Deakin Online: An Evolving Case Study

Jo Coldwell and Douglas Newlands
Deakin University, Geelong, Australia

jojo@deakin.edu.au doug@deakin.edu.au

Abstract

This paper describes the planning, implementation and current progress of the Deakin Online Project which aims to establish a virtual campus for Deakin University. The project is built upon the WebCT Vista© learning management system. Strategies for eTeaching and eLearning are analysed and the dangers and opportunities are identified. Approaches to the preparation of both students and faculty for working in the online environment are discussed including online training, mentoring schemes and a dedicated teaching and learning support unit. An in-depth account of the project is presented which is potentially useful to any organization considering embarking on online teaching on a large scale.

Keywords: eLearning, eTeaching, online learning, distance education, learning management system, virtual campus, information technology literacy.

Introduction

In the early 1990's, Hiltz (1994) suggested that "what we are going to see in the future are more Virtual Universities", that the "meaning of the 'university' will change, and the idea of a 'campus' as we know it may disappear. It is now possible to run a university from a closet." (p. 259) More recently, Brown (2002) suggests that "effective, lasting adoption of IT [to support online learning] can only be achieved through integration of implementation strategies with wider institutional policy, planning, and objectives" (p. 578). It would seem that Cunningham et al.'s (1998) conclusion that "the future role of communication networks and virtual universities continues to be the subject of intense interest and speculation" is as relevant now as it was 5 or 6 years ago.

Deakin University has recently taken the decision to strategically support online teaching and learning institution-wide. In so doing, it has positioned itself to be a leader of online tertiary education in Australia. However, the various experiences of NYU Online (closed after investment of US$21.5M), Hungry Minds University (closed), Fathom.com (Columbia University, closed in March 2003 losing US$14M in the previous year), the Open University's US venture (closed in 2003 at a cost of £9m after failing to attract enough students), University of Maryland University College (closed), Temple University: Virtual Temple (closed) and DePaul University, Chicago (it failed to attract any enrolments to its masters in e-commerce) have indicated that such ventures are fraught with danger (MacLeod, 2002).

Deakin University is a dual-mode university with a large number of programmes offered to distance education students. It has used online communication, often on an ad hoc basis, to present teaching materials and support on- and off- campus students since 1981 (Coldwell & Newlands, 2003). It currently has 43% of its students

studying off-campus and a further 12% studying in mixed mode (Calvert, 2003). Such presentations have matured from a mix of remote-login/FTP/email in the early 1980s to web mediated access today. In 2002, an internal survey, prompted by The Observatory on Borderless Higher Education's first international survey on online learning (http://www.obhe.ac.uk), revealed that approximately 60% of units were using electronic delivery for static information such as unit outlines, lecture notes, assignment due dates and so on, and a further 27% of units had a more dynamic online presence, using the Internet for key elements of a study programme including class announcements, discussions, group work, assignment submissions as well as the delivery of static information.

Since then the University has completed a comprehensive evaluation process and selected a single learning management system (LMS) which is being adopted to support eTeaching and eLearning institution-wide. It is expected that approximately 20,000 students will each access up to 8 of some 2000 units in 2004 (Wilson, 2003). Having completed a 12-month pilot implementation with over 100 units being accessed by over 7400 students, this paper reviews current progress as well as the components still necessary to bring the LMS project to fruition.

Key areas being addressed in the University project include:

1. the implementation of the LMS hardware and software systems;
2. a parallel project, Deakin Online (DoL), which "…provide[s] a convenient, dynamic platform for the delivery of online learning resources and interactive services as well as acting as Deakin's gateway to courses, units and services that are offered entirely or primarily in distance mode (Deakin Online, 2003);
3. the transition of existing online teaching activity into the LMS and the planning of new developments for online teaching;
4. the training of faculty to use the LMS;
5. the training of support staff to use the LMS;
6. whether students possess or have access to appropriate information technology (IT) infrastructure;
7. whether students have the IT skills to enable them to make best use of the facilities provided via the on-line campus.

The likelihood of a successful implementation of the online project is increased since the Vice Chancellor has endorsed the online teaching concept and the University's strategic and operational plans have been designed to strengthen the role of the online environments in teaching and learning. One of the strategies for teaching and learning is to "progressively introduce online resources and learning experiences to both distance education and campus based programs to enhance, and where appropriate, transform, teaching and learning …" (Deakin University, 2003a). This is supported by five directives that are designed to ensure that:

1. staff and students have appropriate IT and teaching and learning skills to use the online environment;
2. comprehensive technological infrastructure is provided to support teaching and learning in the online environment;
3. best practice in online teaching and learning is adopted;
4. research and experimentation is encouraged in online teaching and learning; and
5. quality standards of online learning programs are assured.

The Learning Management System

The LMS chosen by Deakin University to support its online teaching and learning initiatives is WebCT Vista©. It is a web-based system which supports content delivery, communication, collaboration and assessment as well as having comprehensive class management and reporting capabilities. It has been integrated with Deakin's existing online user management systems, providing a means of authenticating users and limiting access to copyrighted and licensed resources. Barron and Rickelman (2002) categorise WebCT as a course management system, yet WebCT Vista, version 1 of which was released in July 2002, and version 2 released in June 2003, meets all the criteria they list for a learning management system, particularly that of being an enterprise-wide solution to eLearning.

There are many advantages to implementing an institution-wide LMS. These include the uniform presentation of learning resources using consistent navigation methods allowing students to concentrate on the learning materials and activities rather than the underlying technology. Access to materials requires authentication providing some protection of intellectual property held within the LMS. Further, the LMS system is likely to be better resourced with institution-wide commitment than would be decentralised systems controlled by smaller subunits within the organisation.

However, Barron and Rickelman suggest two major disadvantages of implementing an LMS, which are in accord with those cited for any large information system development. The first is the expense and time associated with implementing the necessary hardware and software. The second is the low probability of existing online courses and databases being immediately interoperable with the new system, requiring further resources to alter legacy systems and/or customise the new system. It requires major institutional investment of time, money and commitment to ensure such disadvantages are overcome.

We will discuss these issues in the light of our experience in following sections.

Deakin Online Project

Deakin Online is Deakin University's virtual campus. It is the home campus for those students studying entirely or primarily in distance mode. It provides a means of delivering online learning resources and access to support and administrative services online for all staff and students. Deakin Online is the gateway to courses and units delivered through the LMS (the implementation of which is called Deakin Studies Online [DSO]). Although not yet complete, the implementation of Deakin Online is well advanced. According to the Deakin Online project website:

> Deakin Online will enable Deakin's transition from provider-directed, print-based distance education to the new educational paradigm of flexible and interactive, student-centred online learning. The Deakin of the future will be a real time, real place university that uses its expertise to develop the context for successful university experiences, irrespective of the participant's physical location. Deakin Online will provide a structured and total approach to the use of online technologies, which will enrich learning experiences for all. (Deakin Online, 2003)

As part of the Deakin Online project, policies and procedures, including codes of good online practice, web publishing and web access policies, have been developed. These are designed to provide a firm foundation for any new developments in good practice and to provide a means of ensuring high quality offerings. The key to good policies is that they are sufficiently prescriptive to provide the intended guidance but not so prescriptive as to constrain innovation in the new online environment. The tension between these mutually contradictory conditions is proving to be difficult to resolve.

For example, one area where administration and faculty differ is in user management. The University wishes to constrain who has access to DSO. It is not a public forum, but private to the university community. It also has to meet its obligations regarding licencing arrangements and intellectual property rights. However, faculty wish to continue developing research and teaching programmes in an open and collaborative manner. In traditional settings, it is not unusual to provide access to an extended community outside the strict bound of the University, to visiting academics, members of the local community etc. But once we enter the electronic forum, such visitors require authentication, passwords, and access rights. Some compromise has to be reached in the formulation of any policy and associated procedures relating to user management to address the stresses between the expectations of faculty and the requirement by administrative services to restrict access to all electronic services. It has taken two semesters of teaching with some 100 units using DSO to resolve this issue, at least at a theoretical level, to the satisfaction of all parties involved. A simple implementation of the solution is still being negotiated!

Student Access to Infrastructure

Traditional, on-campus students access the online systems using appropriate infrastructure provided by and within the University. However, distance education students are required to provide their own computing and communication facilities of a minimum standard as advised by the University.

Surveys undertaken by the Division of Student Life, Deakin University, indicate that over 95% of all Deakin students have access to the Internet (Patterson, 2002). However, the surveys have not addressed the type of access they may have nor the constraints resulting from the access mode. Time constraints may arise if the computer is shared by several family members or if it is a public access facility like an Internet café or library. Bandwidth constraints may arise in the communication medium particularly if the downloadable material is of complex construction. Financial constraints will arise from volume charging for downloading such materials. If the student makes their access from their place of work, security constraints, like firewalls, may limit the use of software not sanctioned by the workplace.

With the decision to move to an online environment, Deakin University has addressed the access issue by insisting that all students have access to the Internet. (Deakin University, 2002). Although the university has had such a policy in place for a number of years it has not been strictly enforced. Faculty members, for example, often allow alternative methods of assignment submission even where electronic submission is the norm. However, the policy is being enforced from 2004, particularly as all units now have at least a basic presence in DSO. Students commencing an undergraduate degree in 2004 are required to undertake at least one unit totally online as part of their studies. (Deakin University, 2003b) Information is provided to new students on the expected minimum hardware and software requirements of their system. Students also need access to specialised software, to access the on-line materials and on-line learning objects, as well as to participate in on-line activities. This is handled by distributing, to every student, a copy of the Deakin Learning Toolkit, consisting of a *Getting Started* booklet and a set of 2 CDROMs, which contains instructions on accessing Deakin's online services and teaching forums, various orientation-style information, study skills information, as well as copies of licenced software which the students will need to have access to during their studies at Deakin.

Skills for eLearning and eTeaching

ePedagogies are holistic, theoretical approaches to learning situations which can be divided into the student view (eLearning), and the instructor view (eTeaching). There are no a priori reasons why constructivist approaches to learning are not also useful approaches to eLearning and there have been reports of successful projects using this approach e.g. COSE (Holland and Arrowsmith,

2000). However, our experience is that students do not necessarily use online materials in a fashion which meets the instructor's expectations and research is required on how materials are used to better understand how to construct them. The following sections present a view of how students approach eLearning. Some consequences for eTeaching are examined.

A View of eLearning

It may seem that eLearning is more difficult for students to negotiate than conventional, classroom-based learning. Student numbers will often be much larger, reducing the time per student which the academic is able to provide. There may be no face-to-face contact with academic staff and, apparently, no opportunity for early feedback to reinforce good practice or to extinguish bad practice. However, there is some evidence that this may not be a correct view of the situation. Hiltz (1994) presents findings, comparing eLearning to classroom learning in a range of fields, which suggest that mastery of course material was at least as good as that of students in a conventional classroom and that the students felt they had improved access to academics and resources. This was reflected in higher satisfaction with the courses. This last finding might be surprising given that students may never physically meet the instructor. Our experience at Deakin is that email is now culturally acceptable as personal contact and the instructor can be contacted more readily and regularly by this medium than by visiting the office, even by on-campus students.

An important difference in eLearning is that students are personally responsible for meeting all deadlines, planning preliminary tasks required to reach the deadline, initiating courses of action and individually pursuing them to completion and, on a practical level, they must possess the skills to use the online system itself as well as associated software tools (Kearsley, 2000 p. 62). This requires that students must either possess these attributes from prior study (secondary or post-secondary) or must be equipped with these skills before embarking on eLearning.

To complicate the issue further, there are subtle problems concerning use of language in an eLearning environment. Since many students, especially those who have not learned a foreign language, tend to speak ungrammatically, compensation for ambiguities and uncertainties in the uttered text is gained by the respondent asking for clarification, rewording or rephrasing until an agreed version of the content has been reached. This mode of discourse is not suitable for written media and students with little experience in electronic media may send uncontextualised messages leaving the instructor to reluctantly initiate a clarifying exchange of emails. Most students will learn these skills quickly because they need to make use of the medium. Additionally, inexperienced users will sometimes get into difficulty because the electronic medium has stripped all non-verbal cues from the communication. What one participant sees as business-like another may see as offensively abrupt. (Shea, 1994)

Deakin University attracts a relatively large minority of overseas students whose first language often is not English. For these students, operating in a virtual environment can be beneficial as they have the opportunity of reviewing what has been said and composing what they want to say asynchronously and with the use of a dictionary. This observation is supported by Seufert (2002), but he also points out that other cultural differences may have a negative impact on overseas students.

As well as the process of acquiring the skills to use the medium effectively, students must also learn to learn (Castells, 2001). The modern technological world especially, changes almost daily and skills become unwanted in the market place. In the programming world for example, required language skills changed from the 3GL family, through 4GLs in the early 1980s; a paradigm shift to object oriented (OO) languages occurred in the late 1980s; and then another to web oriented languages in the 1990s. Learning new languages is a natural hazard for a programmer but the paradigm shifts to OO and then web-based languages were much more challenging and are an

illustration of the need for continuous, or lifelong, learning. Thus, gaining generic learning skills will allow students to address the need for new knowledge, and to use new technologies which will emerge during their working life. The problem, as it manifests itself in an eLearning environment, has been most aptly stated by Collis and Meeuwsen (1999):

> For instructors in higher eduction, most of whom have had no formal training themselves in educational theory and learning psychology, guiding their students toward increasingly professional and mature learning-to-learn skills generally occurs in an intuitive manner. For students, the expectation may be a more painful and explicit confrontation as those who do not meet it are frequently those who drop out or are dissatisfied. (p. 26)

The problem is further confounded by the fact that the early adopters of information technology to support teaching and learning are often those who are most familiar with the technology and feel comfortable using technology, i.e. those researching and lecturing in computer science and information systems. Such academics often fit Collis and Meeuwsen's categorisation of instructors suggested above.

Despite all the problems associated with online learning, Kassop (2003) has found that "online education … frequently meets the needs of both [students and faculty] for an exciting, high quality educational experience". He suggests various ways in which online education surpasses face-to-face learning. These include:

1. a more student-centred learning environment;
2. the requirement of students to write at a more intense level;
3. the ability to gain lifelong learning skills;
4. access to enriched course materials, including multimedia;
5. on-demand interactions and access to support services;
6. the ability to gain immediate feedback;
7. flexibility in time and mode of delivery;
8. the development of an intimate community of learners; and finally
9. the rejuvenation and development of faculty.

However, there are costs associated with these benefits. Item 5 requires support services to be available 24 x 7 to meet demand, particularly if students are operating in different time zones from the institution. Item 6 exposes academic staff to the dangers inherent in giving immediate feedback without time for mature reflection. A response may tend to deal directly with the surface problem rather than the underlying conceptual difficulty when response times are considered an important indicator of service in performance reviews. A balance needs to be found between the speed of electronic modes of communication and reflective academic support. Finally, some faculty find items 8 and 9 threatening, preferring to maintain outmoded methods of teaching and without the benefit of modern technological support.

Implications for eTeaching

The emergence of eLearning is a two-edged sword for educational institutions. Their reach into the market is greatly expanded by being able to offer courses to clients across the globe. However, the potential customer can access courses from across the globe and no longer needs to access a course at a nearby institution simply because of its physical proximity. They can choose to study at whichever global institution offers the course most suited to their needs. The market place for online courses is fierce and as the market matures, courses of less than the highest quality will wither and die. Word of mouth reports on the Internet will have far-reaching consequences in the global market place. We had better get it correct quickly lest first generation pro-

viders, who learned pragmatically, lose market share to second generation providers who know the lessons of the errors made by the ground breakers but are untarnished by the consequences of those errors.

What is it we must get correct? Learning, mediated by an LMS, needs to have appropriate hardware, software, communication bandwidth and well designed domain content. However, there is also a requirement that the learners have an appropriate IT skill set to use the LMS itself, to interact with each other and have access to student oriented support services. Similarly, the teachers require adequate staff training and access to technical and pedagogical support services.

Students IT Skill Set and Support

The University has been grappling with the issue of ensuring that students have the basic IT skill set to access online resources, even before the advent of Deakin Online. The teaching and learning management plan for 2000-2002 suggests that the generic attributes of a Deakin graduate should include information technological literacy. It provides exemplary characteristics of this skill such as:

> Demonstrate the knowledge, operational skills and attitudes that underpin the efficient and appropriate use of communication and information technology in a variety of everyday and professional contexts. Be willing and able to use appropriate online tools and techniques for communication and to find, manage and disseminate information. (TLMP, 2000, p. 11)

This commitment to IT literacy is further emphasised in the University's strategic plan (Deakin University, 2003a) and is reflected in the operational plan (Deakin University, 2003b) but has not yet been implemented despite the fact that the need for easily accessible training was identified as an urgent matter in mid 2002. A proposal to provide students with access to online courses via CDROM and the University's Intranet was put forward in 2002, but has not yet been actioned due to concerns about the high costs involved.

Staff training

Ensuring that staff have the basic IT skill set is being addressed in much the same way as for students, with additional professional development programmes being run to assist faculty with creating courses, or parts of courses in DSO. Naturally, IT and educational support staff are also receiving training in the use of DSO, particularly in relation to administrative functions.

But does gaining basic IT literacy skills prepare faculty staff to develop appropriate eLearning objects? What other skills and knowledge are required to prepare an online course or run a programme of study online? Further, how do (or even should?) eTeachers ensure that students are adequately prepared to eLearn?

Barker (2002) suggests that, in general, faculty are not adequately prepared for online teaching. He proposes that new models of teaching and learning are needed "if e-learning strategies are to be effectively deployed for the efficient transfer of skills and knowledge" (p. 3). He also suggests that "a fundamental premise that forms the basis of online [learning] communities … is that knowledge and understanding are promoted through dialogue, discussion and debate." (p. 5) This is in accordance with Engagement Theory (Kearsley and Schniedermann, 1998), which was constructed with computer-based learning as its focus, and recognises that the learning experience should be collaborative, project-based and have a real-world or authentic focus. Fortunately, the collaborative aspect is easily facilitated by email, discussion groups and bulletin boards and our experience is that they are used extensively by both on- and off-campus students. However, a considerable proportion of many class members remain as "lurkers" rather than contributing to

the discussion. Indeed a strategy we have noted among some on-campus students is to wait until close to an assignment submission deadline, then read the conclusions of appropriate discussion groups and construct a solution without too much effort since the online group has already clarified the problem areas! Our own experience suggests that the skill set required to successfully manage such learning communities go well beyond those normally associated with being a traditional tertiary educator. To date these skills have been acquired through trial and error, modifying online programmes from one semester's offering to the next, in an effort to reduce workload, improve student learning and increase student and academic satisfaction.

Various methods of helping faculty to become competent eTeachers have been discussed within Deakin University. Professional development programmes which address ePedagogy are essential. However, should they be targeted toward particular programmes of study or online developments or should they be addressing generic issues? The literature suggests that such development programmes should be run online (Barker, 2002 and Kearsley, 2000 for example). One successful professional development programme run at Deakin has been reported in Spratt, Palmer and Coldwell (2000). Here, existing eTeachers from various Faculties held an online discussion forum over a number of weeks with staff who were thinking about adopting the technology to support their teaching. The outcomes were very positive with many of the traditional teachers indicating that they would be including online technologies in their programmes in the upcoming semester. They also indicated that they gained considerable insight into eLearning by participating in the discussions as a student which would inform and enhance their eTeaching efforts.

Another successful scheme is online mentoring. Mentoring is traditionally undertaken in a face-to-face environment. An experienced staff member may mentor a new academic; similarly, senior students may mentor freshmen (Morgan & Smith, 2001, p. 160). Morgan and Smith suggest that mentoring schemes can be successfully extended to open and distance learning situations. We contend that such a scheme can be facilitated by undertaking the mentoring programme in the online environment that the students and staff will be using for eLearning and eTeaching respectively.

A mentoring programme is being undertaken within the LMS through a dedicated staff development space in which all academic staff and others can participate. Discussions about online pedagogy are encouraged. Annotated exemplars demonstrating the LMS functionality are available as well as discussion spaces for troubleshooting and requesting help and ideas.

Other suggestions to assist faculty staff into eTeaching are that key academics should be seconded to the Teaching and Learning Support Unit (TLSU) to gain the necessary skills, or TLSU staff be seconded to Faculties to assist academics on a one-to-one basis or in small groups. The latter option seems to be favoured at the moment, but the resource implications have not been investigated fully. Unless resources are provided to replace teaching staff on secondment, the workload of colleagues will be further increased. If support staff are seconded into the Faculties, who will bear the cost?

In an effort to kick-start the change in teaching paradigms, an online teaching and learning fellowship scheme was introduced in early 2003. Funds were provided by the University to support at least one academic from each Faculty to spend one-day a week, for two semesters, to work with staff from the TLSU building online teaching expertise, and to undertake eLearning research (Wilson, 2003). In practice, most Faculties provided further funds to allow two academics per Faculty to participate in the scheme. The aim of the programme is that the fellows would take back to their Faculties knowledge about, enthusiasm for, and exemplars of online teaching and learning, and to provide leadership in their Faculties during the shift to DSO. The fellowship programme has allowed academics to develop and share online expertise and build informal net-

works across Faculties. Further, the perceived benefits of the scheme are such that the VC has provided funding for the programme to be continued in 2004.

Conclusion

Deakin University, having decided to adopt an institution-wide LMS, is investigating the possible impacts on staff and students, and adopting policies and procedures to allow staff and students to maximise the benefits of using an LMS. Deakin is attempting to ensure that this current development of an online campus does not go the way of several virtual universities recently. Deakin seems to have several factors very much in its favour. It has a very strong imperative to *go online* to support its large cohort of distance education students, it is doing so with a good base of online experience, it already has the infrastructure in place to support distance education, and hence virtual, students but it is remaining very firmly placed in reality. The online campus also has good support from the highest levels within the University with the Vice Chancellor and others voicing a very strong commitment to the development and providing strong support in the form of University funding. Indeed, the Vice Chancellor has further committed the University to supporting the new online direction by committing to the establishment of a National Centre for Knowledge Technologies and Online Learning and commenced planning for a Cooperative Research Centre (CRC) bid in 2004. (Deakin, 2003b)

However, providing the strategy, the technology and the content does not necessarily provide students with the means of learning online or staff the means of teaching online. The dynamics of teacher-student exchanges are quite different when technology is used as the communication interface. How students learn online and how we, as teachers, can assist them to learn effectively is still a relatively new and unknown area. The pedagogies required in an online environment are very different from those used in a face-to-face situation and the type of support students require when learning in an online environment is not yet fully understood. Although Deakin University has a relatively long history of supporting teaching with online delivery, this has usually been done in parallel with more traditional methods. Comprehensive evaluations will have to be undertaken to ensure that students continue to receive a quality education regardless of mode of delivery and that staff have the necessary knowledge and skills to provide a good educational experience.

References

Barker, P. (2002). On being an online tutor. *Innovations in Education and Teaching International, 39* (1).

Barron, A. E. & Rickelman, C. (2002). Management systems. In H. H. Adelsberger, B. Collis, and J. M. Pawlowski (Eds.), *Handbook on Information Technologies for Education and Training* (pp. 57-62). Berlin: Springer-Verlag.

Brown, S. (2002). The university. In H. H. Adelsberger, B. Collis, and J. M. Pawlowski (Eds.), *Handbook on Information Technologies for Education and Training* (pp. 578-59). Berlin: Springer-Verlag.

Calvert, J. (2003). Quality assurance and quality development: What will make a difference? In G. Davies & Stacey, E. (Eds.), *Quality Education @ a Distance*, IFIP TC3/WG3.6 Working conference on Quality Education @ a Distance. February 3-6, Geelong, Australia. Kluwer Academic Publishers.

Castells, M. (2001). *The internet galaxy*. Open University Press.

Coldwell, J. & Newlands, D.A. (2003). A model of online teaching and learning. In C. P. Constantinou& Z. C. Zacharia (Eds.), *Computer based learning in science: New technologies and their applications in education*. CBLIS'03, Cyprus. pp. 77-85.

Collis, B. & Meeuwsen, E. (1999). Learning to learn in a WWW-based environment. In D. French, C. Hale, C. Johnson, & G. Farr (Eds.), *Internet based learning: An introduction and framework for higher education and business*. Sterling, Virginia: Stylus Publishing.

Cunningham, S., Tapsall, S., Ryan, Y., Stedman, L., Bagdon, K. & Flew, T. (1998). *New media and borderless education: A review of the convergence between global media networks and higher education provision*. Department of Education, Employment, Training and Youth Affairs, Commonwealth of Australia.

Deakin Online (2003). Deakin Online Project. Retrieved December 1, 2003 from http://www.deakin.edu.au/DOLCP/index.php

Deakin University (2002). Undergraduate studies handbook, vol 1.

Deakin University (2003a). Deakin University strategic plan: Taking Deakin University forward. Retrieved December 1, 2003 from http://www.deakin.edu.au/vc/strat_plan_2003.pdf

Deakin University (2003b). Operational plan 2003. Retrieved December 1, 2003 from http://www.deakin.edu.au/vc/operational_plan_2003.pdf

Hiltz, S.R. (1994). *The virtual classroom: Learning without limits via computer networks*. Norwood, New Jersey: Ablex Publishing Corporation.

Holland, S. & Arrowsmith, A. (2000). Towards a productive assessment practice: Practising theory online. Assessment and the Expanded Text Consortium, University of Northumbria. Retrieved, December 1, 2003 from http://www.unn.ac.uk/assessingenglish/practising.pdf

Kassop, M. (2003, May/June). Ten ways online education matches, or surpasses, face-to-face learning. *The Technological Source*. The Michigan Virtual University. Retrieved December 1, 2003 from http://ts.mivu.org/default.asp?show=article&id=1059

Kearsley, G., & Schniedermann, B. (1998). Engagement theory. *Educational Technology, 38* (3).

Kearsley, G. (2000). *Online education: Learning and teaching in cyberspace*. Wadsworth–Thomson Learning.

MacLeod, D. (2002, December 17). Back to home base. The Guardian. Retrieved December 1, 2003 from http://education.guardian.co.uk/Print/0,3858,4568271,00.html

Morgan, C. & Smith, A. (2001). Mentoring in open and distance learning, In F. Lockwood & A. Gooley (Eds.), *Innovation in open and distance learning: Successful development of online and web-based learning*. London: Kogan Page Ltd.

Patterson, T. (2002). Off to a flying start: Distance education orientation programme evaluation. Deakin University. Internal Report.

Seufert, S. (2002). Cultural perspectives. In H. H. Adelsberger, B. Collis, and J. M. Pawlowski (Eds.), *Handbook on Information Technologies for Education and Training* (pp. 411-421). Berlin: Springer-Verlag.

Shea, V. (1994). Netiquette. Albion Books. Retrieved December 1, 2003 from http://www.albion.com/netiquette/index.html

Spratt, C., Palmer, S. & Coldwell, J. (2000). Using technologies in teaching: An initiative in academic staff development. *Educational Technology & Society, 3* (3), 455-461.

TLMP, (2000). The Deakin advantage: Guidelines for developing the attributes of a Deakin graduate. Deakin University. Internal Report.

Wilson, E. (2003, October 7). Down the line from Deakin. *The Age*. Retrieved December 1, 2003 from http://theage.com.au/articles/2003/10/06/1065292519813.html

Biographies

Dr Jo Coldwell is a Senior Lecturer in the School of Information Technology and is the Faculty of Science and Technology's eLearning Manager. She has supported her teaching with online activities for many years and is Unit Chair of the Faculty's (currently) only fully online unit.

Dr Douglas Newlands is a Senior Lecturer in the School of Information Technology, is the acting Associate Head of School (Teaching and Learning) and is a member of the Faculty Teaching and Learning Committee. He has used online methods to support both distance and on-campus teaching since the mid-eighties.