and the internationalisation of its curriculum and its students' experiences (Monash Learning and Teaching Plan). Consequently, there has been a growth in those courses that are underpinned by the use of a learning management system.

Monash University has a commitment to provide high quality programs for students with a major shift to flexible teaching and learning. A key aspect of Monash's future strategy as outlined in "Leading the Way – Monash 2020" was to advance off campus delivery. The two main ways in which this was to occur were by expanding off campus programs and enrolments and by providing greater flexibility in delivery modes to improve course quality and access.

In 2001, Monash University adopted WebCT as its centrally supported LMS and nominated the Higher Education Development Unit within the Centre for Learning and Teaching Support (CeLTS) as the unit to deliver the university wide training program for WebCT.

The university setting
In order to understand the development of the WebCT training program, it is necessary to understand the culture of Monash University. Its size and number of campuses means it is a difficult setting in which to conduct a centralised training program. As such, much of the responsibility for teaching programs is devolved to the faculties, or more likely, the individual departments. Consequently, the faculties and departments have a strong tradition of "doing things their way" and may resist centrally imposed practices if they are not considered to complement their faculty's traditions and responsibilities.

Monash now does have a network of Associate Deans (Teaching providing a network of senior staff with which the WebCT training team can collaborate to evolve the centralised training program.

Over recent years, The University's Strategic Innovation Fund (SIF) has played a key role in supporting the development of electronically supported teaching and learning.   The funding guidelines particularly supported the use of the my.monash portal, WebCT and other related educational technologies. With WebCT now available as a University-wide platform, projects are particularly sought which involve its use, and that of other educational technologies, in pedagogically advanced ways. In addition, the Global Online Learning Development (GOLD) program is another central initiative that aims to encourage and

support faculties to move suitable courses online in an exemplary fashion. Around 80 units are currently being supported through staff time release, funding and education design and production support through the GOLD program.

The WebCT Implementation project
Under the governance of the Electronically Supported Teaching and Learning Steering Committee (ESTL), the Monash WebCT implementation project focused on the negotiation of a perceptual licence for WebCT, the installation and integration of the software into the university systems and staff development and training program. Towards the end of 2002, a review and evaluation process, which is expected to be completed within two months, will likely lead to the production service and training function being embedded within Information Technology Services and the Centre for Learning and Teaching Support under the governance of a sub committee of ESTL.

Evolution of the Monash WebCT training program
The following fundamental requirements, some of which arose out of the third authors' previous experiences and work with colleagues at Victoria University of Technology, underpinned the design of the training program:

1. The training program must adopt multiple approaches to academic development ranging from standard workshops to mentor networks initiated by and located in the faculties and/or departments.
2. The training program must support multiple styles of learning and the different contexts in which Monash academics work.
3. Wherever possible, the workshop program must "go to them" rather than "have them come to us" (Boud, 1999).
4. Any WebCT training program must obtain public approval and ultimately work towards ownership of staff development by the faculties and departments.
5. Publicly, teams of teaching staff are supported rather than individual teaching staff.

It was also accepted that, like students, staff would want to learn about WebCT and its use in teaching in different ways and under different conditions, including wherever possible, members of the training team working with staff at as many campuses as practical.

The process of developing the WebCT training program was intended to be inclusive. As such, an initial, tentative WebCT training program was developed and a copy sent to all the Faculty Deans with an invitation for them as well as another member of faculty to attend a forum to discuss the training program curriculum. It was anticipated the Deans themselves might not attend and that they would send the Associate Dean (Teaching), which was the case for most of the faculties represented at the forum.

A draft copy of the training program was also sent to all the heads of departments with a covering email stating they may provide feedback directly via email or let their views be known to their Faculty representatives attending the forum. This strategy allowed individual departments to respond to the proposed training program but also encouraged the Faculties to send representatives to the forum. As some department heads wanted to know about the training program, the Associate Deans (Teaching) quickly became a conduit by which departments obtained information about the progress of the WebCT implementation project and the training program. The forum accepted the proposed training program with the modification that an advanced workshop be substituted for one or more of the planned workshops.

Challenges facing the Monash WebCT training program

The first challenge facing the program arose out of Monash University being a large university. There are over 8,500 staff spread across 6 Australian and 2 international campuses. Even if only a small percentage of staff needed training, the potential numbers of participants for workshops or other forms of support are quite daunting. There were obvious logistical problems organising laboratories on each of the campuses as well as developing basic WebCT courses to support the workshops when a test server was not available until November 2001 and the production service only came into operation in March 2002. In fact, the WebCT server at Victoria University of Technology was used for a period to support some early

workshop activity (as well as a subject in the Graduate Certificate in Higher Education course during 2001). However, this fact was not widely known and the assistance of the Centre for Educational Development and Support at Victoria University of Technology was appreciated and fundamental to the eventual success of the program.

The second challenge was assembling the team to develop the training program and conduct the workshops. The WebCT training team comprised the part time commitment of one senior lecturer, and the fulltime involvement of a WebCT trainer/coordinator and academic developer. However, in mid 2001 little was in place and no staff appointed. The WebCT coordinator/trainer commenced employment at Monash in November 2001 two weeks before being required to design, develop and teach within the workshop program. In January 2002, the academic developer began employment and was immediately involved in the workshop program. The circumstances under which the training program was developed is of little surprise to most involved in academic development but it still highlights how these programs are developed "on the run" and it is often later that we can reflect more on our practice and how it has been negotiated.

The third and for us the most significant challenge was to develop a program that supported a range of teaching modes with a variety of learning styles, yet could be accessible to a large number of staff.

The fourth challenge required the training team to gain the confidence of the staff by developing a reputation for accessible, friendly and constructively critical support. This meant providing accurate and up-to-date information about WebCT itself, its use in teaching and learning and its implementation with the university as a whole. The last item in this list required the training team to engage with other WebCT support groups and governance committees within the university in order to develop a detailed knowledge of the implementation of WebCT.

Integrated approach to professional development

No one type of activity was seen as sufficient in itself to meet all of our objectives. Any training program had to incorporate a variety of activities that ultimately encouraged learning about WebCT *in situ* with colleagues who wished to improve their teaching through the use of online information and communication tools (Boud, 1999).

WebCT training program: Assumptions, components and implementation

The training program was designed to primarily focus on teaching and learning issues at the same time as teaching staff how to use the learning management system, as it was thought this might be the only chance for some academic staff to experience training in educational design principles.

1. Using WebCT effectively involves a mixture of pedagogy and technology.
2. Good workshops improve staff confidence and competence but are limited in their impact on changing teaching practices (Brinkerhoff & Gill, 1994; Zuber-Skellett, 1993).
3. Like students, staff learn in different ways and within different contexts ,thereby necessitating the use of different teaching approaches both on and offline.
4. Staff require ongoing assistance over a semester when they start using any LMS, in this instance, WebCT.
5. Teams of teachers working on real projects learn more and are more likely to implement significant and long lasting improvements than those who do not.
6. Experience in using WebCT as a 'student' informs our use of WebCT as a teacher and so is crucial to any academic training program in WebCT.

Initially, it was decided to provide 6 different 3-hour workshops of hands-on training, access to online self-instructional materials and supplement these with support networks extending out into faculties, departments and schools. Whilst a lot of these initiatives were retained, the training program evolved out of negotiation with the stakeholders as implementation progressed.

Components

A summary of the different components of each of the training program strategies, with examples, is included in Table 1.

Professional Development Strategy	Description of key activities
Standard workshop program	Five workshops focusing on 1. Using WebCT as a Student 2. Collaboration Using WebCT's Communication Tools 3. The Fundamentals of Developing Subject Content in WebCT 4. Student Assessment and WebCT 5. WebCT for the IT Proficient Academic
Third party online instructional material	Eiffel Corp online tutorials: Eiffel Inc WebCT Training Toolkit, which comprises approximately fifty MS Word files covering the use of all the tools available in WebCT. PDF files of the MS Word files were also available for either staff and/or students to use.
Customised workshop program	Individual workshops negotiated with specific groups of staff e.g. Pharmacy staff, Library staff, GOLD projects, student helpdesk staff, Information Technology Services.
Unit/Course curriculum teams	Small groups of teaching staff who are working on a specific curriculum project. For example, a small team working on the revision of a first year undergraduate unit who wish to use WebCT to support delivery of resources and communication between students.
Faculty based mentor networks	More formal mentor networks located within the faculties. Networks evolve within the faculties in different ways and therefore the WebCT training staff form associations at different levels and channels.

Table 1: The different components of the WebCT training program.

The aim was to provide staff with the flexibility to learn about WebCT in ways that better suited them and their circumstances. Some staff were content to use the online materials, sometimes accompanied by on-call support and never attend the workshops. However, other staff enjoyed interaction with the trainers and were appreciative of the human contact and flexibility of support provided during and after the workshops.

Implementation

As with most academic development programs, workshops were scheduled for non-teaching periods to optimise the chances of academics being able to find a time and venue convenient to their own requirements. The first series of workshops were conducted over the summer of 2001/2002, starting in November and running until the end of February. A second series was conducted during the mid semester break in June/July 2002. However, in response to a high waiting list for training, regular weekly workshops were conducted during semester 1, and also over the Easter break. At least one full set of workshops was conducted at all Australian campuses, and at Monash Malaysia. Over the 10-month period the training program has provided up to 12 hours of training for around 650 staff, all conducted by the authors in teams.

For the first workshop in the program staff were encouraged to participate as students in a previously developed WebCT unit. To accomplish this staff were provided with a generic WebCT account and were required to interact as a student within the same unit. For subsequent workshops, each participant was issued with a WebCT course for which they were the designer and enrolled as students in others' WebCT courses. This organization of WebCT accounts allowed participants to work on tasks in small groups, where they could view and interact each other's work. The organisation of the WebCT courses impacted on what and how participants learned within the workshops.

Printed resource materials incorporating consideration of teaching and learning issues with local examples are being developed to complement the workshops, and some of the material contained in these will be integrated into the online WebCT courses that are used in the workshops. Table 2 briefly describes the different dimensions that are contained in each of the workshop resources.

Focus	Item included in printed/online materials
Student learning	Staff must complete the tasks they may expect their students to complete. At different points throughout the workshop there is an activity designed to invoke a conversation about issues such as: Who uses online learning and why? Who benefits the most? The least? What students like and do not like about online learning? And what do students need to know in order to use online learning effectively?
Teaching practice(s)	Changes to teaching practice arising out of using WebCT to support different modes of teaching (including campus-based teaching). How do you encourage student collaboration online? Considerations of what should and should not be put online? How do you solve some of the practical issues of putting resources online? What are some of the benefits and limitations of using online assessment?
Accessibility	Following the university's accessibility audit of WebCT, issues together with suggestions for staff are raised in terms of developing units in WebCT which are accessible to disabled students. Which particular tools and/or types of files may not be accessible to all students?
WebCT functionality/tool	Each workshop covers specific features of WebCT and involves staff completing tasks they would normally be expected to complete as a Monash academic. These are standard instructions for using WebCT that would be found in any WebCT tutorial.
Practical tips	Practical advice obtained from the literature and Monash teaching staff is dispersed throughout the materials. eg. Renaming chatroom logs each week to limit file size of chat room records, allows for easier identification of specific chat information on a week by week or topic by topic basis.
Monash context	Some attention is given to student and staff use of WebCT at Monash university. eg. local support for WebCT and its integration with the My.Monash Portal and student enrolment system as well as current issues relating to staff and student us of WebCT at Monash University.

Table 2: Topics included in the workshop materials

Table 3 contains a brief summary of the emphasis given each topic within the different workshops theme to date. This emphasis may change as these resource materials evolve.

Focus	W1	W2	W3	W4	W5
Student learning	1	3	2	3	2
Teaching practice	3	1	1	2	2
Accessibility and access	3	1	3	3	2
WebCT functionality/tool	1	1	1	1	2
Practical tips	3	2	3	2	2
Monash context	2	3	2	2	2

Table 3: Importance of each topic within specific workshops
1= Significant, 2 = Average, 3 = Minor

Simultaneously, an exemplar web site has been developed by a separate group in Monash, to provide staff with examples of pedagogically sound uses of WebCT, which will also be a vital resource for workshops.

In addition to the standard workshop program, customised workshops were provided to specific groups of both academic and general staff across the university. Nearly half of the training provided was under the category of customised workshops.

Since the commencement of the Monash University WebCT training program in November 2001, a total of 640 staff have participated in workshops to date. Of those, 375 have attended the standard introductory WebCT workshops and 215 have attended faculty and/or branch based customised workshops.

Finally, during the first six months of 2002, a number of faculty based WebCT networks have been established; where a WebCT training team member acts as a mentor to a small group of staff engaged in a specific teaching development project. Whilst some of these networks are faculty level committees, that guide the use of WebCT within the faculty (eg Faculty of Science), others arise out of centrally funded initiatives that are better supported by some form of mentor network (eg GOLD Project). Still others are organised through support centres within the faculty or department (eg Faculty of Arts) or through the need to provide a centralised support service for WebCT (eg CeLTS, ITS, Library). The key concept is that these networks form in many different ways in a large organisation like Monash University and so an effective training program must establish links with these networks.

Furthermore, the support given as part of these networks includes training, assisting with the development of faculty and/or department wide teaching templates and/or the discussion of the appropriate use of various WebCT features for teaching purposes.

The WebCT Help Desk was established within CeLTS, primarily for student use but this support has now been extended to staff. The help desk staff not only needed initial training in WebCT but ongoing assistance in order to reconcile issues arising out of the establishment of boundaries between different support services underpinning the WebCT implementation project.

Evaluation
To date, evaluation of the workshops has been undertaken using a simple online survey of open-ended questions. These questions asked staff for their opinions about what they did and did not understand as well as what they enjoyed or did not enjoy about the training program. This survey also asked for suggestions as to possible improvements for future workshops. In addition, critical incidents were recorded, and a database of attendance was maintained.

All staff were asked to complete a survey at the end of Workshop 1, where it doubled as an example of an WebCT survey, for staff to experience. At the end of Workshop 4, that is, at the end of the complete series of workshops, staff were again asked to complete a survey. This meant that those staff who did not complete all four (4) workshops, were not given the opportunity to complete a second evaluation form. However, it was thought to be too time consuming and repetitive, to justify asking staff to evaluate each workshop separately. It was also thought to be easier for staff to nominate areas of "muddiness" once they had completed the full complement of workshops.

Overwhelmingly, participants were satisfied with the current structure and presentation style of Workshop 1 and did not recommend any changes to its future delivery. The combination of hands-on experience and discussion as well as having two presenters was considered good. Although not many respondents complained about the pace of the delivery, those that did, were divided roughly equally between those who thought it was too fast, and those who thought it was too slow or unevenly paced.

In terms of WebCT itself, participants were impressed by its ease of use and range of options. Most either thought they understood all aspects covered, or thought it was too early to tell what was still unclear. The best understood features of WebCT proved to be the communication tools, particularly the discussion tool, as well as the overall range of functionality and flexibility WebCT offers.

Although most respondents did not find any aspect of the workshop irritating, some indicated that they found the behaviour of fellow participants who insisted on obtaining answers to questions associated with other workshops they had not yet attended annoying. In addition, they responded negatively to the pace of the workshop being slowed in response to people who clearly had not attended earlier workshops and subsequently did not have the necessary skills and understanding for the current workshop.

Discussion

The WebCT training program was designed to target the "average" academic with low levels of IT skills. This it did well. On the whole, people were comfortable with the level of content and skills the workshops aimed to develop. Most were comfortable with the pace of the workshops. Our impression was that many of the participants in early workshops were 'early adopters' or those with an intrinsic interest in teaching online. As the training has progressed we have noticed that past participants have encouraged their colleagues to also attend. Less competent and confident workshop participants raise new challenges for training staff in terms of providing appropriate scaffolding and support during training sessions.

However, the workshop program curriculum represented a compromise between the content requested by the training team and that agreed to by Faculty representatives. Most notably, was the inclusion of the advanced workshop which emphasized the features of WebCT but marginalized conversations about teaching and learning simply because there was inadequate time to attend to both interests. Ultimately, although the workshop was fully enrolled, it did not fulfill the needs of either the participants or the training team well because some staff overestimated their own IT abilities and therefore it took longer than three hours to cover the essential features of WebCT. At times, the training team may introduce workshops for political reasons rather than pedagogical ones. Workshop 5 met the perceived needs of a group of staff who attended the original forum. The process allowed the stakeholders to effectively frame some of the curriculum. However, the training program was reviewed twice within the 10 months and evidence accumulated to show that workshop 5 did not meet either the original pedagogical or technical goals. This evidence was then distributed to appropriate governing committees and managers to justify the exclusion of the workshop from future programs and the inclusion of more appropriate activities. WebCT training programs that combine this capacity for distributed ownership and evaluation are more likely to evolve in sustainable ways that meet the needs of all stakeholders.

While the program was built on the premise that individual staff or "lone rangers" would not be supported, there have been some occasions when individual staff were provided with assistance. However, it remains a policy that now seems to be accepted by faculties and teaching staff, and has proven to be very useful in encouraging the development and support of teams of teaching staff working together. Encouraging staff to work in teams on using WebCT to support their teaching is consistent with current views about academic work in the future (Coaldrake & Stedman, 1999; Kandlbinder, 2000). Many university staff will be reluctant to collaborate with their peers on what they perceive as an individual activity (Ellis & Phelps, 2000). It was necessary to balance the potential negative consequences of this strategy against a supportive environment created by the training team in all the various professional development activities associated with the WebCT implementation project.

There remains no direct link with the university's quality assurance agenda. Staff are not required to participate in any training prior to having access to their own WebCT course (unlike at some other universities eg. Victoria University of Technology). The emergence of a greater awareness of quality issues related to developing resources and teaching with various WebCT tools is leading to questions of quality from both university administrators and teaching staff perspective. One Faculty that does have a mandatory training requirement for its staff wants a similar arrangement within the centralized training program. Some teaching staff wanted some form of certificate of attendance and completion as evidence of participation for use in promotion applications. This has implications for the integration of assessment strategies within the WebCT implement project. Most professional development programs do not include assessment. The challenge for the WebCT training team will be integrate adequate assessment strategies that allow staff to provide sufficient evidence of a level of competency in using WebCT. How this evidence is then used is the decision of the faculties and teaching staff.

In addition, concerns about quality assurance and assessment point to the need to also better understand the existing skill base of staff as they enter the training program and long term providing a more appropriate training to various groups. A current strategy is to devise and implement a series of self-review checklists for staff to complete prior to attending workshops.

Whilst it was very important that as much as possible "we went to them" rather than "they came to us", a training program of this size, spread across many campuses is prone to technical difficulties whether they

arise out of network unreliability or software installations within the various laboratories used for training. Conducting training at remote locations also raised other issues of local facilities (eg uncomfortable room temperature or seating arrangements). At Monash an intentional strategy was the development of a mechanism for reporting problems via ongoing conversations with collaborative networks formed across departments and other service providers within the university.

Finally, whilst a diversity of training options may provide staff with flexibility in terms of how they learning about WebCT, this may not always be congruent with the agendas of the central training program that emphasise transformation of the teaching and learning environment through the use of WebCT in this instance. On this occasion, staff were able to learn about WebCT without exposure to and engagement in conversations about the way we teach and students learn in a WebCT supported environment. Even in the workshop program staff are likely preoccupied with "driving" WebCT rather than using it effectively in their teaching. The challenge for the WebCT training team is to embed activities beyond incidental conversation that privileges consideration of the pedagogy.

Conclusions

Our experience suggests that staff professional development initiatives of this kind benefit from an integrated approach of face-to-face hands-on instruction married with ongoing support networks and established help-desk support. The strategies are complementary if university staff at all levels view them as a progression from introductory learning activities to more considered and ongoing support located within their own practice at the time when they are considering fundamental changes to their teaching arising out of their use of WebCT.

We believe part of our success can be attributed to the appropriate balance of flexibility, willingness to provide practical and cheerful support and sensitivity to the culture prevailing within the university. The integrated program has been very successful if we use the measure of the number of staff participating in the program and their satisfaction with workshops as represented in the returns to the workshop surveys. However, we still have significant challenges in moving to sustainable and durable networks of support for staff that the program has already successfully initiated.

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