The ethics and EQUITY OF E-LEARNING in higher education

Refereed papers arising from the
"E-learning, ethics and equity"
conference, April 20th, 2001
held at the Sunshine Convention
Centre, Victoria University,
Melbourne

Editors: Barbara Brook and Anthony Gilding

Project Manager: Judith Cooke

Published by
Equity and Social Justice
Victoria University
PO Box 14428
Melbourne City MC
Australia 8001

Design and layout:
Doug Pitt, Graphic Connection

ISSN 1444 - 5700

Table of Contents

Delivering learning with the flexibilities over distance, learning style, and time provided by electronic mediation, is under exploration and active development in every university in Australia. The potential of "e-learning" is certainly enormous. But the power of "e-learning" brings into sharp view not only the potential for new effective ways of learning and teaching, but also a wide range of challenging ethical and social issues associated with its use. This monograph focuses on both ethical issues which arise in the context of deploying e-learning, but also the potential of e-learning to overcome barriers of social inequity in the community. The contributions are of particular interest because they are developed in the context of the lived experience of practitioners in the field.

This is the second monograph to be published by the Equity and Social Justice Branch at Victoria University. As with its predececessor this refereed volume is based on papers developed from presentations at a forum on educational issues seen from the perspective of student equity.

It is appropriate that Victoria University should facilitate this sort of scholarship given its commitment to the development of the necessary inclusive curriculum initiatives to enhance the successful learning outcomes of its students - the most culturally diverse student population in Australia.

But the appeal of this volume will stretch beyond the institutions from which its contributors and case-studies are drawn. The issues discussed here will be of keen interest to everyone who is preparing to engage, or is already actively engaged, with exploring the promise of e-learning.

Professor Jim Falk
Deputy Vice-Chancellor
Victoria University

Introduction

The Equity and Social Justice Branch of Victoria University has had a long involvement in the encouragement of innovative curriculum development that addresses issues of inclusiveness and critiques non-inclusive practices. In developing a theme for its annual conference in 2001, it therefore seemed logical to open up some dialogue about the challenges presented to the principles of equity and access by the very rapid espousal of e-learning in higher education.

'E-learning' as a term is something of a catch-all. As the following discussions indicate, it can be used in numerous different ways ranging from the use of a simple electronic technology to facilitate communication to a sophisticated interplay of content, pedagogies, and online technologies. Many of the writers in the area, here as elsewhere, spend some time teasing out the particular definition they want to use for their own discussion. It is a sign of the emergence of the field that a shared set of definitions is not yet firmly in place: these papers offer a small, local, contribution to the development of that field.

Just as 'e-learning' is something of a moveable feast, the term 'ethics' can also be interpreted in different ways. As Roger Gabb points out in his keynote address, it is relatively difficult, particularly in the Australian context, to find published discussions of the ethics of university teaching. In the context of this conference, 'ethics' and 'equity' have been equated in the sense of some shared principles for equitable practice that offer a transparent and inclusive experience of higher education for both students and staff.

This collection includes some discussions of very local practices, in the form of descriptions of some specific developments and issues at Victoria University (Best; Kidd and Madden-Hallett; Zorzenon and Gilding) and RMIT University (Martin and Webb). The keynote speakers provide a national context within the themes of 'ownership' and 'access'. All keynote presentations are available on http://ceds.vu.edu.au/conferences. Consistent with the theme of the conference, each presentation is available in a variety of formats thereby catering for people with different disabilities.

Trevor Gerdsen (University of Newcastle) directly introduces the nexus between institutional ethics, workplace issues, and the law, in describing some current debates around intellectual property (IP) in the e-learning environment. Gerdsen identifies some material ways in which moves to electronic delivery of courses may alter the nature of academic work and the relationship of universities and academics to academic 'product'. He suggests significant changes include a movement to increased team-work both between academics themselves and between academics and support staff; more permeable boundaries between the individual university, other universities and different forms of educational delivery; increased interest by universities in the teaching materials of academic staff. Gerdsen points out that increased interest includes concerns around liability and indicates the need for re-conceptualising IP agreements based on negotiation between the parties rather than operating within an old and out-dated paradigm in which the university assumes complete ownership.

The increased permeability of boundaries also frames the discussion of 'Who is looking in?' by Roger Gabb (Victoria University). As in Gerdsen's paper, Gabb is concerned with the different spaces constituted by online learning, but his focus is on privacy issues for students and staff. Gabb grounds the discussion firmly within a teaching context, describing the occasion that prompted a discussion of privacy and confidentiality. As he points out, these two concepts are not identical, though related. It is our ethical sense of privacy as a human right that should determine

our protection of student and staff confidentiality. While, Gabb suggests, privacy is not an issue unique to the online learning environment, the medium magnifies some of the problems and also enables a productive discussion of them. Furthermore, the medium has features that can be utilised to address the problems.

The teaching-learning nexus is the major focus for Denise Kirkpatrick (University of New England). She shares Gerdsen's interests in the ways that e-learning has removed the production of knowledge from the sole province of the individual academic or university, but focuses more on the ways this might alter the relationship of teachers and students. At present, she suggests, the potential transformation to student-centred learning offered by e-learning has not been fully realised: teacher pre-determination of structure and content tends to remain in place. Indeed, she argues, the proliferation of proprietary course management and learning 'packages' can sometimes create more rigid boundaries and controls of content and learning style. Economic considerations in the form of commercialisation and deployment of limited university resources can take priority over pedagogical and ethical issues in determining pedagogy, assessment and evaluation.

The difference between potential and actuality also concerns the presentations by Larry Stillman (Monash University) on e-equity for students with disabilities, and John Page (Edith Cowan University) and Adrian Miller (James Cook University) on e-learning in an Indigenous context. These two presentations are not included in print form but are available only on our website at http://ceds.vu.edu.au/conferences.

Stillman is, himself, illustrative of Gerdsen and Kirkpatrick's description of the e-learning field opening out educational delivery to include, necessarily, experts other than academics. He points out the rapidity of the field's development and the accompanying demands on relative novices—academics and others—to develop skills that were not originally part of their job expectation. Stillman offers some practical demonstrations of problems and impediments to a general and inclusive access to websites. His desired outcome is a universal agreement on minimum design principles and designers' understanding of major difficulties in access: for sight-impaired, hearing-impaired, and others among the 3 million and more Australians 'with disability'. He points out the legal implications for educational providers in terms of access to e-learning.

Page and Miller offer insights into the positive access to education offered by e-learning for some Indigenous students, providing evidence that some of the potential for innovation signalled by Kirkpatrick has been realised. The possibility of moving out from the physical space of conventional higher education institutions via e-learning can empower those Indigenous peoples in Australia, whose travel to study is a constraint, because of responsibilities to family, country, and community. They point out that universities offering this form of e-learning must ensure that the content and teaching-learning styles do not reproduce western-based philosophies of teaching and non-inclusive curriculum that have, in the conventional university system, acted as hurdles. Their presentation offers some examples of positive initiatives. Page and Miller argue that, in addition to course content, communities gain understanding of the technologies by which the courses are communicated and this places them in a better position to determine their own agendas.

The keynote speakers, in their different ways, explore how the different forms of communication in e-learning open up both immense potential and challenge for a shared ethics of teaching-learning. The limits on effective and ethical innovation seem to be attributable to two major factors that often intersect: economic priorities and constraints, and a paucity of reflective discussion and implementation of new teaching-learning paradigms within the new media. As Gabb notes, 'ethics in the university' has largely been synonymous with research rather than applied to teaching.

Other papers in the collection use case-study to discuss some implementation of e-learning in the university: at the same time, they raise broader questions and issues about ethics and e-learning and contribute to the development of an understanding of the field.

Elaine Martin (Victoria University) and David Webb (RMIT) share with Denise Kirkpatrick an interest in distinguishing what is different and what is similar between face-to-face and online teaching-learning. Their paper argues that a single ethics can be applied to any mode of teaching-learning. Having established some central principles, they use the metaphor of an heroic journey to explore how e-learning might enable those principles to be met, through the example of a postgraduate coursework subject.

Jeffrey Kidd and Helen Madden-Hallett (Victoria University) use a small-scale pilot-study study to explore some issues of equity and access. Their paper uses an introductory undergraduate subject in marketing to examine some very basic issues of material access and familiarity with computer technology. Like Page and Miller, the writers emphasise the longer-term socio-economic benefits of an understanding of new communication technologies. However, these benefits are contingent on access to the means to learn them. This raises the issue of how far public-funded-education institutions can ethically demand high-level computer use by students who cannot afford a home computer, and how far they have a responsibility to make available institutional facilities at appropriate places and times.

Gillian Best (Victoria University), in consultation with the two co-founders of a mentoring scheme (Marcos Anastassiou and Michael Hamel-Green) discusses some of the issues in using electronic communication for student support. Student mentoring is a student-centred mechanism for integrating new students into the university community. Electronic media are discussed in the context of offering opportunities to students who may not feel comfortable or have time constraints on participation in face-to-face groups. The discussion is framed by a brief contextual description of the massification of the Australian higher-education system and the different philosophies deployed in the support of 'non-traditional' students.

Finally, Guido Zorzenon (Victoria University) and Anthony (Tony) Gilding (Monash University) consider the issues of access to online technologies with very specific reference to Victoria University. Their paper offers a detailed insight into the evolution into an e-learning deliverer of a new university, describing the introduction of WebCT and Real Media technologies, their impact on students and the challenges for the university. The paper concludes with a series of specific recommendations. While this offers an example of the very local focus of a number of the contributors, it is of interest for its attention to detail and the relevance of its concerns in the broader arena.

The potential relevance of these papers is indeed broad. Teaching-learning in the university has, until recently, been under-researched and there continues to be a clear privileging of research over teaching both institutionally and in the minds of many academics. There has been too little traffic between the pragmatics of course development and delivery, research into pedagogies, and the conceptually exciting cultural and sociological research that explores, for example, issues of identity and representation in new technologies. The advent of electronic delivery, the massification of the university undergraduate population, and the demands for a greater and overt commercialisation, are only three of the factors that in coinciding must alter the professional identity and role of the academic.

There are increasing demands to change practice and approaches. To some extent changes are of course constrained by resources, both personal and institutional, but what these papers demonstrate is the importance, in an environment where change is possible, of engaging with the central questions of what, how and why people learn. All the writers are engaged to some extent with these questions and with the overarching ethical question of who has access to learning.

Finally, an ethical consideration of teaching-learning in higher education is a new and developing field made more urgent by the rapidity of developments in communication technologies. New fields need to be mapped before their contours can be understood. These papers make a modest contribution to that mapping.

Contributed papers were submitted to a blind referee process using academics in the field drawn from other Australian universities.

Barbara Brook

Anthony Gilding

Contributors

(* Keynote presenters. Presentations are available at http://ceds.vu.edu.au/conferences/)

Gillian Best

Lecturer in the Student Learning Unit (SLU) within the Centre for Educational Development and Support (CEDS) at Victoria University. She has a particular interest in the ways in which students perceive and construct their university experiences and is completing a PhD on the first year experience.

Gill.Best@vu.edu.au

Associate Professor Barbara Brook

Coordinator of Gender Studies in the Faculty of Arts, Victoria University. Her main areas of research interest are in postgraduate supervision pedagogy and related gender issues.

Barbara.Brook@vu.edu.au

Professor Roger Gabb *

Director of the Centre for Educational Development and Support (CEDS) at Victoria University. His main areas of interest are in professional education and cross-sectoral education with a particular interest in the effects of assessment on student learning.

Roger.Gabb@vu.edu.au

Trevor Gerdsen *

Associate Director in the Information and Education Services Division in the University of Newcastle and Program Manager with responsibility for Media Design and Production and Publications. He has particular expertise in the area of copyright and its application within the educational context. He is the author of Copyright: A User's Guide (RMIT Press, 1996).

Trevor.Gerdsen@newcastle.edu.au

Dr Anthony Gilding

Director, Teaching and Learning Development Support, James Cook University. His main areas of interest are in professional education and flexible learning.

anthony.gilding@jcu.edu.au

Jeffrey Kidd

Jeffrey Kidd is a Senior Lecturer in Marketing at Victoria University. His current research interests include selling and sales management, the marketing of farm tourism, electronic marketing and the use of computers in marketing education.

Jeffrey.Kidd@vu.edu.au

Professor Denise Kirkpatrick *

Director of the Teaching and Learning Centre at the University of New England with responsibility for management of distance education, flexible learning operations and academic staff development. Her major areas of interest include flexible learning and change in higher education and constructions of good university teaching.

dkirkpat@metz.une.edu.au

Helen Madden-Hallett

Lecturer in Marketing, School of Hospitality, Tourism and Marketing, Victoria University. Her current research interests are business-to-business marketing, particularly in regard to purchasing systems and the move to e-procurement in small manufacturing firms.

Helen.Madden-Hallett@vu.edu.au

Professor Elaine Martin

Director of the Postgraduate Research Unit (PRU), Victoria University. She has researched and written extensively in the area of teaching and learning in higher education.

Elaine.Martin@vu.edu.au

Adrian Miller *

Senior Lecturer within the Schools of Public Health and Tropical Medicine, James Cook University. He has worked with DETYA's Higher Education Division in Policy Development and Implementation. He has been involved in the development of numerous online technologies for use in Indigenous education and public health education. He is an Aboriginal man of the Djirrabal of North Queensland.

Adrian.Miller@jcu.edu.au

John Page *

Senior Lecturer and Coordinator of External Programs at Kurongkurl Katitjin, School of Indigenous Australian Studies, Edith Cowan University. His experience covers technical, social and cultural aspects of new media, especially as they relate to Indigenous Australians and the education sector.

He is an Aboriginal man with traditional ties to people and country along the Paroo River and Cooper Creek in South West Queensland. Due to the dislocation and separation experienced by Aboriginal families, he also holds very strong historical ties to the Winton region in Western Queensland.

J.Page@ecu.edu.au

Larry Stillman *

Senior Research Fellow in the Centre for Community Networking Research, Monash University. He has worked in community development, multicultural, and information services. His current research interests include adaptive technology for people with disabilities, accessible design, usability evaluation and multilingual evaluations of the Internet. He has published research with the Information and Telecommunications Needs Research, Monash University.

Larry.Stillman@infotech.monash.edu.au

David Webb

Lecturer in Computer Science at RMIT University. He has extensive experience in the commercial software industry and also teaches yoga and meditation.

Webbo@cs.rmit.edu.au

Guido Zorzenon

Distributed-Learning Systems administrator and Webmaster for the Centre for Educational Development and Support at Victoria University.
His experience covers both the application and implementation of on-line technology in a cross-sectoral teaching environment. Major relevant interests include the use of online technologies to facilitate communication with non-native English speakers and accessibility.

Guido.Zorzenon@vu.edu.au

Who's looking in? Privacy and online learning

ROGER GABB
Victoria University

The increasing use of online learning has brought a number of ethical issues into focus. Perhaps the most important of these relates to the privacy of communication between students and between students and teachers. Some of these privacy issues are, in fact, also pertinent in face-to-face teaching but may be magnified in the online environment. This paper explores these issues from two general perspectives, one being the ethics of tertiary teaching and the other privacy in online communication. It then goes on to examine the practical implications of dealing with these issues in the popular WebCT online learning environment, including an examination of both the threats to privacy inherent in this environment and the features of the environment that can be used to protect privacy. Finally, it suggests some privacy guidelines for online learning using WebCT or similar environments.

In my first attempt at online learning a few years ago, a team of us were teaching a postgraduate subject using online learning in so-called adjunct or supplementary mode. We had weekly face-to-face classes and we supplemented this activity with online discussion between these meetings, using our newly-installed TopClass environment. Our students were all members of the staff of our university and our team wanted to make the most of this new online world, so we made contact with two colleagues in other universities and persuaded them to act as resource people for our online discussions. When we announced this coup to our class of ten students, they argued that they would much prefer to come to grips with this new environment in private, in an area that was only accessible to the members of the class and with teachers they knew and trusted. After some discussion, we backed off and agreed that the online discussion area would be private to the class but that we would discuss the issue again later in the semester to see if they felt differently about it once they gained confidence in using online communication tools.

As it happened, some participants took many weeks to post their first contribution to the discussion area and one of the reasons they gave for this was fear of making fools of themselves online. They explained that this fear was exacerbated by the fact that their "foolish" contributions would not only be read by the teachers and students involved in the course but also be accessible to all of us for the rest of the course, and to some of us for longer than that. It is possible that, because of our role in a wide range of professional development activities related to online learning, they also feared that their contributions might at some time be disclosed to other teachers in the course of these activities. We quietly dropped the idea of including our colleagues in the online discussion and started thinking about some of the privacy issues raised by online learning. We also started to think about how these same privacy issues apply to "traditional" face-to-face teaching.

In this exploration of some of the privacy issues raised by the move towards online learning, I want to draw on two very different discourses. The first has nothing specifically to do with online environments but deals more generally with teaching ethically in tertiary settings and the second has nothing specifically to do with tertiary teaching but deals more generally with privacy in online environments. After a brief exploration of each of these topics, I'll attempt to weave them together in a discussion of how they might be applied to online learning in a specific environment, that of

WebCT, an online environment that has been widely adopted by many universities in Australia and elsewhere, including my own. Finally, I will propose some modest privacy guidelines for use in the online environment.

Teaching ethically and confidentiality

The literature on the ethics of teaching in a tertiary setting is limited. As other commentators have noted, there is an extensive literature on ethics in higher education settings but it focuses almost exclusively on ethical research or, more accurately, on obtaining ethics approval for conducting research in universities. Finding contributions on the ethics of teaching in universities and other tertiary institutions is much more difficult. One might, perhaps, expect that there would be some reference to ethical matters related to confidentiality or privacy in publications such as the "Guidelines for effective university teaching" published by the Australian Vice-Chancellors' Committee (AVCC, 1993). However, this comprehensive and worthy document makes no mention of these matters. Similarly, a widely discussed HERDSA (Higher Education Research and Development Society of Australasia) publication entitled *Challenging conceptions of teaching: some prompts for good practice* also makes no explicit mention of ethical matters (HERDSA, 1992).

The *NTEU code of ethics* published by the National Tertiary Education Union does, however, address some of the ethical issues faced by tertiary teachers:

> Students come to university to learn and to be accredited for that learning. Students are dependent on university staff, particularly academics, for the achievement of these ends and are therefore vulnerable to their power. Although there are other inequalities of power in the university context, the position of students vis a vis the academics who teach them embodies a structural inequality arising from the teacher-student relationship…
>
> The best way to conceive and regulate this asymmetrical relationship is via the notion of fiduciary duty. Fiduciaries should act in the interests of students rather than primarily in their own interests. In the case of academics, it follows that they have obligations to diligently teach and assess students and not exploit their vulnerabilities. (NTEU, 1998; 5)

The issue of confidentiality is dealt with in Section 2.3.1, quoted here in full:

> Staff should respect students' rights to privacy and confidentiality. They should only provide information about their students for legitimate academic purposes, or where they are authorised to do so by the student, and must strive to ensure that such information is accurate and relevant. Within reasonable limits, academics should be prepared to provide references for their students. (NTEU, 1998; 6).

While confidentiality in general terms is addressed here, many questions remain. What, for instance, are "legitimate academic purposes"? What can ethically be provided in a reference?

A widely cited document entitled Ethical principles in university teaching was developed by the Canadian counterpart of HERDSA, the Society for Teaching and Learning in Higher Education (Murray et al, 1996). This statement lists the following "set of basic ethical principles that define the professional responsibilities of university professors in their role as teachers":

Principle 1: Content competence

A university teacher maintains a high level of subject matter knowledge and ensures that course content is current, accurate, representative, and appropriate to the position of the course within the student's program of studies.

Principle 2: Pedagogical competence

A pedagogically competent teacher communicates the objectives of the course to students, is aware of alternative instructional methods or strategies, and selects methods of instruction that, according to research evidence (including personal or self-reflective research), are effective in helping students to achieve the course objectives.

Principle 3: Dealing with sensitive topics

Topics that students are likely to find sensitive or discomforting are dealt with in an open, honest, and positive way.

Principle 4: Student development

The overriding responsibility of the teacher is to contribute to the intellectual development of the student, at least in the context of the teacher's own area of expertise, and to avoid actions such as exploitation and discrimination that detract from student development.

Principle 5: Dual relationships with students

To avoid conflict of interest, a teacher does not enter into dual-role relationships with students that are likely to detract from student development or lead to actual or perceived favouritism on the part of the teacher.

Principle 6: Confidentiality

Student grades, attendance records, and private communications are treated as confidential materials, and are released only with student consent, or for legitimate academic purposes, or if there are reasonable grounds for believing that releasing such information will be beneficial to the student or will prevent harm to others.

Principle 7: Respect for colleagues

A university teacher respects the dignity of her or his colleagues and works cooperatively with colleagues in the interest of fostering student development.

Principle 8: Valid assessment of students

Given the importance of assessment of student performance in university teaching and in students' lives and careers, instructors are responsible for taking adequate steps to ensure that assessment of students is valid, open, fair, and congruent with course objectives.

> Principle 9: Respect for institution
>
> In the interests of student development, a university teacher is aware of and respects the educational goals, policies, and standards of the institution in which he or she teaches. (Murray et al, 1996).

The document includes a brief elaboration of each principle and the full text for Principle 6 reads as follows:

> Principle 6: Confidentiality
>
> Student grades, attendance records, and private communications are treated as confidential materials, and are released only with student consent, or for legitimate academic purposes, or if there are reasonable grounds for believing that releasing such information will be beneficial to the student or will prevent harm to others.
>
> This principle suggests that students are entitled to the same level of confidentiality in their relationships with teachers as would exist in a lawyer-client or doctor-patient relationship. Violation of confidentiality in the teacher-student relationship can cause students to distrust teachers and to show decreased academic motivation. Whatever rules or policies are followed with respect to confidentiality of student records, these should be disclosed in full to students at the beginning of the academic term.
>
> It could be argued that in the absence of adequate grounds (i.e., student consent, legitimate purpose, or benefit to student) any of the following could be construed as a violation of confidentiality: providing student academic records to a potential employer, researcher, or private investigator; discussing a student's grades or academic problems with another faculty member; and using privately communicated student experiences as teaching or research materials. Similarly, leaving graded student papers or exams in a pile outside one's office makes it possible for any student to determine any other student's grade and thus fails to protect the confidentiality of individual student grades. This problem can be avoided by having students pick up their papers individually during office hours, or by returning papers with no grade or identifying information or grade visible on the cover page. (Murray et al, 1996).

This sets a high standard for confidentiality, based on the models of doctor-patient or lawyer-client confidentiality, but it too is somewhat ambiguous. Again we have the undefined "legitimate academic purposes" in the general definition of the first paragraph and the vague "using privately communicated student experiences as teaching or research materials" as an example of a breach of privacy. Do these "student experiences" include assignments such as essays? Do they include contributions to online discussion lists?

Internet privacy

Privacy on the Internet is a hotly contested issue, with views ranging from that of Scott McNealy, CEO of Sun Microsystems, who was quoted as saying "You have zero privacy anyway. Get over it." to Marc Rotenberg, Director of the US-based Electronic Privacy Information Centre (EPIC), who reportedly responded: "Privacy is the future. Get used to it" (Fortune, 2001). In the United States, public interest groups such as EPIC and the Electronic Frontier

Foundation (EFF) monitor threats to privacy and educate Internet users on how to protect their online privacy (EFF, 2000). In general terms, the major concern of these groups is the collection and sharing of personal information by commercial and government sites. They point out that this information is not confined to that collected by obvious mechanisms such as online registration forms but also includes data sent to remote sites silently by your browser (e.g. Netscape Communicator or MS Internet Explorer). It is instructive to use one of the readily available sites to report on the information, known as "clickstream" data, that is made available by your browser to each site you visit–it includes your IP address (your Internet identity), your computer name, the link you followed to reach the site, your browser type and browser plug-ins (e.g. Acrobat, RealPlayer), operating system (e.g. Windows 98), the route your signal took to get to the site and other information.

The public interest groups on privacy are particularly concerned about the use of "cookies". These are text files that the remote site places on the hard disk of your computer via your browser. These may be so-called "session cookies" that are deleted from your hard disk when you close down the browser at the end of your session. These are often just a temporary means of identification, so that you do not need to keep entering ID numbers and passwords each time you re-enter a site during a single session. This type of cookie is used when you log onto the VU Intranet from home. But there are also "persistent cookies" that stay on your system until a defined expiration date, at present no later than 2038! These cookies are used by sites such as Amazon.com to tailor their response to you. If I enter the Amazon.com site using my own computer, I am immediately welcomed by name and offered some tempting suggestions of books and CDs, based on the pattern of my previous purchases. This is done using persistent cookies.

If you want to know what cookies are being sent to your hard disk, you might try searching for the file "cookies.txt" and examining it in Notepad or Word. It is a bit cryptic, as each cookie mostly consists of long text strings in code but you'll get some idea of which sites are giving you persistent cookies. It is possible to set up your browser so that it accepts no cookies or warns you each time the remote site tries to place a cookie on your hard drive– but cookies are used so widely that this will result in a stream of frequent interruptions in the form of warning messages.

More intrusive than browser data or cookies, however, are some so-called browser extensions– downloadable "free" software products that add functions to your browser such as automatically filling in Web forms with your personal information. Some of these products keep track of every Web site the user visits and transmit this information back to the home site for the extension (Martin et al, 2001).

The pressure applied by public interest groups like EPIC and EFF for full disclosure of the privacy practices of Web sites has led to many major commercial sites including privacy notices on their Web sites that spell out what information is collected from users and how it is used (for examples, see http://www.amazon.com, http://www.barnesandnoble.com and http://eBay.com.au). It has also led to agencies being set up to certify that defined privacy standards are met by means of "Web seals" (e.g. TRUSTe and BBBOnline).

This concern about protecting privacy online is, of course, not just a North American obsession. Here in Australia, the Australian Privacy Commissioner also has a strong interest in Internet privacy issues. At present, the Commissioner's office mainly focuses on Commonwealth agencies, credit providers and credit reporting agencies and those using tax file numbers but in December this year the Privacy Act will also cover many private sector organisations. The Privacy Commissioner's website (http://www.privacy.gov.au) includes a number of useful resources, including guidance on protecting user privacy on the Internet and guidelines on workplace e-mail, Web browsing and privacy.

Perhaps most relevant to our present purpose is a set of guidelines prepared for Federal and ACT Government websites but relevant to most websites, including those dedicated to online learning. The first guideline is:

> Agency websites should incorporate a prominently displayed Privacy Statement which states what information is collected, for what purpose and how this information is used, if it is disclosed and to whom and addresses any other relevant privacy issues. (The Australian Privacy Commissioner, 2001).

Not surprisingly, perhaps, the privacy statement for the Privacy Commissioner's website is a model of clarity and brevity (Appendix 1). The basic tenet is that all users should be advised of what information is collected, why it is collected and how it might be used.

Putting it together

So far, I have raised two related issues – the first is confidentiality in tertiary teaching, however it is conducted, and second is privacy in online communication. Confidentiality and privacy are related concepts but they are not identical. Confidentiality refers to information and involves restricting access to personal information. Privacy, on the other hand, refers to individuals. Privacy is a human right – often defined as the right to be left alone. Treating personal information as confidential is just one way to protect the privacy of individuals. We are therefore concerned here with maintaining confidentiality in online learning as a means of protecting the privacy of online students and online teachers.

Applying the confidentiality principle expressed in the *Ethical principles in university teaching* document to online learning might require the following actions:

1. Treatment of student grades, attendance records, and private communications as confidential, to be released only with student consent, or for legitimate academic purposes, or if there are reasonable grounds for believing that releasing such information will be beneficial to the student or will prevent harm to others.

2. Disclosure in full at the beginning of the academic term of all rules or policies that are followed with respect to confidentiality of student records and of privately communicated student experiences.

In the absence of student consent, legitimate purpose or benefit to the student, avoidance of the following practices:

- providing student academic records to a potential employer, researcher, or private Investigator;
- discussing a student's grades or academic problems with teachers other than those directly involved in the course;
- using privately communicated student experiences as teaching or research materials; and
- making grades or corrected student papers or exams available to other students.

In the case of online learning, "private communications" and "privately communicated student experiences" might well be interpreted as any contribution to a workspace that is private to that class

or sub-group of that class. This would include e-mail communications, contributions to a class or group discussion list and tests and assignments submitted for assessment. With this interpretation, it would be necessary to disclose at the beginning of each online subject and to negotiate with the class who will have access to the private class workspace. This also has implications for the use of this material for teaching or for professional development activities, without obtaining prior consent from the student(s) concerned.

Let me turn now to the privacy issues raised in the discussion of online communication above. In general terms, this suggests that all users should be advised of what information is collected, why it is collected and how it might be used. This includes clickstream data provided by the browser as well as by cookies. For online learning, then, we might add the following to the list above:

1. Minimise personal information collected from online students, including that collected from browser clickstream data and cookies.

2. Advise online students what information is collected from them, why it is collected, how long it will be stored and how it might be used.

The contentious area regarding privacy in online learning is not that of transmitting content from teacher to students. Instead, it is in the area of communication between students and between teachers and students–in the use of e-mail, discussion forums and chat rooms. In some ways, an online discussion, whether asynchronous (discussion forum or bulletin board) or synchronous (real-time chat), is similar to a discussion in a face-to-face class that is audio-recorded and transcribed to provide a record of what went on. Under these circumstances in face-to-face teaching, we might reasonably expect that students would want to know why this record is being made, who will see it and how it might be used. Indeed, we would not consider making such a recording without seeking the informed consent of the students involved. What makes online learning different is that the record is an integral part of learning in this environment. The record is the discussion as there can be no discussion without the record. But because the record is essential does not mean that we can take the inherent threats to privacy for granted. We need to spell out clearly to students and teachers how this record will be used and reassure them that it will only be used in their interests.

Privacy and WebCT

How does WebCT measure up as a privacy-friendly online learning environment? We need to start by accepting that WebCT is just a set of tools (WebCT is an abbreviation for Web Course Tools). It has some structural features that generally support privacy and some that generally threaten privacy but, in the end, the level of privacy afforded in a particular subject depends very much on the subject designer and other teachers involved and the way they use the tools available. My comments are based on WebCT as it is currently configured at Victoria University.

Firstly, WebCT supports privacy by providing WebCT ID/password authentication to class workspaces (via My WebCT) that are only available to specified users – course designers, teaching assistants and students. Next, it supports privacy of grades by providing each student with a secure report on their own marks and grades for tests and assignments (My Grades). Teaching assistants are also given access to the grade book for entering grades.

It is, of course, in the communication tools area that most threats exist. WebCT provides an internal e-mail system (Mail) for private one-to-one communication between students and between

teachers and students. This is a reasonably secure system although, as in most e-mail systems, all e-mail messages are recorded and are accessible to the System Administrator, though not to teachers. WebCT does have one serious limitation, though; where there are multiple designers for a single subject, only one can be designated as the "Instructor" and when any designer logs in to WebCT they are given access to the Instructor's e-mail.

In the Discussion area, which is a fairly typical online forum or bulletin board facility, the course designer can set up folders that are open to all class members and teachers involved or only accessible to (and only seen by) members of sub-groups of the class. These can also be set up so that anonymous contributions are possible. Contributors to the discussion can elect to reply to a contribution privately (i.e. by internal e-mail). However, only the Course Designer can see the membership of these groups – neither students nor teaching assistants can check the membership of these groups. It is therefore not possible for students or teaching assistants to determine whether someone else is monitoring the online discussion but not contributing ("lurking"). Also because such a system is based on a record of linked contributions, questions are raised about who will have access to the record now and in the future and how will this information be used.

The situation is similar in the Chat (synchronous discussion) area, where six chat rooms are provided: one for the users of all WebCT courses at Victoria University, a general room for all users of the specific course and four rooms that can be dedicated to different topics or different groups. The discussion in these last four rooms is recorded and a warning of this fact is given on the home page for the Chat facility. These logs are only accessible to the Designer. Users can elect to send private messages to other individuals using the room. The privacy questions here are similar to those for the Discussion area except that the Chat system notifies all users of a particular chat room when other users enter and leave the room, even if they make no contribution. The questions about the use of the recorded log of contributions in the four separate chat rooms is much the same as for the Discussion area.

As for clickstream data provided by the browser, the browser, browser version, remote host and WebCT User ID are tracked throughout the WebCT session. All actions taken by the user are logged and accessible by the Course Designer and the System Administrator. Summaries of these logged actions for all students in the class are available to the Designer and a similar summary of their own actions are available to each member of the class (My Progress). WebCT does use session cookies to avoid requiring users to log in each time they return to the WebCT environment after following external links.

In general terms, the privacy of the user is reasonably well protected in WebCT. Perhaps the strongest threat to privacy lies in the records that are kept in the Discussion and Chat areas and the potential for silent monitoring (lurking) of the Discussion area where students, in particular, cannot check who has access to these areas, including folders for small subgroups. But, as noted above, the major threats to privacy in online learning lie not so much with the capability of the tools to protect privacy as with the actions of those who have control of the environment, the teachers and administrators. A structurally sound set of tools needs to be supplemented by ethically sound practices.

Privacy practices

Privacy guidelines suggest that users should be notified what information is being collected about them, how it is stored and how it might be used. I have suggested that online learners should also know who has access to the virtual classroom. In general terms, this can be accomplished by clear

statements to online learners. Some of this is generic in that it should apply to all users of the online learning environment in the university. Thus, the University of North Texas provides the following generic privacy statement to those who access its WebCT site:

> This Web site (http://webct.courses.unt.edu/) uses browser detection to determine the browser type and browser version of site visitors. This information is used only in its aggregate form, to help us further refine our web site design. The remote host name is collected from each site visitor, and is used only to provide statistical data, specifically, the percentage of "hits" from the UNT domain vs. the percentage of "hits" from outside the UNT domain for this Web site. The pages accessed by each visitor are recorded and preserved in an aggregate form to provide us with information about the relative usage of the pages in our Web site. The web page that referred the site visitor to this UNT Web site is also recorded, and used to improve overall site navigation…
>
> Students and Instructors that log in to WebCT classes have more detailed records. Once logged in with a WebCT User ID, the browser, browser version, remote host and WebCT User ID will be tracked throughout WebCT class activities. All actions taken by that WebCT User ID in a WebCT class are logged and accessible by the WebCT Course Instructor and the WebCT System Administrator (at the request of the WebCT Course Instructor or in the course of diagnosing a technical difficulty). WebCT courses are archived once a semester on the day after grades are due. These archives are kept on tape backup for at least five years. WebCT course archives are accessible by the WebCT System Administrator, and will be accessed only in the event of a request from the Instructor of that course or governing body of the University, or in the course of diagnosing a technical difficulty.

This is fine as far as it goes, but it does not address issues that are local to a particular subject, such as who has access to the subject workspace and what use will be made of the record of contributions in the Discussions and Chat areas. For this, a more specific statement is required, such as this one about how the chat logs will be used from Professor Evelyn Daniel of University of North Carolina at Chapel Hill:

> Chat Rooms: None of the chat rooms in the course environment are private. First, they are open to anyone in the class who enters the “room.” Of course, their identifier appears immediately upon entry. Second, all conversations in rooms 1-4 are automatically recorded. The transcripts from those sessions show up in the instructor’s file space. On occasion, students may ask to have access to those transcripts. As instructor, I will use the following rules:
>
> - I will not look at the transcript unless I was a participant or unless all the participants of the conversation wish me to.
> - I will make the transcript of a conversation available for general use to the class or to a participant who wasn’t there during the session, if and only if I have the permission of every person present at the conversation.
> - Under no circumstances will anything said in a chat room be used in the processes of student evaluation and grading.
>
> And of course, it would be a breach of your duty of confidentiality owed by you to your classmates for one of you to distribute the transcript of a chat room session without first obtaining permission of all those present at the conversation. (Daniel, 1998).

As we develop our expertise in using WebCT for online learning, I hope that we will also develop our expertise in spelling out as clearly and honestly as this how potentially damaging information might be used. Both students and teachers do need to know who is looking in and who is likely to look in in the future. As in other teaching environments, effective learning depends on trust and trust depends on honest, ethical behaviour.

References

Amazon.com (2001) *Amazon.com privacy notice*. [online] Available: http://www.amazon.com [Accessed 6 May 2001]

Australian Privacy Commissioner. (2001) *Privacy Policy. Privacy statement.* [online] Available: http://www.privacy.gov.au/policy/index.html [Accessed 6 May 2001]

Australian Vice-Chancellors' Committee (1993) *Guidelines for Effective University Teaching.* [online] Available: http://www.avcc.edu.au/news/public_statements/publications/gleffut.htm [Accessed 6 May 2001]

BBBOnline (2001) [www.bbbonline.org]

Daniel, E. (1998) Privacy in the WebCT Environment. [online] Available: http://ils.unc.edu/daniel/210user/privacy.html [Accessed 6 May 2001]

Electronic Frontier Foundation. (2000) *EFF's top 12 ways to protect your online privacy*. [online] Available: http://www.eff.org/pub/Privacy/eff_privacy_top_12.html [Accessed 6 May 2001]

Electronic Privacy Information Centre. (2001) *Privacy*. [online] Available: http://www.epic.org/privacy [Accessed 6 May 2001]

Higher Education Research and Development Society of Australasia. (1992)*Challenging Conceptions of Teaching: Some prompts for good practice.* [online] Available: http://www.csd.uwa.edu.au/HERD-SA/conceptions.html [Accessed on 6 May 2001]

Lewis, P. H. (2001) The end of privacy. [Cover story] *Fortune*, 19th March, p. 64.

Martin, D.M., Smith, R.M., Brittain, M., Fetch, I., Wu, Hailin (2001) The Privacy Practices of Web Browser Extensions. *Communications of the Association for Computing Machinery*. Vol.44, No. 2, p. 45

Murray, H., Gillese, E., Lennon, M., Mercer, P., Robinson, M. (1996) *Ethical Principles in University Teaching. Society for Teaching* and Learning in Higher Education. [online] Available: http://www.umanitoba.ca/academic_support/uts/stlhe/Ethical.html [Accessed 6 May 2001]

National Tertiary Education Union. (1998) *NTEU code of ethics*. NTEU, South Melbourne.

TRUSTe (2001) [www.truste.org]

University of North Texas. (2001) *WebCT at UNT. Privacy statement.* [online] Available: http://webct.courses.unt.edu/webct_ps.html [Accessed 6 May 2001]

WebCT.com (2001) *Privacy statement for WebCT.com.* [online] Available: http://webct.com/communities/privacypolicy] [Accessed 6 May 2001]

Appendix 1:
Privacy statement from the Australian Privacy Commissioner's website

Last Modified 1/3/2001

Privacy Statement

Information collected

When you look at this web site, our Internet Service Provider (Telstra) makes a record of your visit and logs the following information for statistical purposes:

- your server address
- your top level domain name (for example .com, .gov, .au, .uk etc)
- the date and time of your visit to the site
- the pages you accessed and documents downloaded
- the previous site you have visited
- the type of browser you are using.

Access to information collected

The Office of the Federal Privacy Commissioner will not make an attempt to identify users or their browsing activities. However, in the unlikely event of an investigation, a law enforcement agency or other government agency may exercise its legal authority to inspect our Internet Service Provider's logs.

Use of information collected

We will only record your e-mail address if you send us a message. Your e-mail address will only be used for the purpose for which you have provided it and it will not be added to a mailing list or used for any other purpose without your consent.

This site does not provide facilities for the secure transmission of information across the Internet. Users should be aware that there are inherent risks transmitting information across the Internet.

Cookies

This web site only uses session cookies and only during a search query of the web site. Our Internet Service Provider has assured us that no cookies are employed on this web site except for those associated with the search engine. The web site statistics for this site are generated from the web logs as outlined above.

Upon closing your browser the session cookie set by this web site is destroyed and no personal information is maintained which might identify you should you visit our web site at a later date.

Cookies can be either "persistent" or "session" based. Persistent cookies are stored on your computer, contain an expiration date, and may be used to track your browsing behaviour upon return to the issuing web site. Session cookies are short-lived, are used only during a browsing session, and expire when you quit your browser.

Appendix 2: Example of a privacy statement for WebCT

Privacy in the WebCT Environment

The online course environment raises several privacy matters that should be understood by all students participating in the class. These matters arise in three contexts:

Chat Rooms: None of the chat rooms in the course environment are private. First, they are open to anyone in the class who enters the "room." Of course, their identifier appears immediately upon entry. Second, all conversations in rooms 1-4 are automatically recorded. The transcripts from those sessions show up in the instructor's file space. On occasion, students may ask to have access to those transcripts. As instructor, I will use the following rules:

- I will not look at the transcript unless I was a participant or unless all the participants of the conversation wish me to.
- I will make the transcript of a conversation available for general use to the class or to a participant who wasn't there during the session, if and only if I have the permission of every person present at the conversation.
- Under no circumstances will anything said in a chat room be used in the processes of student evaluation and grading.

And of course, it would be a breach of your duty of confidentiality owed by you to your classmates for one of you to distribute the transcript of a chat room session without first obtaining permission of all those present at the conversation.

Private File Space: Your private space on the server accessed through the Student Files, Homepage, My Grades and My Access Record is not totally private. The grades and access record are secure spaces in that your classmates do not have access to them, but of course they are not secure from the instructor who will be posting the grades (the access record is automatically tabulated by the computer program).

The Student Files and Homepage are secure from the outside world but your files are intended to be accessible to other students in the class as well as the instructor. Please do not place any confidential files in the course environment.

Private Mail: Your mail is private to you, although as is true of all aspects of WebCT, it is accessible to the instructor. For your ease of mind (in case it's necessary), I will not read any mail not intended for me. If you wish to send messages to the class as a whole, use the Bulletin Board, which is not private.

Evelyn Daniel
School of Information and Library Science
University of North Carolina at Chapel Hill

http://ils.unc.edu/daniel/210user/privacy.html

E-learning: ethics and equity – who owns the content?

TREVOR GERDSEN
The University of Newcastle

Debate on the issue of ownership of copyright in course materials often focuses on the perceived economic benefits attaching to ownership rather than the needs of the respective parties to use course materials in certain ways. Between these two positions, there exists a multitude of interests, concerns and options that impact upon and define an increasing amount of the work of academics in the Australian university context. The e-learning environment brings into focus the question of academics' rights, but also their responsibilities to the institution and to the wider community, including copyright owners whose works they seek to utilise in the e-learning environment. This paper looks at some of the attendant issues in ownership of courses and course materials in the e-learning environment and proffers some suggestions toward possible solutions.

Development of course materials in the e-learning context generally is not the solitary exercise which accompanies the generation of the more traditional 'lecture notes', either used as reference by the lecturer or handed out to students. It is often a team-based exercise or one in which significant input and assistance is provided to the academic developer by technical and other experts within the institution. This matter in itself raises substantial ethical and equity issues beyond the immediate concerns of the academic developer, notwithstanding matters of ownership of the copyright and moral rights in the resultant or embodied works.

In addressing the question, this paper has been constructed around a number of connected themes. It begins with a brief look at the elements of the e-learning environment which impact upon the question of ownership of copyright in teaching materials and which might be different from traditional classroom or lecture-based approaches. Second, there is an examination of the existing system of distributing ownership rights in teaching materials. Third, there is an analysis of the intellectual property issues raised in the e-learning context and how can these be reconciled with our purposes and needs as individuals and as institutions. Lastly, some of the solutions or strategies to address this issue and ensure that equity for all parties, are addressed.

Prior to this, it is informative to consider some of the issues and matters which underpin the overall question of ownership of course materials in e-learning. This may provide contextual understanding for the discussion of the themes identified above and which the bulk of this paper subsequently attempts to address.

The scope of discussion

Intellectual property is a broad term covering many categories of creative works and inventions. In the context of e-learning, discussion of intellectual property issues is fundamentally a discussion of copyright, and this paper confines its focus to that category. The copyright works in e-learning might be in the form of teaching materials, exercises or lecture notes prepared by the academic, or information resources in the form of texts, journal articles, video and multimedia and other resources created by the academic or other authors. These might be developed by the institution in support of an e-learning project, but might also be used with permission or under statutory or other licence

agreements, or under a specific provision of the *Copyright Act.* In e-learning, there will also be intellectual property issues in connection with the creation and use of computer-based learning and management systems (BlackBoard, WebCT, TopClass etc.), but these are not the focus of this paper.

The question of ownership of copyright in teaching materials, in addition to other scholarly works, excites much passion and debate in the academic world. The bibliographic references to this paper attest to just some of the scholarly inquiry in recent years into the issue of intellectual property in universities, while the higher education and popular press have provided a vehicle for a more general debate of the subject over the same period. As Carol Twigg notes in her Report, most published articles on the topic of ownership of course materials identify a need for a clear statement of ownership as a prelude to any project development; but the real challenge for higher education institutions is not so much this as in deciding "what their policy should be." Even when an institutional Intellectual Property policy does exist there is often no strong conformity to it (Twigg 2000, pp.1-2). This is a problem which afflicts not just the development and ownership of course materials, but also the use of third-party copyright materials within institutions more generally.

Copyright, to many academics, is sometimes perceived simply as an impediment to getting on with their job. As Janet McCalman wrote in 1995, "Copyright as it has been experienced by most academic writers is about money and tiresome bureaucracy, and they certainly haven't the time to seek permission and pay the copyright fees…". While this reference was in connection to the use of third-party material in scholarly works rather than in course materials for e-learning, it nonetheless highlights the dichotomy which afflicts much of the debate – the conflict between ownership and protection of one's own works and the perceived restrictions imposed by copyright in making use of everyone else's.

On the one hand as academics, authors and creators, we seek recognition and reward for our own works, and seek to have some say in how those works might in future be used and disseminated. In short, we want to assure our moral rights in the work are respected and at the same time be acknowledged and remunerated for their use. In accessing the works of others--third-party works, in connection with our teaching, research and writing, our practice is sometimes at odds when viewed against this preferred approach to our own works--though not always, one would hope. There is often a significant focus on the potential or perceived pecuniary rewards that will flow from the "exploitation" of the works, despite our experiences to the contrary in most cases. The focus on potential pecuniary rewards, often blurs our achievement of rational solutions to the question of ownership in and use of, course materials:

> …most online courses and the materials contained within them are not valuable enough in economic terms to result in much, if any, corresponding pecuniary rewards. It is unlikely that even a small percentage of faculty or institutions will experience any commercial success whatsoever, just as it is unlikely that most faculty member's lecture notes will become successful textbooks… (Twigg 2000, p.17)

Anne Monotti in a 1997 survey of academics at Monash University found that while 29.8% of respondents create teaching materials in a format suitable for commercialisation, only 68% of these felt that personal financial rewards from commercialisation was important as a right. While this figure is relatively high, it should be seen against the reality for the total respondents, of whom only 1.9% were actually receiving royalties or some other form of financial return from such commercialisation (Monotti 1999, pp.443-444).

A key finding of the 1995 review of Crown copyright for the *Victorian Vocational Education and Training System* notes that copyright "is valued more for the 'market edge' it offers training providers

than the potential to make commercial profits from sales" (Coopers & Lybrand 1995). While referring to training materials in the VET sector, the analogy with copyright in online course materials in universities is relevant, and perhaps more so. That market edge, the report also identifies, has a very short life, perhaps only a couple of years, before a competitor will have their own adaptation or version on the market. In this context, ownership of copyright as provided for in the *Copyright Act* (for the life of the author plus 50 years (subsection 33 (2)) would appear to have little relevance. But that's another matter.

Some writers on the subject of ownership of course materials in the online environment, have asserted that universities seek this on the basis of then "hiding it from most of the world" (Newmarch 2000). If the inference is that institutions restrict access to online courses and ownership is intimately connected with attainment of this objective, it warrants noting that it need not be so. If the inference is that they own it in order to simply hide it from anyone and everyone, it would appear to be fundamentally flawed as a policy. As the NSW Audit Office notes, "Ownership of IP of itself does not generate a return to the originator. A return or benefit is derived by the exploitation of the IP" (2000, p.42).

The issue therefore, may be more appropriately addressed in terms of the purpose to which the work can be used, under what terms this might occur, and what benefits might accrue to the relevant parties, rather than ownership in the first instance.

The question of purpose should be fundamental to our considerations, as it informs what rights we might seek, both as individuals and as institutions in course materials developed for e-learning. It should precede consideration of the question of ownership and certainly precede formulation of policy. Once we understand what we want to achieve, we can design and implement policy which will assist us in achieving that aim in a context sympathetic to all parties' interests. This point is reinforced, indirectly, by the Australian Copyright Council:

> The trend to adopt a blanket approach to intellectual property ownership within universities does not make allowance either for the nuances of traditional university culture, or for the rights of individual creators within universities. (ACC 1997, p.39)

Nonetheless, the purposes for which higher education institutions might presently seek copyright ownership in course materials might not necessarily be at odds with the purposes of the academic or others who contribute to the development. Furthermore, copyright rights are divisible, a point too often overlooked in the construct of policies and procedures to underpin management of e-learning and other course developments, and instead an all-inclusive grab is made for copyright ownership in the works and all rights which attach to that ownership. Identification of purpose becomes relevant in asking the question why universities may seek copyright ownership in the first instance. One purpose might be as Burk (1997) notes, to control dissemination of education materials and ensure continued access to key course material. A crucial concern in this is to retain rights to adapt and continue to develop the materials for future use – an important consideration for institutions in e-learning and any distance education program, where the investment by the institution in developing the materials and support services may be considerable, and the nature of their future use, collective and iterative.

The Australian Copyright Council notes that in the absence of clear and effective policies and contracts in this area, academics and developers may be placed at the mercy of outmoded policies or of the general rules of ownership as defined in the *Copyright Act*. The latter is not an optimum

situation, as these "…can sometimes be difficult to interpret and can have unintended consequences" (ACC 1998, p.16). Academics generally, aside from issues of integrity and respect for their moral rights in the work, also want some assurance that they can continue to use materials into the future "with freedom and integrity" (ACC 1997, p.38). This is the question of portability, the capability to use materials at a new institution at some future stage of an academic's career. In the academic's present role, they might utilise these materials in a particular subject development, and they may want to continue to develop, adapt and improve these teaching resources irrespective of copyright ownership residing with the current institution for its particular purposes. Ultimately, however, they may want to carry these materials with them in some form to a new employer, if the situation arises. These then, are the issues to which our discussion now turns.

The e-learning environment

It is not the purpose of this paper to discuss the efficacy of e-learning as an educational methodology. Rather, the focus of the question is whether there are aspects of e-learning which are sufficiently different or distinct in comparison to the more traditional teaching practices, that may require new approaches to ownership of copyright in teaching materials, and concomitantly, whether this may include equity or ethical issues for those involved.

In 1994, writing on the issue of ownership of copyright in traditional literary works within Australian universities, including course materials, Anne Monotti noted that "University copyright ownership seems appropriate here (distance education and open learning programmes) as these works resemble the traditional employee works produced for the employer and at its request" [2](Monotti 1994, p.357). Continuing with the theme in 1999, she notes that works "created for use in distance or on-line environments have an intimate connection with an employer's business" (Monotti 1999, p.445). As Monotti discusses at length in both papers, this connection of itself may not be sufficient to ensure that the law recognises the institution as owner rather than the academic creator. It is a matter that remains untested to a large extent. Nonetheless, the perceived strong link between the creation of such works and the nature of the employer's business, and thus the duties of the employee – in this case the academic, is a factor influencing institutions to assert their rights in this instance. Another is internationalisation in the higher education market, where institutions may seek to protect their commercial position. This point was noted by Leanne Wiseman in her occasional paper for DETYA-– "With the creation of potentially worldwide markets for online courses, universities may now see the potential for commercial exploitation of such materials" (Wiseman 1999, p.24). Such commercial exploitation was absent from much of the traditional approach to delivery of university courses and existing conventions in granting copyright ownership evolved in this context. There is a direct connection between commercial exploitation and the rights of the copyright owner, but as will be discussed later, this objective can be achieved through effective allocation of rights rather than outright ownership *per se*.

Monotti also identifies several factors with e-learning that have influenced universities to re-assess and broaden the scope of their IP policies with respect to ownership of teaching materials. These include the potential for worldwide distribution of education via the Web, and the relative ease with which course material can be made available and online courses mounted on the Web (Monotti 1999, p.426). Burk (1998) identifies the Web's ability to enable educational institutions to adopt new low-cost strategies for preparing and widespread dissemination of teaching and learning materials and scholarly publication. Almost any institution can become a publisher, he notes, although it may be arguable whether the preparation of materials for e-learning is truly low-cost, and whether institutions are capable of or interested in emulating the activities of commercial publishers.

Nonetheless questions of the input costs being either too high or too low have not overly driven the adoption of e-learning strategies within higher education thus far, but have caused institutions to re-assess what they receive in return, including ownership of the teaching materials produced.

It is appropriate at this point to review some of the approaches and issues which define the existing system and how it deals with ownership of copyright in teaching materials [3], before considering the questions raised in balancing our purposes, rights and responsibilities in this context.

The existing system of allocating ownership rights

The Copyright Act (Section 35 [6]) contains specific provisions relative to the ownership of copyright in works. These include provisions where the work is created by an employee in pursuance of the terms of their employment. Debate has long reigned as to whether scholarly works created by academics, including teaching materials, are works created in pursuance of the terms of their employment, and hence, belong to the employing institution, or whether these are works in which the author--the academic--retains copyright. Some of these issues warrant discussion here, but notwithstanding this, the general practice "…has been such that universities have allowed academics to exercise the rights of ownership of copyright in works created by them" (Wiseman 1999, p.23). Wiseman continues with the observation that "the implied term that vests copyright in the academic author is one which universities may no longer accept …" She lists a number of reasons for this, including sector-wide payments to CAL for the photocopying of works, the creation of (potentially) valuable computer programs and electronic databases, and the general preference to "clarify ownership expressly rather than rely upon untested implied terms to exert ownership" (paraphrasing Monotti, 1994).

Ricketson noted in 1993 that "loose conventions governing copyright" defined the existing system of allocating rights. While much university attention has been, rightly, focused on patents, Ricketson notes that this attention has the potential to obscure other rights which may be more relevant and in the longer term, prove to be far more important than patents. Copyright, he notes, "is the outstanding regime here" (Ricketson 1996, p.40). Such observations, in the context of the development of online and e-learning in recent years, now have substantial relevance.

The nature of e-learning and the changes it requires not just in teaching practice but in development and the involvement of a range of technical and other professionals in creation of the learning resources, has forced some re-thinking of this general practice or convention. The e-learning environment inexplicably links the teaching and learning process with the activity of the institution. The old paradigm where institutions took little interest in ownership of copyright in teaching materials and vested all copyright in their staff, is no longer sustainable in the new environment, which is characterised by rapid changes in technology and increasingly, application of technology to the production of educational materials (Monotti 1999, p.433).

Many distance education providers have long made a distinction with their course materials, such as study guides and subject work books, taking direct steps to assure their rights in the works, rather than relying upon untested application of the principles of ownership as defined in the Act, custom within the sector or implied terms to deliver them these rights. Deakin is one such university, which "added clauses to individual contracts to ensure that the University retains rights to teaching materials…" (Spearritt & Thomas 1996, p.30). More recently, as universities have become aware of the increasing potential for exploitation and commercialisation of copyright, their contracts of employment often now include express terms relating to ownership of copyright (Wiseman 1999, p.28).

There is a challenge for universities which have not traditionally been involved in distance education at a mainstream level (which is probably the majority) but for whom online and e-learning are now becoming an important if not essential part of their activity. The traditional distance education providers, as Spearritt and Thomas note, generally evolved policies and practices which assured they obtained the rights they required, and both custom and the expectations of academics within those institutions evolved within this context. Other attitudes and custom may define the practice elsewhere, and this may or may not be reflected in the policies and practices of those institutions.

The Australian Vice-Chancellor's Committee, in its 1995 Discussion Paper, advised that it is "impossible to provide guidelines which will assist in the determination of ownership in individual cases", but that it would "…be sensible for institutions to look to clarify ownership by agreement, wherever this is practical" (AV-CC 1995). In instances where ownership of copyright in teaching materials, and e-learning materials in particular, remains untested and left to either general principles or institutional convention to determine, the potential for conflict and disagreement remains considerable. The preferred approach, as the AV-CC argues, is one which clarifies ownership expressly by way of an agreement. An agreement, notes Monotti, "creates some equitable rights in the intellectual property in the university". She further identifies that the mere provision and use of university equipment or facilities, use of university-owned intellectual property, or provision of university funds on their own fail to give the university an enforceable claim to the intellectual property (Monotti 1997, p.454). The key is the formation of an express agreement defining the rights of the creator and the institution in the work.

As discussed, the existing system of allocating rights is one which, in many cases, remains based upon custom and practice or loose conventions. The traditional distance education providers tend to have systems in place, as well as an institutional culture, which accepts (not necessarily benignly), that the institution will retain certain rights, if not total ownership in, teaching materials for distance education. Many other universities have updated and aligned their IP policies and practices to more expressly underpin their objectives in distance and online delivery. Clearly however, the issue raises as many questions as it resolves. It is perhaps worthwhile to consider the issues in the context of our purposes as individuals and as institutions, and to reflect upon what rights we may require, in that context, rather than focus on the question of outright ownership *per se*.

Defining the issues and our purpose

Two academics from Charles Sturt University in a 1999 discussion note, ask: "How is it possible for individual academics to preserve their intellectual independence … if they do not own their ideas and control their dissemination" (Alexandra & Miller 1999, p.95). This point was also identified by Dan Burk in 1997, noting that opinions and commentary suggested that if colleges and universities could control academic output, "that principles of academic freedom of thought and expression might be unduly curtailed". Janet McCalman expressed similar concerns, raising the "potential for interference, censorship, sabotage and distortion of texts when they are not owned by the creator", in reference to university ownership of academic's scholarly works (McCalman 1995). It needs to be borne in mind that only the first comment above was concerned directly with teaching materials, the others addressing scholarly works in general. Nonetheless, it highlights the concern among academics over the integrity of their works, and their desire to have some say in how those works are subsequently used and disseminated when the institution may retain ownership of them.

Our discussion is concerned only with teaching materials--imperfect as that definition may be. Ideas and information are not the subject of copyright protection[4] --it is only the form of expression which is capable of protection. Discounting George Orwell, there does not appear to be any ready

comment or research available into whether educational institutions have any interest in asserting control over the ideas of their academics *per se*, or more particularly, seeking to own those ideas – at least where teaching materials are concerned. Certainly, as discussed in the preceding sections of this paper, they are interested in owning or having the relevant rights in teaching materials so that they can continue to use and update them for their current and future purposes, and no doubt, to simplify administrative arrangements. Concerns about the potential for their work (in the form of teaching materials) to be distorted or for the contribution of the originator to be ignored, have been addressed in recent months with Australia's adoption of moral rights legislation, notwithstanding some limitations. This addresses, again in part, Anne Monotti's point that "…institutional copyright ownership conflicts directly with the author's concern to protect the integrity of the work, to be properly acknowledged as author and to publish the work" (Monotti 1994, p.361). The right to publish is not a moral right, but one of the exclusive economic rights of the copyright owner. It is also one of those rights which an institution may seek from a creator, by way of ownership, or a limited assignment or licence, and one which it would certainly seek to exercise either in print, online or some other medium.

Publication of the work, at least as far as teaching materials are concerned, may not hold the same passion for academics as it may for other scholarly works, such as text books and journal articles, although this is arguable. The case in point is perhaps that for many academics, teaching may be the primary focus of their career and the principle source of credit toward promotion and recognition. Certainly this would be so outside the university sector, with teachers in the vocational education and training and schools' sectors. However, as Monotti notes in her discussion, it is unlikely that the majority of academics will have the requisite skills in this area (i.e. publishing) and it may be preferable for the university to undertake this role "without restraint" (Monotti 1994). The challenge is to identify an approach which balances the needs of the educational institutions in this instance, with those of the academics.

McCalman asks who, in the absence of a self-interested party (such as a publisher), will go out into the marketplace and defend the copyright and who will fight for the academic's rights in their scholarly works? (McCalman 1995). Ricketson, by way of contrast, notes that the exploitation of much of the copyright material in universities "is of no real importance", while the cost of administering the rights "may well outweigh the possible financial return and impose unacceptable burdens on the relevant University officers" (Ricketson 1993), a point also identified by Burk (1997).

It is worth pausing at this juncture to consider the nature of teaching materials. We can become increasingly focused on the form and integrity of teaching materials as if they may be fixed at a particular time and space and remain so. Perhaps contrary to other published scholarly works, teaching materials, as they are utilised, are often in a state of constant evolution, even if they are never "published" or even handed out to students as a photocopy, for example. As teachers and academics, we continually modify, adapt and improve our teaching resources, individually and collectively. While these works and the rights within them might often be "…numerous and of limited pecuniary value", as Ricketson notes (1993), the rights which matter to academics – moral rights such as recognition for and integrity in the work, and others such as the right to be consulted about future changes or commercial exploitation, and perhaps to a share of any profits from successful exploitation, may not impose undue management and administrative burden on educational institutions to address. Certainly, defence of the copyright in the marketplace is an expensive exercise and, in the case of teaching materials, may well be secondary to other matters in importance. Given the earlier comments about the length of time an institution can expect its copyright in teaching materials to deliver it a market edge, and the constant iteration of such

materials, it is arguable whether this is as big an issue as we sometimes perceive it, particularly in the online environment.

The AV-CC, in its *Discussion Paper*, believes that the legal ownership position can be addressed through more precisely defining the duties of the staff member in a contract of employment (AV-CC 1995, p.9). Certainly, such an approach has the capacity to remove any doubt over the ownership issue, but whether it is equitable and would allay academic concerns as identified above, is problematic. Perhaps before moving toward this solution, institutions should first determine their objectives, as dictated by academic and business concerns, as Burk suggests (1997).

One of the primary equity concerns for academics, will be the capability to use the learning materials in a subsequent position (Monotti 1994, p.361). This may be in an evolutionary rather than absolute sense. But it cuts both ways. When an academic retires or resigns to move to another institution, the teaching materials, which may form the basis of an online course at the university, will most likely form the basis upon which a new staff member or their former colleagues produce new or updated materials (Monotti 1994, p.360). This point is also noted by Saunders, with reference to course materials that have been collectively produced. The departure of an individual from the institution, he notes, should not prevent the further use of the materials by that former employer (Saunders 1994). And equally, the academic author will most likely wish to continue to use those teaching materials at their new institution, albeit in a modified or new form.

Our attitude to copyright in our teaching materials is all too often in stark contrast to how we deal with copyright in our other scholarly works, such as text books and journal articles. In the latter in particular, Wiseman notes, we all too frequently assign our copyright to publishers without first having reserved rights to future or other uses. Wiseman argues that academics need to be persuaded, by their universities perhaps, "to examine publishing contracts more carefully and to be less cavalier to assigning their rights to publishers" (Wiseman 1999, pp.35-36).

The issue of monetary reward arises in the context of copyright and equity. Traditionally, many universities have made provision for researchers and academics to share in any successful commercial exploitation of inventions and discoveries, through express terms in their IP policies with reference most commonly, to patents. While the potential for successful commercialisation of teaching materials and courses may be slight, and the likely pecuniary rewards scant, this has never been an obstacle to such recognition in the case of patents. Like inventions and scientific discoveries, teaching materials would not have been produced without some creative efforts on the part of the academic and as Ricketson notes, "such ingenuity is worthy of reward" (1993, p.7). Referring to a survey of academic staff at Monash University conducted in 1997, Monotti identified six express rights with respect to the products of their teaching and found that the majority of staff ranked the right to publish and the right to acknowledgement as the most important of these.[5] Personal financial reward was ranked "most important" by 20.4% of the respondents, but this was still significantly less than the right to publish and the right to acknowledgement, at 60.8% and 31.7% respectively (Monotti 1999).[6]

Balancing interests and responsibilities

In this paper we have noted, though not explored, the concept of allocating rights in copyright works to address the needs of both an academic and their employing university. Often the difficulty in addressing this aim, Burk (1997) notes, is in defining the needs and expectations of the parties. Reconciling the two perspectives is not dissimilar to any negotiation where objectives and claims may, *prima facie*, be seen as mutually exclusive and absolute.

Rather than a focus upon ownership *per se*, addressing the distribution of the rights that comprise ownership is likely to provide a more constructive approach to balancing interests (Monotti 1999, p.441) and consequently ensure an element of equity in the outcomes for both parties. There needs to be an understanding that while there can be joint ownership of copyright, this is not necessarily a desirable nor workable solution, particularly in the case of teaching materials. To explore the point, joint ownership might generally be associated with works of two or more authors, for example a Lennon-McCartney song, or jointly-authored text book. In the case of a university and academic sharing ownership, this analogy is relevant if only for the differences it highlights. The university in this example, is not an author or creator. In seeking ownership, it does so from a different perspective to that of the academic or other author. The university will generally be in a better position to manage and protect the copyright although, as noted earlier, in practice this may be of lesser importance than other considerations.

If, as academics and creators, we can identify those rights in our teaching materials that are important to us in both the current and future sense, and embed these in an agreement with our employing universities, allocation of copyright ownership in those works to the university should not be cause for concern. The university can be granted ownership, with particular rights attached to that ownership, along with a recognition of those rights attaching to the creator, and identification of the responsibility of the institution to consult with the creator or act in a particular manner in exercise of those rights it retains.

Stein identifies some of the issues which may impede academics and other creators fully exploring new learning technologies such as e-learning. Principally, Stein (2001, p.28) believes that there will be an unwillingness to be involved on the part of creators if they are not assured of appropriate rewards – both in terms of control of copyright and in terms of promotion and tenure. Whether control of copyright implies ownership per se or control of those rights which would be regarded as important, is not indicated. Promotion and tenure may be more important for some of the technical and other specialists involved in e-learning developments than they are for academic developers, because other considerations, such as research and publication, tend to be the more important criteria for promotion for many academics.

Nonetheless, the question arises whether the concerns of academics alone, represent the sum total of creators in the e-learning context. Stein notes that in both the development stages and the instructional stage, "new educational technologies require skills substantially outside the training of most academics…" and that they "…can no longer develop, by themselves, courses that fully integrate the possibilities of the new educational technologies" (Stein 2001, p.28). Certainly there will be individual academics who create their own web pages and online courses. Whether these are truly e-learning, or represent sound pedagogical practice is a matter outside the scope of this paper. Nonetheless institutional policies and approaches need to be cognisant of the fact that the creative input into e-learning course developments is frequently driven by technical and other professionals in equal or other measure with the academic developer. This, of itself, raises issues of equity, reward and recognition. The employment status of such staff may be more straightforward with respect to interpretation of the duties of employment, but it is far from absolute.

Ownership of copyright carries with it certain rights and responsibilities. It can also give rise to potential liabilities. The AV-CC, in its 1995 *Discussion Paper*, identified that universities may be faced with considerable liabilities in respect of intellectual property with which they are associated, but over which they have not exercised a great deal of control (AV-CC 1995, p.31). Vesting ownership of the intellectual property in teaching materials in the employing university may not lead to any greater

control over this potential liability on the part of the institution than presently exists. However, the nature of e-learning lends itself to a greater ease and level of scrutiny (internal and external) and administrative oversight. Where the scope of ownership has been defined, the basis exists from which institutions may be able to obtain some audit of their existing intellectual property "repertoire", something which it is likely that only a handful of institutions would have at the present time. Knowing what intellectual property you have is one step in minimising potential risks associated with that IP, but also in implementing effective administrative and other systems to protect and manage it.

Alexandra and Miller offer a solution to these potential liabilities, suggesting that ownership of copyright by academics provides incentive for them not to defame, plagiarise or infringe. With self-interest at heart (they claim), universities should vest copyright ownership in the academic. Their assertion is that this will provide the necessary incentive "for an academic with ill will towards their university employer to exercise due care and diligence in relation to defamation, plagiarism and copyright infringement" (Alexandra & Miller 1999, p.95). But, as Monotti notes:

> The liability of the university for breaches of copyright occurring in works authored by its employees in the course of their employment will not have a significant influence on the ownership debate, but is relevant in the overall balancing and assumption of rights. (Monotti 1994, p.343)

Certainly, where an infringement of copyright may be identified in learning materials created by an academic in the course of their employment, then irrespective of where ownership resides in those materials, the university will be vicariously liable. However, as Monotti also notes, this "vicarious liability in no way exempts the employee from personal liability for direct infringement" (Monotti 1994, p.343). Implicit in Monotti's comments is the concept of equity in balancing rights between the institution, as owner in this instance, and the creator. In terms of ethics, it would appear more appropriate to rely upon the professionalism of academic staff in this instance, than upon such "incentives" as Alexandra and Miller identify.

What solutions will assist us to achieve our outcomes as individuals and as institutions?

As already suggested, a system of allocating rights in ownership rather than outright ownership per se, has the capacity to address the needs of creators and institutions alike. The process by which this might be achieved, however, may require substantial effort within institutions. This will include identifying those rights which each party regards as important, and obtaining consensus on the allocation of these. As Monotti's survey at Monash demonstrated, while there may be general agreement about which rights are the most important among academic staff, this is not unanimous, and the subtleties and nuances need to be addressed. Whether, ultimately, the ownership of copyright in teaching materials vests in the university or the creator, remains an issue for resolution in tandem with the allocation of rights.

Ricketson argued in 1993 in favour of universities not enforcing any claim of ownership, "…subject to the retention of any necessary licences permitting the University to make such use of the material that is necessary for its own purposes" (Ricketson 1993, p.7). Nonetheless this requires that appropriate legal instruments be created to meet that objective, as would, equally, the opposite approach where ownership was sought in favour of the university. The necessity to review policies and other instruments is necessary if universities are to bind all staff to whatever provisions they may determine for allocating ownership and other rights in teaching materials created for e-learning.

Merely changing the IP policy may not of itself bind existing staff to any new provisions, in the absence of some process of agreement (Monotti 1997, p.458). This may occur through incorporation of appropriate provisions in individual contracts (p.431) or as part of an enterprise agreement process.

As has been discussed, many of the practices within universities in allocating copyright rights in teaching materials, among other works, have evolved through convention and practice, and to a large extent have become either implied terms and conditions of employment, or alternatively, duties and responsibilities of the employee.

Creating the appropriate mix of rights in any agreement between institutions and their staff will be fundamental to the successful implementation and management of intellectual property within institutions (Monotti 1999, p.421). The range of rights sought by academics and other creators may vary slightly, but it seems that fundamentally, the most significant to academics in respect of their teaching materials are "moral rights, publishing rights and the ability to use all literary works in future employment without restraint" (Monotti 1994, p.369). Whether these rights transpose into the e-learning context, or whether others might be seen as more important, is an issue worthy of future investigation. Monotti's 1997 study was relatively small and confined to one university, but identified rights important to academics at that institution. As has been noted, universities for many years showed little interest in the intellectual property of their academic staff, in particular teaching materials. The evolution of e-learning has forced a shift in their thinking, and it is possible that academic staff and others contributing to e-learning developments in universities, may have undergone an equal shift in attitudes to what they consider important.

Concluding remarks

Copyright, while it can often excite considerable emotion in the academic community, can likewise produce considerable indifference, much to the lament of those within the institutions charged with its administration and promulgation. Mark Chase, although commenting on the US situation, might equally have been referring to Australian higher education:

> The educating of academia still needs to be continued. While many educators and media professionals claim to be well acquainted with copyright law, in truth they are still in need of clarification of the more difficult areas. Until they fully understand the law, they will be restricted by conservative policies mandated by copyright producers and academic administrators. (Chase 1998)

E-learning, because it is more intimately connected with the institution and its presence in the higher education marketplace, is by consequence likely to be less individualistic and more collegiate in its development, as noted in earlier comments about the levels of technical expertise and professional input required. The likelihood that e-learning developments will be team-based raises a new set of issues for institutions with respect to allocation of intellectual property rights. In the case of copyright in teaching materials, institutional IP policies have not traditionally addressed a team-based approach to development of these in the same way that they may have made provision for team-based approaches to research or scientific innovations and discoveries. Agreements and contracts have been used for many years, and effectively so, by institutions involved in distance education. But for many institutions without a history in this area, technological developments, changes in the higher education marketplace and the initiatives of their academic staff have in many instances, raced ahead of the re-alignment of policies, agreements and other legal instruments underpinning ownership of course materials, which remain embedded in a past paradigm.

If universities are to be successful internationally in e-learning, they will need to be competitive and innovative. To do so, they will need not only the cooperation of their staff, but innovative and committed teaching and development staff. As Anne Monotti notes, they are more likely to achieve that co-operation "…if their policies produce a balance of the rights in the intellectual property that is acceptable to all parties" (Monotti 1999, p.452).

References

Alexandra, A. & Miller, S. (1996) Teaching Materials: A copyright nightmare. Campus Review. Vol.6, No.17, May 8-14, p.8.

Alexandra, A. & Miller, S.(1999) Copyright in Teaching Materials. Educational Philosophy and Theory. Vol.31, No.1, pp.87-96.

Australian Copyright Council (1997) Teachers and Academics as Creators: A Discussion Paper. ACC, Sydney.

Australian Copyright Council (1998) Copyright in Training Materials: A Practical Guide. ACC, Sydney.
Australian Vice-Chancellors' Committee (1995) Ownership of Intellectual Property in Higher Education Institutions: a Discussion Paper. AVCC, Canberra.

Burk, D.L. (1997) Ownership of Electronic Course Materials in Higher Education. CAUSE/EFFECT, Vol.20, No.3, pp. 13-18.

Burk, D.L. 1998, Ownership Issues in Online Use of Institutional Materials. CAUSE/EFFECT, Vol.21, No.2, pp. 19-27.

Chase, M.E. (1998) Educators' Attitudes and Related Copyright Issues in Education: A review of selected research 1980-1992. Available at URL: ftp://ftp.lib.ncsu.edu/pub/stacks/mcj/mcj-v1n01-chase [accessed 31 May 1999]

Consortium for Educational Technology for University Systems (CETUS) (1997) Ownership of New Works at the University: Unbundling of rights and the pursuit of higher learning. Discussion Series. California State University.

Coopers & Lybrand Consultants (1995) Crown Copyright in the Victorian vocational education and training system: A model for the future. Report to the Office of Training and Further Education, Victoria, July.

Lawnham, P. (2000) Notes par for the course. The Australian Higher Education Supplement, July 26, p.46.

McCalman, J. (1995) Copyright and Scholarship. Why it matters for academics. unpublished paper obtained from the author, 17th November 1995.

Monotti, A.L. (1994) Ownership of Copyright in Traditional Literary Works within Australian Universities. Federal Law Review, Vol. 22, pp. 341-374.

Monotti, A.L. (1997) Who Owns My Research and Teaching Materials – My university or me? Sydney Law Review, Vol. 19, pp. 425-471.

Monotti, A.L. (1999) Allocating the Rights in Intellectual Property in Australian Universities: An overview of current practices. Federal Law Review, Vol. 27, pp. 421-470.

Morrison, V. (2000) The New Moral Rights Legislation. Copyright Reporter, Vol.18, No.4, December, pp.170-180.

Newmarch, J. (2000) Who Owns University Web Courseware? Available online at http://pandonia.canberra.edu.au/ausweb00/paper.html [accessed 12 July 2000]
New South Wales' Audit Office (2000) Performance Audit Report: Academics' paid outside work. Sydney.

Ricketson, S. (1993) Intellectual Property Rights in the Australian University Context: An overview. Australian Universities' Review.Vol.36, No.1, pp. 5-7.

Ricketson, S. (1996) Universities and their Exploitation of Intellectual Property. Bond Law Review. Vol. 8, No. 1, June, pp. 32-46.

Saunders, D. (1993) The Intellectual Property of Academics as Teachers, Scholars or Researchers. Australian Universities' Review, Vol. 36, No. 1, pp. 2-4.

Spearritt, P. & Thomas, J. (1996) Academic Intellectual Property in a New Technological and Industrial Context. Australian Universities' Review, Vol. 39, No. 1, pp. 29-33.

Stein, S. (2001) The Media Production Model: An alternative approach to intellectual property rights in distributed education. Educause Review,Vol.36, No.1, January/February, pp.26-37.

Twigg, C. A.(2000) Who Owns Online Courses and Course Materials? Intellectual Property Policies for a New Learning Environment. The Pew Learning and Technology Program, Center for Academic Transformation, Rensselaer Polytechnic Institute, New York.

Wiseman, L. (1998)Trade in Education:The role of copyright. Prometheus, Vol. 16, No. 3, pp. 331-339.

Wiseman, L. (1999) Copyright in Universities, Department of Education, Training and Youth Affairs, Occasional Paper series 99-E, Canberra.

[1] *Campus Review, The Australian Higher Education* supplement and The Age, have all carried many articles and general comment on the intellectual property policies of universities and academic rights in teaching materials and other works in general over the past decade.

[2] This alludes to subsection 35(6) of the *Copyright Act*, which grants an employer ownership of copyright in works produced by employees in pursuance of the terms of their employment.

[3] For a more extensive discussion of ownership of copyright in course materials, particularly the underpinning legal issues, *inter alia*, see Monotti (all) and Wiseman (1999).

[4] Some protection for ideas and information is available under the common law action for breach of confidential information, but this may not be relevant to teaching materials, as these would not generally have an element of confidentiality about them.

[5] A number of respondents did not rank rights, but listed all as of equal importance, hence the sum of the response percentages are greater than 100. The questionnaire is detailed in Appendix A to Monotti, (1999). The six rights can be summarised as:

- the ability or right to publish;
- rights to personal financial rewards in addition to salary where there is successful commercialisation;
- acknowledgement of creative contribution;

- participation in negotiations for commercialisation;
- the ability to continue using teaching materials in future employment; and
- the ability to control or approve any changes or adaptations.

[6] The right to acknowledgement is now addressed in some part by the introduction of the *Copyright Amendment (Moral Rights) Act 2000*. Equally, the ability to control or approve changes or adaptations may also come within the scope of the Moral Rights legislation, although the "reasonableness" and "consent" provisions may limit this in practice. See Morrison (2000) for a discussion of this issue.

Who owns the curriculum?

DENISE KIRKPATRICK
University of New England

E-learning has been enthusiastically embraced by institutions, administrators and individuals who recognise its potential to increase access to resources and information, open up new markets and provide a competitive edge. Teachers and learners have responded in a variety of ways ranging from enthusiastic adoption to scepticism and mistrust. The insertion of new technologies into higher education presents both opportunities and threats for teachers and learners. In this paper I want to focus on questions relating to ownership of the curriculum.

Questions of curriculum

The notion of curriculum ownership is in itself problematic. My consideration of curriculum 'ownership' is informed by the following view of curriculum:

> Central ideas of curriculum are clear enough: These are the concepts of structure, sequence, and completion … Without structure, sequence and completion we can have learning, we can have teaching, we can have education but we cannot have curriculum. And structure, sequence and completion are all universal notions that require the intervention of organizations and institutions to establish them in the public domain. (Reid, 1999, p. 188)

Critical questions about curriculum relate to who makes curriculum decisions, the type of curriculum decisions that are made, and the authority for such decisions. Curriculum is more than the content that is taught and learned; it becomes the site on which generations struggle to define themselves and the world. With these views of curriculum in mind, essential questions about curriculum relate to what it means to educate and the purpose of a university education.

University curriculum can be thought of as comprising:

- Particular domains of disciplinary or professional knowledge;
- Particular systems of pedagogy (ways of teaching and learning);
- Particular protocols of assessment and evaluation; and
- Particular forms of organisation (including the calculation and allocation of resources).

This implies an understanding of curriculum as more than a practice, and incorporates an institutional dimension. It implies concern with organisational issues at every level and demands attention to resourcing and other issues than those relating to matters of knowledge.

Again, this directs attention to questions about who can and who should 'own' and be responsible for the dimensions of the curriculum map which may include:

- Knowledge (what is taught);
- Pedagogy (how it is taught);
- Forms of assessment;
- Focus of assessment and evaluation;
- Organisation of programs (entry, structure, and completion); and
- Distribution and allocation of resources.

New technologies and curriculum

Such questions of ownership and responsibility are critical in relation to all forms or modes of teaching and learning but the insertion of new technologies raises additional questions and exerts pressure to consider how new forms of organisation and pedagogies may change the ownership of curriculum.

The reasons for this are varied. In part it is because of the associations between the emergence of new technologies, the new ways of delivering education that are made possible by these technologies and the associated economic, social and knowledge changes that are occurring. The rise of the corporate university, for-profit universities delivering online courses, and the growth of university-industry collaborations exert a material influence on our perception of emerging e-learning ventures. The rise of e-learning in universities reflects significant changes that are occurring more widely. These include: new relationships between education and the economy; new forms of knowledge relationships; increased pressure for universities to be more responsive to the needs of industry; better preparation of students for immediate contribution to the workforce; and pressure for greater efficiencies.

A further consequence of technological change is that it provides the possibility for new centres and forms of knowledge production and distribution. The impact on universities of this is significant. As they become part of a wider learning market that includes the research and development departments of large organisations, think tanks and consultancies they appear to be losing their privileged status as primary producers of knowledge.

Plant (1995) argues that universities are less able to control access to knowledge when it increasingly takes the form of information circulating through networks which evade the regulation of educational institutions and when the definition of knowledge as a product of 'educated' minds is challenged. If we are mindful that curriculum is closely related to social policy then this clearly influences the central curriculum question: What does it mean to educate learners in this changing environment?

As a new form of learning, e-learning causes us to reconsider many aspects of our academic practice. It is both accompanied by and contributes to a changed university environment. New technologies may open up spaces for re-conceptualisation of our policies and practices. However, the new technologies that have made e-learning possible are accompanied by both potential opportunities and threats. E-learning has already altered some of our practices as individuals and institutions, and it has the capacity to alter academic life significantly for teachers and learners. I will consider some of these practices briefly, bearing in mind that the detail and extent of these will vary from one institution to another and will vary within any one institution.

E-learning can be thought of as one manifestation of the notion of flexible learning. Within the term e-learning we can conceive a range of online or Web-based teaching and learning practices including computer-mediated communication as the basis of teaching and learning, electronic delivery of independent learning resources, learning in simulated electronic environments, learning using technological tools and software, and electronic enrolment and course administration.

Put simply, our questions about ownership may be driven by a protectionist concern that the traditional owners of curriculum–individuals and teams of academics and universities--are losing ownership to other organisations as university and industry develop collaborative programs and new providers enter the education market. Or, more positively, we may take this as an opportunity for expanding curriculum 'ownership' in the new environment that has been created by electronic technologies, considering possibilities for greater learner involvement and control, looking at how e-learning may allow for more democratic curriculum practices.

In the new world of higher education we have seen the emergence of alternate education providers. The virtual universities have received the greater share of public attention. The University of Phoenix, while having been established some twenty years ago to provide professional education, achieved prominence with its online course provision. Similarly, it was to a large extent the e-learning environment that drew public attention to the growth of corporate universities such as the McDonald's 'Hamburger' University and Motorola University. These customised course providers certainly position curriculum ownership in particular ways–the workplace becomes the curriculum and the notion of curriculum becomes more limited and focused on a restricted set of content and skills.

The promise and reality of e-learning

Among the potentials attributed to e-learning over the past decade have been:

- increased access to education;
- democratisation of teaching and learning process by giving greater control of learning to students; and
- freedom of learner choice over the place, time and pace at which learning occurs.

Supporters of the new technologies have made many claims for the e-environment. Among these are, that it will:

- remove or bypass controls over what is taught--with the structure of interest being shaped by what students want to learn;
- alter the things we think with; different discourses will emerge that reflect the capacities of the technologies and the ways we use them; and
- alter the nature of community.

The traditional community of the university is structured around notions of lectures, tutorials, and labs controlled by teachers who select groupings, the type of interactions that will occur, who interacts, and with whom. New learning technologies suggest new groupings, new communication patterns, new interactions and power structures.

Commentators such as Landow (1992) suggest that ideas of community discourse and power are altered by the new relationships between production and delivery. They argue that these technologies

will bring about change in the pattern of control and power in designing, delivering and evaluating teaching and learning. The web has been described as a medium that values multiple intelligences (Brown, 2000). As such it should allow teachers to create a learning environment that supports all learners in engaging in a way that best meets their learning needs. The Web can be seen as a two-way medium in which the 'push and pull' of receiver and sender of information opens up new opportunities.

Returning to the premise that notions of teaching and curriculum contain the idea of order, structure and sequence in ways such that information becomes part of an intention for learning-- it can be argued that technology has the capacity to radically change this situation as information can be available to participants without screening or ordering. Electronically-mediated learning has the potential to make redundant the idea of a self-contained classroom in which teachers to a large extent control and structure information and communication.

Is e-learning as currently practised delivering these promises? Have we seen changes in the dimensions of curriculum with rights to possession or investment shifting from one group to another?

New technologies and practice

In addressing these questions, I'd like to further explore the extent to which e-learning has changed academic tasks and roles; teacher control; learner control; and boundaries.

We are already seeing the separation of some academic tasks and roles in higher education (Cunningham et al, 2000).

Distinctions in the staff work underpinning both distance education and on-campus delivery have blurred and are harder to sustain. We have seen an increase in the number of positions of educational developer, instructional designer, and online developer in Australian universities. The production of e-subjects and courses involves not only the academic as expert in content and sometimes pedagogy, it includes educational designers and developers, programmers, technicians, graphic designers and others. Decisions about how subjects will be structured and organised become the domain of a larger number of people. Resourcing needs and implications expand and those responsible for decision- making in relation to these questions include systems managers and information technology managers, in addition to the academic manager.

Several of the US for-profit universities have already separated out the development of curriculum (often in consultation with industry), from the teaching of that curriculum, employing two different groups to perform each task. For example, the University of Phoenix uses a centrally developed curriculum across a wide network of e-classrooms while Jones University uses the 'best of the best' notion, arguing that experts at the cutting edge of new knowledge are not necessarily the best at teaching students.

Examples from some of the US for-profit providers illustrate shifts in control of aspects of the curriculum from established teachers to new players. These institutions frame quality in terms of centrally-developed and mandated curricula and teaching scripts that allow teachers limited interpretation in order to ensure consistency of product. It is unlikely that all of these role changes are simply the result of the online environment, rather they stem from a different notion–the emergence of the for-profit and corporate university that just happens to be online.

The Internet makes it possible to transform a subject or course into an object for widespread distribution or sale, opening up new markets for courses. The licensing of university courses to commercial providers may be accompanied by altering the educational product to meet the needs of different groups of learners.

Technology has the capacity to alter the hegemonic relationship of teacher and student. New technologies allow individuals to cross and transform loosely demarcated boundaries by providing access to a myriad of cultural content (O'Connor, 1997). This may lead to the contestation of boundaries between teachers and students through tensions between accepted academic content produced by those in powerful positions and new forms of content from other sources. Technology may allow each individual to personalise the sequence, pace and content of what they learn. Determining what is and what is not legitimate will become a more uncertain process. Social relations and organisation may change and this will impact on curriculum and concepts of education.

Learning and teaching in an e-environment presents challenges to the curriculum in relation to knowledge, pedagogy, assessment and organisation. It is useful to review the ways in which the potentially free and rich e-environment is currently being used in Australian higher education.

It is not surprising that review of e-learning in Australian universities offers a wide range of approaches and strategies. However e-learning design can be broadly conceptualised as encouraging independent, interactive, or collaborative learning. In Australian higher education we see examples of e-learning design that provide opportunities or require learners to engage in particular types of tasks depending on the dominant view of learning that underpins the design of the environment or the activities. We have examples of e-courses and subjects that range from little more than the insertion of conventional course content and pedagogy into an electronic environment to subjects, programs or components that have been specifically designed to take account of the features of the e-environment such as access to resources, distributed interaction or collaboration, asynchronous communication for distributed learners, access to software and tools. However in almost all cases what we see are situations where organisation, structure and pedagogy are pre-determined either centrally (by development teams or e-administration/production unit) or by the teachers involved. It seems that there are few cases where the learner is truly engaged in owning the curriculum or aspects of it. Despite the promises of flexibility and learner control of the e-environment and its resources control is clearly bounded.

At present, the design of proprietary e-learning course management systems is underpinned by notions of structure, sequence, organisation and pedagogy that generally replicate conventional face-to-face teaching models. They also dictate particular ways of organising, structuring and supporting particular pedagogies. Materials and courses are packaged according to standardised templates. There is a proliferation of packages that are clearly structured week-by-week around regular semesters or trimesters with pre-determined commencement and conclusion dates. Teaching materials and sites are activated at the commencement of teaching sessions and taken down at the end of semester, when learners are expected to have completed their learning.

Most attempts at online teaching seek to reproduce what we do in on-campus teaching, lectures are videotaped and streamed, Power-point presentations are recorded sometimes with voice commentary, we attempt to run virtual tutorials and discussion groups using synchronous chat or bulletin boards. The notion of a virtual university seeks to provide an experience that is analogous to an on-campus experience rather than exploring the different potentials of the medium.

A common approach to online teaching comprises the electronic presentation of course materials and resources selected by the academic to be used independently by the learner who may or may not have choice about the sequence of activities and content. Alternatively, e-learning guided by principles of social constructivism includes interaction among learners, usually directed by the teacher who structures activities and promotes interaction with scaffolds and frameworks, drawing on pre-determined topics at specified dates and points in the subject. The access to additional resources on the web may be assisted by links inserted by the teacher to relevant sites and resources. Again, these are determined by the teacher within the limits of what can be supported. In these models, the teacher remains in control as author.

The growth of e-learning has, however, led to the rise of 'unbundling', separating out the rights to development, content, delivery, and assessment. This role distinction has particular implications for curriculum, casting curriculum authorship in a new light. For example, the modularising of courses for e-delivery changes the structure and inserts new players into the curriculum arena. The emergence of e-education has been accompanied by increased involvement of multinational textbook conglomerates that provide curriculum designed for the e-environment. The use of capsules of prepared content that can be inserted into an e-learning space brings about new views of curriculum ownership and decision-making. The increasing involvement of commercial online education providers and deliverers inserts new players into the curriculum map.

Our current approaches to e-learning and teaching create an environment that privileges certain teaching-learning approaches over others. Proprietary course-management systems are designed around particular pedagogical approaches that are frequently less flexible than existing face-to-face approaches. Commercial e-learning packages direct pedagogy, assessment and evaluation. Availability and allocation of university resources determine who develops particular types of e-learning activities and in what ways.

Conclusion

In conclusion, the questions of who should legitimately own the curriculum and the consequences if ownership is appropriated by those outside the higher education domain are serious indeed. While e-learning has the capacity to open up curriculum ownership in positive ways, is this occurring? We need to consider seriously the possible outcomes and the direction in which we wish things to proceed. Despite calls for fundamental re-thinking of pedagogies for the e-environment, to date our attempts to invent new pedagogies have been limited both by conventional attitudes to teaching and learning, and by the wider socio-economic context.

References

Brown J. S. (2000) Growing up Digital. Change, March/April, pp. 10 – 20

Cunningham, S. et al. (2000). EIP, Canberra: Commonwealth Government. http://www.detya.gov.au/archive/highered/eippubs/eip00_3/bbe.pdf. [Accessed February 12, 2001]

Edwards, R. (1997) Changing Places? Flexibility, lifelong learning and a learning society. Routledge, London.

Landow, G. (1992) Hypertext: The convergence of contemporary critical theory and technology. Johns Hopkins University Press, Baltimore.

O'Connor , W. (1997) Create or be Created: How the Internet cultural renaissance is turning audience members into artists, http://firstmonday.org/issues.issue210/oconnor [Accessed July 27 2001].

Pinar, W. (1995) Understanding Curriculum. Peter Lang, New York.

Plant, S. (1995) The Most Radical Gesture: The situationist international in a post-modern age. Routledge, London.

Reid, W. A. (1999) Curriculum as Institution and Practice, Lawrence Erlbaum, Mahwah, New Jersey.

Young, M. F. D. (1998) The Curriculum of the Future. Falmer Press, London.

Is e-learning good learning?

ELAINE MARTIN Victoria University
DAVID WEBB RMIT University

Introduction

A good deal of recent debate about teaching and learning in higher education concerns itself with the pros and cons of e-learning (see, for example, Taylor 2000). There are advocates who believe it to be an almost unqualified good. Others believe it to be an unqualified disaster (Ross, 2000). It sometimes seems that balanced arguments, particularly arguments made by staff involved in teaching and using the technology, are hard to find.

We suggest that e-learning in itself is neither good nor bad; it is one of several different ways of teaching. What best helps students learn should dictate the choice of method whether traditional, virtual or a combination of both.

In this paper, we propose four principles for teaching for student learning and then explore how these principles measure up in a challenging contemporary classroom of 250 computer science students of whom over 50 % are overseas students. One of the authors is the lecturer in this class.

We are told by its advocates that e-learning will revolutionise the traditional university by augmenting texts with online resources such as interactive and multimedia-based materials; and by extending discussions beyond the classroom walls via new web-based interaction. We are told this is good for education and good for the economy.

On the other hand, there are those who remain deeply suspicious of the e-learning revolution in higher education and particularly of the links to commerce and big business. It is argued that the increased reliance on technology moves education into a predominantly commercial rather than an educational enterprise with commercial profit rather than higher education for the larger community, as its focus (Stoll, 1995). Over and above this there are countless claims that face-to-face teaching is simply best, because students want human contact and those students who can pay for this human contact will do so willingly. The future, we are told, will have the sought after courses delivered face to face and less prestigious courses relying predominantly on e-learning ("Face to face most favoured," 2000).

Most academic staff would agree that teaching in contemporary classrooms is challenging and not just because of the challenges and arguments around the introduction of new teaching technologies. Our classes are bigger, our students are more diverse, the subjects are more complex. We have more demands on our time, we have to show ourselves to be accountable, we have to attend to more administrative tasks. Indeed, there are some occasions when e-learning and the ability to deliver or communicate with the whole-class of several hundred, from our desk, at the stroke of a computer key appears an unqualified advantage. On the other hand there are few teachers who do not feel that in the best of possible worlds our classes would be face-to-face and they would be smaller. Simply put, it seems to many who usually teach, as opposed to those who usually write about teaching, that e-learning in higher education is hard to weigh up, it is neither a romance nor a tragedy,

neither an overall delight, nor an out and out disaster. Indeed, to continue the literary metaphor, it seems appropriate to suggest that teaching and learning with e-learning, like many other forms of teaching and learning, is better described as a heroic journey, with plenty of ups and downs, pros and cons, disappointments and wonderful surprises. It further seems that committed teachers are less concerned with the mode of teaching and more concerned with attending to helping their students to learn (Boddy, 1997).

In this paper, we pick up on the idea that underpinning all good university teaching and learning there are some common principles. First we discuss these principles which have been developed through experiences in a challenging contemporary classroom and with some knowledge of existing literature in this area. We first explore them in general terms but taking into account our experiences as contemporary university teachers. We then explore them in the context of a particularly challenging university classroom where e-learning has been used extensively to support more traditional teaching and learning. In this class, where computer science is being taught, there are around 250 students, the majority are overseas students and a good many are part-time students.

The Principles

Respect and humility for students and self and subject

The first principle: ' Respect and humility for students and self and subject', essentially sets the scene, for how teachers and learners might best approach their respective tasks. At one level it is common sense that the way we go into a task strongly influences the outcome. There is, however, a good deal of research on this as well (Bowden & Marton, 1998; Ramsden, 1992). Teachers in electronic, as well as conventional, classrooms create the conditions and experiences that either support, or get in the way, of student learning. And the way teachers think about and make sense of teaching and learning has more to do with student learning outcomes than with the precise methods and strategies they use to teach (Martin,1999). We know from this and other research that teaching involves guiding students and helping them to enter into a dialogue with the subject matter (Entwistle & Marton,1994). For this to happen, we argue, that teachers must know and respect their students, their subject and themselves as teachers and scholars.

In a class of 200 or 300 it is clearly impossible to know each student individually but we can come to know students as a group. We can come to know the range of past experience, of cultural background and learning history within the group. We can think about and explore what this means for how the students see and begin to make sense of the subject we teach. There will always be times when students know more than we credit them for and always times when they know less and reality checks are important.

What we are talking about here is more than just knowing our students. We are talking about respecting and having humility for what they know and what they don't know. It is an all too common reaction to be dismissive of those who know things differently. Teachers commonly do this with our students and particularly when we have told them something and they still persist in (apparently) not knowing. It is important to remember that if our students appear not to have heard, telling them again, particularly in the same way, is unlikely to help. If we get angry and impatient they might hear our impatience and pretend to know by mouthing what we have told them; but knowing is not simply repeating what has been said, any more than teaching is simply telling. To teach in this way will not lead to students having sufficient faith in themselves to try to genuinely link into the discourse of the discipline. Linking into the discipline is a precursor of students taking ownership of ideas and ownership is itself a precursor for development as a critical, creative thinker.

Knowing more about our students and having respect and humility towards them must be matched by a similar knowledge, respect and humility towards ourselves. We have commented that our students will always surprise us with what they know as well as what they don't know. Likewise for ourselves, we will often be surprised by what we do and don't know. This is no good reason to either inflate or deflate our ego. To pose as the unquestionable authority sometimes seems to be what is wanted by students and even by our own ego – but none of us is an authority who cannot be questioned. Furthermore, if we set up university learning as though we were unquestionable authorities, we may achieve a silent obedient audience but we do not develop a class that is committed to connecting into the subject.

Good teaching practice develops through reflection on that practice, through coming to know more about ourself as a teacher of a subject. It is not a matter of doing the hours. Nor is it a matter of having a facility or technique in handling a classroom, traditional or virtual. Nor even is it a matter of knowing pedagogical argument. All of these things have their place, but none is of the essence. Indeed all of these can get in the way of honest attempts to connect with students through the subject.

Respect and humility for the subject itself is as essential as respect and humility for students and self. Knowing a subject is not a matter of knowing a lot about a subject. It is rather a matter of being connected into the subject and being sensitive to how it develops and changes. A subject when it is known by one of its scholars (we assume that university teachers are scholars of the subject they teach) is not an inert mass. Sometimes knowledge is described as organic, growing and changing over time (Koestler, 1964). Sometimes it is described as a map of a terrain (Martin, 1999). The task of the teacher is not so much to package and deliver an inert mass of content but to help students to become familiar with the terrain – and there will always be things in debate and things to explore, discover and learn. So, respect and humility for the subject involves being open to what is uncertain and changing and might be interpreted differently as well as knowing what is more certain. It requires a respect for the many different ways of knowing and relating/engaging with a subject.

When we see the subject matter in this way we can begin to realise that teaching has to be about developing learning experiences that help students to explore the terrain of the subject. It is not about packaging and delivering a mass of information whether this delivering be done live in a lecture hall, or whether it be done electronically via a virtual classroom teaching.

Engagement and dialogue with students

This second principle focuses on how we teach. What we do in order to help students to come to know. We have already emphasised that the role of the teacher is to help students enter into a dialogue with the subject. This is not just a conversational dialogue between teacher and student. A student is in dialogue with the subject through the assistance of the teacher. Under the previous principle we talked about the subject sometimes being seen as a terrain and the teacher assisting the student explore and come to know that terrain. Sometimes a textbook takes on the teaching role, sometimes students are in dialogue with the subject through other students. They are in dialogue with the subject when they undertake practical tasks to apply and test newly acquired skills. Good learning is about students becoming intelligent, creative and independent participants in the community of scholars who explore the discipline.

As teachers, we do several things to facilitate this process. We define the curriculum and the syllabuses, the essentials that have to be known. We articulate what we want students to achieve and set goals accordingly. In particular, we set assessment hurdles for students to demonstrate their

achievement in order to finally receive a formal initiation into the community of our discipline. In this way we come to know our students and in particular we come to know about what our students know and how they understand the subject or discipline (Rowntree, 1977). Good teachers work hard to discourage students from the pretence of knowing and their assignments and assessments seek an honest response that can be personally built on through genuine self knowing.

This connecting with what is honestly known was delightfully characterised around seventy years ago by a mathematician, William Sawyer, who wrote a book called Mathematician's Delight (Sawyer, 1943) . This book suggested that often the teaching of mathematics fails because it is taught not as an honest experience but as an imitation subject:

> Nearly every subject has a shadow, or imitation. It would I suppose, be quite possible to teach a deaf and dumb child to play the piano. When it played a wrong note, it would see the frown on its teacher, and try again. But it would obviously have no idea of what it was doing, or why anyone should devote hours to such an extraordinary exercise. It would have learnt an imitation of music and it would have learnt to fear the piano exactly as most students fear what is supposed to be mathematics. (Sawyer, 1943, p.38)

Very often it seems that as teachers we fall into the trap of helping our students to learn imitation subjects, subjects in which they pass examinations and assessments because they get the right answers but which do nothing to help students to develop an honest response to a problem.

Scholarly integrity and social responsibility

Imitation subjects fly in the face of scholarly integrity. Scholarly integrity and social responsibility is our third principle. In this principle we focus on the discipline itself and the development of knowledge and insight within the context of the discipline. Whenever we engage in scholarly enquiry we seek to explore more and more of the truth about our subject and discipline. The truth that we seek is not to accumulate more facts and details, it is rather to advance our ways of understanding and comprehending the landscape of meaning that represents our subject. We try to make new and better maps of what we already know and we explore corners previously unscrutinised. We find new questions to ask and hypothesise and conceptualise in order to begin to answer these questions.

As new ways of knowing emerge, the criterion by which we judge the appropriateness or legitimacy of these innovations is sometimes said to be whether these new ways bring us closer to the truth, but what constitutes truth is not always clear-cut. It is often uncertain as to which is the best way forward and holding an open mind in the context of this uncertainty is challenging.

At one level, letting go of old truths in the face of the new is often intensely political. The upholding of academic reputation, the maintenance of research funding and taught courses: there are many compelling reasons as to why change is resisted. On a very personal level once we admit that alternative interpretations and frameworks may be legitimate then we have to admit to the fragility of our own knowledge. For academic staff who see knowing, rather than not knowing, as the cornerstone of the profession such a challenge to self image is usually unwelcome.

Contrary to first appearances, however, such a challenge is, however, a necessary part of our development as a scholar and university teacher. We have emphasised that scholarly knowing is not a matter of knowing an inert mass of content, it is about knowing how to map and explore a landscape of meaning. The landscape will develop and be seen differently over time and sometimes the ways we were helped to see things twenty, ten or even five years ago no longer have the relevance or explanatory potential they once did. We have to learn to let go as we once learned to come to know.

One of the reasons why there is change in knowledge and ways of knowing is that there is social change. With social and cultural change we see ourselves and our place in the world differently. Our universities have a responsibility to the wider community to develop and protect the integrity of our collective knowledge and increasingly as our societies become more multi-cultural so that collective knowledge becomes more complex and more tentative. Fundamental to this is the trust society places in universities to pursue and maintain a rigorous commitment to the truth and to the range of opinions and experiences of truth within society. The obligations that come with this responsibility are present every time we step into a classroom or lab, real or virtual. There are, for instance, claims that knowledge for its own sake is being devalued by the demand for commercially relevant knowledge. As teachers we need to be aware of these pressures and remind ourselves of our responsibilities to preserve and protect the integrity of our scholarly work.

All scholarly enquiry is social. And every social group has its own customs, its own language and its own etiquette. This becomes only more so when the group is based on some specialised interest such as a specific technology or some other field of expertise. It is a truism to say that any specialisation, from medicine to computers to art, has its own jargon that is often mysterious to outsiders. We learn the social rules for participating in these groups from each other. But when we first encounter the group, certain key characters will usually be the role models for newcomers. In the classroom, virtual or live, the teacher has this special status of one who is already initiated into the community of the discipline. The teacher becomes, initially at least, the primary example of how one behaves in this community and how one thinks and works in the community. This is yet another onerous responsibility so often over-looked.

Enchantment, commitment and rigour

This principle embraces those magical moments when we experience breakthroughs and quantum leaps in our understanding of teaching and our students' understanding of the subject. This principle emphasises that whilst there is much that can be prescribed and known about good teaching, there is an aspect of teaching that is mysterious and happens because the teacher is open to the possibility of the opportunity presented in the unexpected moment.

Sometimes we see an opportunity to make an explanation in a different way or to restate again what we might think we have said countless times before, but it is the right thing to do at that time. We suddenly see the light bulb turning on in the eyes of some students, often after months of struggle. It is the wonderful "ah-hah" moment for them and for us when the joy of learning elates them and the joy of teaching elates us and makes the struggle worthwhile. These moments occur only infrequently and they cannot be contrived or scheduled according to some flowchart or project plan.

It is important to emphasise that this enchantment comes on the heels of rigour for both students and teachers. As teachers, once we know the delight of getting students to engage; as learners once we have known the delight of seeing what is really being said, and connecting with that, then we are less likely to make do with the imitation.

Students and teachers work very hard, attending to lectures, complex texts and papers, grinding into the night to try to complete work on time. It takes commitment and effort to persist with this, especially when there are other demands on time such as family and work. For some, the goal of promotion, qualification and/or financial rewards is sufficient to motivate them. But even then, some enchantment with their learning and the subject of study can help their stamina certainly improve the quality of their work.

It is true that not all students approach their studies in this way (and certainly not all teachers do). And it may seem a somewhat romantic ideal for the day to day, pragmatic tedium of the contemporary classroom. It is probably almost impossible to define this principle in any way that could be formally specified in any syllabus or curriculum. But we believe that this enchantment with learning, the rare and precious teachable moment, and the energy and commitment that this inspires is fundamental to what make teaching and learning the deeply satisfying enterprise that it is.

E-Learning and the practice of teaching

With these key principles of good teaching in mind, how might e-learning help us in our teaching? This must be considered in the context of the current university environment so we begin with a mini case study of a subject taught by one of the authors. This is not to generalise all university teaching through a single case study but this example illustrates, we believe, many of the features of our key principles.

A contemporary university classroom

The subject of this classroom is introductory level computer programming for postgraduate students (graduate diploma and Masters by coursework). This class typically has an enrolment in excess of 250 students with more than half of these being full-fee paying international students, many of whom are relatively new not only to this university's educational environment but also to Australia and its culture. A post-graduate subject, an almost equivalent subject, is taught in the second year of the undergraduate course but, despite the subject similarity, the experience of teaching the two subjects is very different. Here we focus on the postgraduate classroom.

In many ways this is a conventional class. It is not considered by the students who learn here or the lecturers or tutors who teach here to be particularly different or innovative. It is a situation where e-learning tools have been integrated into a reasonably traditional setting to try to build on what is there and where staff and students are comfortable with the level of electronic technology that is used.

The teaching of the subject is structured around one two-hour lecture, a one-hour tutorial and a one-hour lab each week. These four hours are done in one evening per week between 5.30 and 9.30 pm to allow students to attend after their normal working day. As many of these students take two subjects, they do a schedule like this two nights per week. Approximately another eight hours per week of private study (reading etc) and assignment work is expected for each subject though invariably this is not evenly balanced throughout the 13-week semester. It is a demanding workload for those who have full-time work but this is not atypical of many "lifelong learning" coursework based programs these days. It's tough, and both the students and the teachers need to be aware of this.

The lecturer of this subject is a part-time, sessional lecturer and is often not on campus and does not have an office (or phone) in the department. As it turns out, this does not present too serious a problem, since most of the postgraduate students find it very difficult to come to the campus any more frequently than for their scheduled class times. The tutors and laboratory assistants (approximately ten or more of them) are typically drawn from honours and research students in the department. Although usually talented, enthusiastic and energetic they are also inexperienced in teaching and, in this subject, often younger than their students.

This context illustrates a common feature of the changing climate of university study. The "traditional" university of the community of scholars with regular, close contact between academic

staff and students, which perhaps never existed except in the most elite universities, is now long gone. It is now the era of mass post-secondary education with large classes of often part-time students and part-time staff who only come on to campus for the scheduled class times. The ad hoc visits of students to staff offices, the casual conversations in the corridors or even over lunch or in the pub simply do not occur in this environment. Perhaps even more damaging, the informal and social exchanges between students, such a large part of the experience of most undergraduate students in the past, are also less likely to occur.

These social, environmental and institutional changes are not going to be reversed for many reasons, both good and bad. Some of the e-learning technologies can certainly be used to alleviate, if not entirely overcome, these problems.

What is e-learning?

It is time, therefore, to identify more clearly what is meant by e-learning. At its simplest level, e-learning is nothing more than the use of electronic tools and technologies to assist us in our teaching and learning. But e-learning is more than just the audio-visual tools that we have already used for a long time. The term has arisen in recent years, along with e-commerce and e-everything-else, with the extraordinarily rapid spread of the Internet and the World-Wide-Web (which we will refer to as just the Web from now). The most extreme version (vision?) of e-learning comes from those who see the possibility of these technologies being used to create "virtual" communities that could replace or be an alternative, ostensibly an equivalent alternative, to the traditional "bricks-and-mortar" classroom.

Before we have a brief look at what some of these e-learning tools and technologies are or might be, we must remind ourselves that the Internet and the Web are themselves just delivery systems. That is, they are essentially the same as the cables and exchanges of the telephone system that carry our voice conversations (and now also data). And like the phone system, the Internet and the Web say nothing about the conversations or the content they deliver as technologies. It could be argued that the Web, with its protocols and multi-media and hypertext capabilities, enriches the format, structure and accessibility of the content that is being delivered but this is still essentially the packaging and not the content itself.

In a teaching and learning context, the main e-learning tools are:

- electronic mail (email)
- electronic bulletin boards (sometimes called newsgroups)
- electronic chat rooms
- reference and resource databases (including search engines)
- electronic assessment tools (including assignment submissions etc)
- computer video-conferencing (including lectures, seminars etc)

These tools can be useful in the traditional classroom-based teaching environment and we'll see below how this is occurring to some extent in our computer programming subject. But is it possible to combine some or all of these tools in some fashion that could eliminate the need for classroom contact between teacher and student? Can a fully developed and fully integrated virtual environment ever be a truly effective alternative for face to face teacher-student contact? Before we attempt to answer this question, we look first at the use of some of these e-tools in our case study subject.

E-learning tools in a traditional setting

The two most important of these e-tools are email and electronic newsgroups (or bulletin boards). These are both used extensively in the teaching of our computing programming subject and have many benefits. The email allows regular and prompt contact between staff and students when one or the other (or both) are often not on campus. We also have a newsgroup specifically for our subject where announcements can be posted and where queries can be raised, discussed and answered.

These two technologies do much to overcome some of the difficulties encountered in this environment. But they do have their problems. First, there is a linguistic style or etiquette (sometimes called "netiquette") for communicating using these tools. An email conversation is as different to a phone conversation as the phone is different to the old postal (snail) mail. And electronic newsgroups are different again. Perhaps a generation from now we will all be conversant with these modes of dialogue but for the moment this is still something that new students (and teachers) take some time to get familiar with. This is particularly evident with many of the international students, many of whom are not (initially) comfortable with the direct and often informal contact with staff that these tools provide.

Another problem that most academics would recognise these days is the sheer volume of email that comes in. Some staff react to this by simply not responding – i.e. they do not answer their emails. This creates a negative attitude in students where they think that the academic doesn't care about their queries (and therefore doesn't care about them). A related problem with email is the immediacy of them. It is quite possible, and therefore not uncommon, for an email conversation of (say) a dozen messages to be sent and received in just an hour or so. Each reply often demands another response and you never seem to get any of your "real" work done. This is compounded by the easy way that many others can be included in the conversation using electronic cc's.

Electronic newsgroups can help enormously with this traffic but it does require developing an appropriate culture and protocols for using them. It is up to the lecturer in charge of a subject to establish these rules and try and create this culture. In our computing subject it is made clear that the newsgroup is the official bulletin board for important announcements and so all students are required to read it regularly. As attendance in class is always optional, this electronic bulletin board serves a vital function and it is made clear to students that if they miss an important announcement (e.g. a change to an assignment deadline) because they failed to read the newsgroup then that is their responsibility. Guidelines are also given for what sorts of query are most appropriate for email versus news. For example, technical questions on assignment problems should be asked in the news-group rather than personal email. This has many benefits beyond just reducing the email traffic. First, if the lecturer replies via the newsgroup then all others can see this exchange – many students have similar problems so they can benefit from it too. There are also other staff monitoring this newsgroup and they might respond more promptly than the official lecturer. This also has the advantage of giving students exposure to more staff, each of whom brings their own personal qualities to the dialogue. But it is also often the case that students can answer each other's queries and this is strongly encouraged. These discussions can go back and forwards for all to see and, perhaps, to contribute to. If the discussion among the students starts to wander down a dead-end then staff can jump into the discussion to pull it back on track.

This newsgroup forum is a virtual community specific to our subject. Some students will participate in it more fully than others, just like in the classroom, but at least everybody can observe it. It can be

light-hearted and silly at times – so very important – or it can be very serious indeed when disputes are raised and, sometimes, resolved. Our experience is that these group forums where you can observe the goings on anonymously are particularly appreciated by students who might feel disadvantaged or disempowered in the normal classroom setting. These forums can help these students to learn that it is OK to be more forthright so that, over time, they might participate more fully. They can be a safe space to venture into the community of your subject/discipline, for some it is safer or easier than a live classroom.

Email and electronic newsgroups are not the only e-tools used in this course. There are publicly accessible directories for a range of material including assignment specifications and related documents, tutorial and lab guidelines and exercises, reference materials including a copy of the overhead transparencies used in lectures (though these and some other reference materials are also printed into a student handbook sold at the university bookshop). Assignments are submitted and distributed to tutors for marking electronically with student mark sheets being emailed to them. Most of this material is available over the Internet where the subject has a homepage with links to these and other references, including other relevant websites. The department provides a free CD of public domain software with a range of tools to help students with their studies.

Feedback from students on these tools is mostly positive. Students today are mostly familiar with the basic techniques for accessing the Web. Indeed, in this subject, the newsgroup is not currently Web-based and students complain about this. Students appreciate the access they have to staff via email – even if they only take advantage of it rarely, they like to feel that the access is there. The news-group becomes recognised as important and useful - again, even for those who do not post it often or at all. There are occasional complaints about inappropriate postings or threads of discussion that go on for too long or wander off the track. There have been requests for a weekly summary of the news discussions because of this “noise” in the newsgroup but this “noise” is an important aspect of participating in this community and best left there.

Students nowadays also like to have electronic access to relevant reference materials such as assignment specifications and guidelines and tutorial and lab exercises. This also includes general reference or discussion documents related to the subject, some of which may be authored by staff and resident on the department’s computers perhaps in some library or archive form. But it also includes the full resources of the Web that are being used more and more as an alternative to the traditional library. Some students choose not to buy, or maybe cannot afford to buy, the prescribed textbooks and use equivalent references available, freely, on the Web. Students like this accessibility to the enormous wealth of material on the Web and become very proficient at using it.

But most students still appear to want direction and guidance from the teacher and this includes a sense of personal connection with that teacher. This may be possible in an entirely virtual community but this has not been explored in this subject and neither existing students nor lecturers are eager to do so.

The e-learning vision

Some of the e-tools listed above are not currently being used (or fully utilised) in our computer programming class and it is worth making a few comments about this. First, we do not currently use live chat rooms, though this is being considered for live question and answer sessions scheduled at a specific time – a type of online virtual tutorial. This could be of considerable advantage for students who are struggling somewhat and would benefit from some extra tutorial time. The main

reason that this has not been adopted yet is the lack of familiarity of the staff with the technology and the time and effort overheads of getting this off the ground. Once this has been done and is bedded down then it would be expected that live chat rooms could make a valuable contribution to our teaching resources. The urgency for this would also be greater if we didn't already have the newsgroup which can provide many of the features of a chat room but not the real time communication characteristic of a virtual tutorial.

Although the department's computer systems are used to submit assignments and deliver feedback and marks to students, we don't currently use the continuous assessment style of tests that are sometimes popular. These can be useful but do require very careful and precise control of the database of test questions, especially if these tests are to be used as assessment hurdles for passing the subject. We have seen many such test beds of questions and answers but few of real quality. Designing these self-paced, continuous assessment systems requires considerable skill as well as substantial time and effort. Care must also be taken to ensure that they are not susceptible to manipulation (i.e. cheating) by students. In principle this appears a good idea but experience suggests it is harder to implement well than many people think.

Video-conferencing has never been considered for this subject, though there has been some talk of recording lectures for use in some of the university's overseas teaching. A variation of this is to have live transmission over the Internet (which could be recorded for re-viewing etc) of lectures to "remote" classrooms.

Discussion and Conclusion

We can now look at both the current and potential use of e-learning technologies and assess them against our principles of good teaching. Our criterion will be whether the use of these tools will support or hinder the pursuit of these principles in the modern classroom, whether "real" or "virtual".

When we consider our four key principles, it is apparent that only the second of them – engagement and dialogue with students – is directly supported and potentially enhanced by these e-learning tools. Email, newsgroups and chat rooms can promote greater contact and communication with students, especially when students and/or staff are not frequently on campus. They also have the benefit of being a safe space, if utilised properly, for students to be welcomed into the community of learning and respected for their struggles with learning as well as their contributions. This depends very much on the culture within the community. The teaching staff are largely responsible for establishing this culture, at least in its initial stages. There are teachers who openly claim that their aim is to create a culture of fear, to have students afraid to express a view and concerned only with repeating what they are told. No amount of sophisticated computer technology can prevent a culture of fear, so crippling to good learning, if teachers have an attitude like this.

This notion of a safe space, so important for shy or novice students, can sometimes be greater for some in this virtual environment than in the traditional physical classroom. Students can observe without being observed in this space – known as "lurking" in net-speak – which can be a precious opportunity for some students. The freedom to passively witness the dialogue of the community allows a student to learn the language and etiquette of that community. In time, they will hopefully also learn to contribute but most students need to feel safe first before they do this. This can be particularly so for students who might otherwise feel disempowered or disadvantaged.

These alternative forums can also provide a less formal environment for students to "meet" the teaching staff that can help greatly with the role-modelling functions of teachers. Lectures in particular, especially with large groups, can be fairly stiff and formal occasions with rather fixed, even rigid, agendas where the lecturer can appear to be this remote "expert". To see the lecturer, and other teaching staff, in the less formal environment of the newsgroup can help develop the engagement and a deeper dialogue with students. But again, this very much depends on the culture of the class. And this again depends mostly on the human qualities of the teacher rather than the technical excellence of the computers.

But these tools do not automatically and by themselves create meaningful engagement and dialogue with students. For this to occur it depends very much on how they are used, in particular the culture of learning that is created in these various e-forums. This is also the reason these tools do not by themselves directly support or enhance our other key principles. That is, these principles arise in the context, and as a direct consequence of, the sense of community and culture that can be created. This is not entirely the responsibility of the teacher – students must assume a responsible role here too – but the teacher has a vital role in establishing, monitoring and participating in this culture.

Our principles are (or should be) present in every forum and in every teaching and learning moment. There are no specific e-learning tools for the support of particular principles. We have seen that some will help with engagement and dialogue but this also requires that the manner in which this dialogue occurs is consistent with our first principle of respect and humility. It is the behaviour, of both teachers and students, in both the real and virtual classrooms, that promotes scholarly enquiry and integrity, rigour and commitment, and also, it is hoped, a sense of excitement, fun and enchantment.

Some of these technologies are mostly about delivery and efficiency. That is, they help us to make materials and resources available to large numbers of students. This includes better accessibility in both time (anytime access over the Internet) and space (do not need to be on campus). Other efficiencies include – possibly – greater flexibility, better monitoring of students' progress, the multiple re-use of these materials and so on. These efficiency gains are more to do with the economics of teaching that is important in an environment of increased demand and diminishing resources. But these economic pressures should not be confused with or compromise what we know constitutes good learning and therefore good teaching. Used wisely, these tools may enable good teaching and learning to still occur with less classroom contact time but this contact, connection and lively interaction between student and teacher (and subject) remains essential to deep, meaningful learning.

The greatest hazard posed by e-learning could perhaps best be summed up as the dangerous belief that learning can take place without teachers. Some measure of learning and certain types of learning can take place without a teacher – we do it all the time with our reading and discussions with colleagues and more formally with self-managed learning. But the learning we are talking of here, the deep, meaningful education that changes our sense of self as we enter into a mature relationship with our subject or discipline, this learning that our universities have traditionally represented the highest expression of, this learning requires teachers. True, some very special students do not seem to require this, but the vast majority of students, particularly in this era of mass post-secondary education, need and want good teachers.

A less extreme hazard, but still a dangerous one, is that a teacher's "knowledge" can somehow be bottled up (electronically) and delivered (electronically) to students who then "consume" this

knowledge. We already know this to be a false model of teaching and learning for if this were true then textbooks by themselves would be sufficient. Textbooks are useful but they are not teachers. Course notes, reference materials, assignments and test questions and answers are all useful, but they are not teachers. Attempts have been made within this model to give a human face to this packaged style of teaching with videotaped lectures but these have not been particularly successful. If we consider our key principles here then the reasons why this is so become apparent.

What is lacking from these models of teaching and learning is the live encounter between students and teachers. In our principles, we have added the subject itself as a participant in this now three-way encounter or relationship. The aim of the good teacher is to become redundant to this relationship as the student matures into their own independent, full and creative relationship with the subject themselves. This role then becomes a role of guardianship during the formative early stages of the development of this relationship for the student. As with parenthood, this requires a lively (and live) human interaction, with all the passion and personality, all the mistakes and mishaps, that this implies.

Perhaps the most common trap that teachers can fall into at the start of their careers is to view teaching as the "transmission" of their knowledge to their students. Most university teachers have little or no formal training in teaching. With experience, and through the open engagement with their students, teachers will often move beyond this "delivery of content" mode of teaching, though many do not. The e-learning tools can be a boon to this style of teaching for this is exactly what these tools are excellent for – the delivery of content. Embracing these tools can help entrench this shallow and less satisfactory style of teaching. With the pressure to deliver more and more content to more and more students, the apparent benefits of e-learning can become enticing. These temptations need to be resisted if good teaching and learning are to remain alive in our universities.

References

Boddy, G. (1997) Tertiary Educators' Perceptions of and Attitudes toward Emerging Educational Technologies. Higher Education Research and Development, Vol.16, No.3

Bowden, J., & Marton, F. (1998) The University of Learning: Beyond quality and competence in higher education. Kogan Page, London.

Entwistle, N., & Marton, F. (1994) Knowledge Objects: Understandings constituted through intensive academic study. British Journal of Educational Psychology, Vol. 64, pp.161-178.

Face to face most favoured. (2000, December) Times Higher Education Supplement, p. 6.

Koestler, A. (1964) The Act of Creation. Hutchinson & Co. Ltd, London.

Martin, E. (1999) Changing Academic Work: Developing the learning university. Open University Press, Buckingham.

Ramsden, P. (1992) Learning to Teach in Higher Education. Routledge, London.

Ross, E. Wayne (2000) Democratic Social Education: Social studies for social change. Routledge/Falmer Press, New York.

Rowntree, D. (1977) Assessing Students - how shall we know them? Kogan Page, London.

Sawyer, W. W. (1943) Mathematician's Delight. Penguin,Harmondsworth.

Stoll, C. (1995) Silicon Snake Oil. Macmillan, London.

E-mentoring: the challenges of creating meaningful communities with students

GILLIAN BEST
Victoria University

*This paper was written in consultation with the two academic advisors who founded the program in the Faculty of Arts, Victoria University: Marcos Anastassiou and Associate Professor Michael Hamel-Green.

The massification of the higher education system has led to increased concern about students' abilities to cope with university, resulting in a plethora of programs and systems to aid diverse student populations in making the transition more comfortable. This paper focuses on two such support programs. The first is an on-line support network for student mentors in the Faculty of Arts at Victoria University's St Albans and Footscray Park campuses. This program was trialed in Semester 1, 2001. The second support program is an e-mentoring program introduced in the Faculty of Arts in Semester 2, 2001. At the heart of both programs is a philosophy that considers joint student and staff ownership as crucial to the programs' design and future success. This paper will therefore first present the theoretical frameworks which underpin the decision to set up conjointly owned e-mentoring programs before going on to describe the two programs and how joint ownership is being achieved.

Students who differ from the 'more traditional' students are said to find the transition to university more difficult because they often lack parental or family experiences of university from which they can learn. As numbers of students attending universities have increased and the student population broadened in socio-economic terms, so too have the terms used to describe these 'new' student populations. The list below indicates some of the terms used to describe various characteristics of the massified student population. The aim of presenting this list is to demonstrate the complexities inherent in a massified student population and in turn to highlight the complexities of supporting students within such a system:

- 'first-generation' (a commonly used term in Australia, the US, Canada and the UK, meaning to be the first in one's immediate family to have a university education).
- 'NESB' (a commonly used term in Australia pronounced as a word or an acronym and standing for 'Non-English speaking background').
- 'ESL' (a commonly used term in Australia pronounced as an acronym and standing for 'English as a second language').
- 'LOTE' (a commonly used term in Australia, pronounced as a word rather than an acronym and stands for 'language background other than English').
- 'International' (student whose primary residence is overseas who is studying in Australia and is sometimes referred to as an 'overseas' student).
- 'commuter' (a North American term used to describe students who live at home for the duration of their course and travel to university to attend classes).
- 'part-time' (a student who is not studying full time)
- 'minority' (a North American term pertaining to North American racial minorities, specifically Hispanics, Native-American, African–Americans and Asian-Americans).
- 'ethnic minority' (a UK term used to describe students from migrant families).
- 'traditional' (a North American term used to describe white school-leavers and also a term commonly used to describe students whose parents are university educated).

- ‘non-traditional’ (a North American term used to describe older students and also a term commonly used in Australia and overseas to describe students who have enrolled at universities since the advent of mass education).
- ‘at-risk’ (a general term used as an overarching category which can include some or all of the above categories).

Victoria University (VU) is significant in terms of its student population in that each of the above student categories can be found on its campuses. This in itself is a strong incentive to ask what sorts of student-support programs would be useful and relevant for our students? Responses to this question are usually framed by a ‘discourse of improvement’ (McInnis and James, 1995), in which universities discuss their desires to improve the skills of their ‘at-risk’ students. Academics are increasingly being encouraged to make adjustments to their curricula and teaching styles in order – depending on one’s philosophical and political orientation – to compensate for or respond to the massified student population (McInnis et al.1995, and Gilbert et al. 1997).

Meanwhile, the students who are considered to need improvement in certain areas, such as English language, literacy, numeracy or general academic skills, are expected to do so by attending programs that aim to teach them such skills. In referring to such university programs Australia-wide, McInnis et al.(1995) have summarised these types of programs as being compensatory, enriching and foundational.

Victoria University is part of the enactment of an improvement discourse which has resulted in the implementation of a variety of adjunct, non-accredited and voluntary academic support programs which are usually, but not always, linked to specific subjects and which can be described variously as compensatory, enriching or foundational programs. The message to students (if they manage to hear it and accept it) is: ‘You are lacking in various ways. We have therefore provided you with various types of support that you should make use of.’ However, McInnis and James (1995) found that, across Australia, the numbers of students who attend support programs of whatever kind is small. This raises the question ‘Why?’. This paper is an attempt to respond to this question.

The author of this paper shares with the original academic proponents of the mentoring program a belief that the fundamental weakness in the ways in which we teach and think about students is that we attempt to mould them into our preferred image of what a student should be. Broadly speaking this can be summarised as an independent, highly motivated student with an interest in the subject matter being taught and who has a questioning, intelligent mind. The student also clearly enjoys being on campus, so much so that s/he spends much time there, preferably in the library, soaking up the academic environment. When students are thought not to be conforming to this image, the response tends to be that as well as needing their skills improving, they also need to be integrated into the academic community. However, integration is itself a contested concept.

Two types of integration are commonly referred to in the student experience literature, namely academic and social integration. Tinto (1975), whose theoretical framework has been used to inform studies on student persistence for over twenty years, argues that in order successfully to integrate into the university environment, students need to experience a ‘rite of passage’ that consists of three stages. These stages can be summarised as:

1. separation from family and friends who were known prior to university enrolment;
2. learning the values of the university;
3. involvement in campus culture such as clubs and other university organisations.

It is argued that achieving these three stages will help students feel integrated into the university community and they will, in turn, be more likely to persist with their studies. However, the type of undergraduate culture implicit in Tinto's writings to which students are to be integrated is questioned by Moffat (1991). Moffat's ethnographic study of residential college life found that the handing down of traditions and cultures was less apparent in the late twentieth century than it was early in that century. Influenced heavily by media-induced 'youth culture', Moffat argues, students see colleges as:

> places where everyone is fairly intelligent, places where students are on their own with large numbers of their age-mates and with considerable amounts of free time, and places where adult authorities have minimum knowledge of and impact on their private lives. (Moffat, 1991, p 57).

In a different way, Brower (1992) and Tierney (1992) have also expressed concern about the social integration approach to student retention, pointing out that it measures not persistence but conformity. Furthermore, Tierney (1992) argues that a major problem with the social integrationist approach is its assumption that "all cultures are similar and the institution merely reflects the culture of society" (p. 610). Significantly, Brower argues that integrationists neglect to identify and examine how students interact, shape and modify their own environment.

Student-mentoring programs which focus on students mentoring other students are unusual in terms of support programs in that they do acknowledge students' experiences and recognise the potential power of students passing on their experience and knowledge to each other. Furthermore, student-mentoring programs have the potential to connect students with each other and for students themselves to create communities that are meaningful to them.

An important question for universities like VU when it comes to issues of integration and support programs is how best to integrate a mainly commuting student population, as the usefulness or otherwise of support programs will be determined in part by how these commuting students see any programs fitting the rhythms and realities of their day to day lives. In short, the commuting student population raises specific challenges for the design of accessible and flexible mentoring programs.

Mentor programs are implemented for a variety of reasons that can include some or all of the following:

- Improve student retention rates for general or specific student populations
- Help student transition from high school/work/home duties
- Facilitate student integration into 'campus culture'
- Improve student academic performance
- Enhance existing student support programs
- Increase particular student populations within a specific course
- Demonstrate institutional commitment to supporting students.

Mentoring is an approach which acknowledges students' experiences and knowledge and, like other programs/subjects which use a student-centred approach, encourage(s) reflection, enabling the learner to generalise principles for further action from the experiential learning process (see Schon, 1983; Kolb, 1984).

The Faculty of Arts student-mentoring program involves a second or third year Arts student mentoring a group of first year Arts students in what is known as a student circle. A number of student circles are run at the St Albans and Footscray Park campuses for the first four weeks of first

semester. One of the many aims of the program is to provide students with a formal time and place where they can ask questions and get to know other students in the crucial first few weeks of semester and beyond if they want to. The face to face student-mentoring is an important element of the faculty's student support systems.

Davis argues that 'commuter' students require institutional responses that encourage "connectivity" (Davis, 1990) to their university. E-mentoring was initially conceived at Victoria University as a way of continuing to provide a mentor scheme once the student circles (described above) had finished. However, when examined in the context of a commuting student population who usually not only have study responsibilities but family and work commitments too, the potential of E-mentoring for students became more apparent. The potential for E-mentoring to run as a complementary scheme in its own right has therefore been identified as an appropriate institutional response to its commuting population.

E-mentoring is usually defined as the merger of email and mentoring, the positives of which include email being able to transcend the constraints of geography and time (http://www.mentornet.net/Documents/Program/Overview/introduction.html). An example of e-mentoring is MentorNet (College of Engineering, San Jose State University), a US based mentoring program for female undergraduates and graduates in Engineering and Sciences in which female undergraduates are mentored by a female in industry for as long as a year. A scheme based on MentorNet is Mahayosnand's (2000) National Public Health Student-Mentor Program pilot study that uses email as its primary communication tool to connect students to practising professionals early in their studies. Barbara Kelly's Peer Assisted Study Scheme at the University of Queensland uses WebCT as a way of centralising useful resources for students and student mentors including activities that mentors can use in study groups and resources that students being mentored can use to help them with specific subjects.

The e-mentoring program being currently trialed is also WebCT-based and has arisen from a need expressed by a mentor, Adam Forbes, to communicate with other mentors and share ideas and experiences regarding their student circles. In 1999, mentors were finding it difficult to communicate with other mentors about their experiences due to their differing timetables, campuses and workloads, and geographic distances between each other. Adam, who in 2001 was mentoring a student circle for the second year in a row, saw email as a useful communication tool that might be able to transcend such communication barriers. The introduction of student email addresses across the university, relatively easy access to email at VU, and increasing use of email in the general population mean that communication by email is a far more viable communication tool than it was as little as two years ago. The introduction of WebCT as the institution's preferred on-line software environment meant that potentially student mentors could communicate not only via email but by the other communication tool within WebCT.

WebCT is a computer-screen environment which has familiar elements associated with the teaching and coordination of academic subjects. For example, the Web CT screen commonly shows icons that represent student progress, places to submit assignments, take exams and so on. In short, Web CT is an on-line teaching and learning environment that aims to provide teaching staff with pedagogical flexibility and plenty of interaction between staff and students.

Unlike the courses usually found on WebCT the student-mentoring program is not accredited and as such various elements of the usual communication tools were deleted from Web CT. Five communication tools remained: email, discussion, calendar, chat and resources. The significance of

each of these communication tools in terms of their abilities to be used flexibly within the realties and complexities of students' lives is described below.

Email

WebCT has its own email, separate from the student's university email, which student mentors can use to talk about mentoring experiences. It is useful in the sense that email is a commonly used communication tool and therefore familiar to many students and if not can be learned with relative ease. Students can email each other privately or publicly.

Discussion

The discussion list tool is similar to email but this tool is aimed more at a discussion of a specific topic which others can join, so it is more for group than individual discussions. For student mentors this tool can be used to discuss a particular problem or issue about which others can contribute their thoughts and experiences.

The Calendar

This communication tool allows students to see at a glance, and add themselves, any significant activities and events in their student-mentoring program.

Chat

This tool allows real time chat with fellow mentors. Current mentors considered this to be a tool they would rarely use considering the differences in students' timetables and lives. However, they requested that the tool remain in case they did want to use it. It has been suggested, for example, that a mentor might publicise that she will be on-line each week at a particular time for real-time chat.

Resources

This communication tool is where documents can be scanned and uploaded. For example, students might describe an activity that worked well with a group. This might be written up as a Word document and uploaded on to the resources page to be used by other mentors. While it is tempting to add documents that are written by staff to this resources page, this would defeat the object of student ownership. The aim is instead to encourage students to add their ideas.

Other Tools and elements of Web CT

Web CT allows for the uploading of digital photographs. Photographs of student mentors could be placed on the screen to allow students to see who is mentoring them. Student mentors can also create their own home pages within Web CT thus presenting information to students which they think students would find useful and interesting and increasing a sense of community and belonging.

Ownership Principles

For those students who wish to continue to be mentored when their face-to-face student circle has discontinued, E-mentoring is a possible option. In anticipation of such a need, five student mentors volunteered to have initial training in the use of the basic tools in WebCT. In second semester, 2001, first year students were presented with this as an option for continued connection to an experienced student. However, some students do not wish to declare themselves publicly as wanting to be mentored. In anticipation of this problem, mentors have been asked to think of ways to address this for 2002. One possible solution for the future is automatic enrolment onto WebCT for all first year

Arts students and general training on WebCT to occur as part of their university experience. It is anticipated that first year Arts students would be given an ID and password in advance of any closing of student circles to allow for a smoother transition to being mentored on-line. Other students might choose being mentored on-line in preference to a face-to-face mode.

WebCT requires a 'designer' for its courses and because WebCT is usually used in accredited subjects, the designer is usually the teacher/coordinator of the subject. However, in the case of VU's student mentor support network, joint student and staff ownership of the WebCT course was vital. If the students were to feel genuinely that the network belonged to them, then they had to create their student mentor community without having to go to a staff member first. Consequently, the student mentor network in Semester 1, 2001 had two designers: the first author of this paper and Adam Forbes, the mentor who requested greater interaction between student mentors. Both designers have been trained together in how to use WebCT. Among other things, designers can change the look of their WebCT pages, can add documents to the program (for example to the resources tool) and can track student use of the mentor program. The initial trial of this joint ownership principle has already demonstrated the need for more than one student mentor (perhaps all) to be able to add or delete resources without having to go through a third party. The aim eventually should be for the network to run with very little, if any, design input from staff. Staff involvement could then be more as joint facilitators of the network and general advisers.

Conclusion

The student mentor support network is in its early stages of development and refinement and much is being learned in the process about creating communities that are meaningful to students. It would be an easy step to 'create' the on-line community as we as staff see fit. However, crucial to the development of the E-mentoring program is allowing time for students to develop their sense of what their community or communities might be. Ultimately it is hoped that students being mentored by students in a variety of ways will help to increase and deepen connections between students and therefore to feel a greater connection, as defined by them, to the university.

References

Brower, A.M. (1992) The "Second Half" of Student Integration: The Effects of Life Task Predominance on Student Persistence. Journal of Higher Education, Vol. 63, No.4 (July/August).

Christie, N.G. and Dinham, S.M. (1991) Institutional and External Influences on Social Integration in the Freshman Year. Journal of Higher Education, Vol 62, No. 4 (July/August)

Davis, B.D. (1999) Business Communication Quarterly. Vol.62, Issue 2 (June) pp.74-75

Gilbert, S., Chapman, J., Dietsche, P., Grayson, P. and Gardner, J.N. (1997) From Best Intentions to Best Practices: The First-year experience in Canadian postsecondary education. National Resource Center for The Freshman Year Experience and Students in Transition.

Kolb, D.A. (1984) Experiential Learning: Experience as a source of learning and development. Prentice-Hall, Princeton, NJ.

Kraemer, B. (1997) The Academic and Social Integration of Hispanic Students into College. The Review of Higher Education. Vol.20, No.2, pp.163-179

McInnis, C., James, R. and McNaught, C. (1995) First Year on Campus: Diversity in the initial experiences of Australian undergraduates. Centre for the Study of Higher Education, Australian Government Publishing Service, Canberra.

Moffat, M. (1991) College Life: Undergraduate culture and higher education. Journal of Higher Education.Vol. 62, No.1. (January/February).

Mahayosnand, P. (2000) Public Health E-Mentoring: An Investment for the Next Millenium. American Journal of Public Health, Vol.90, Issue 8, (August) pp.1317-19

Pascarella, E., and Terenzini, P. (1980) Predicting Freshman Persistence and Voluntary Dropout Decisions from a Theoretical Model. Journal of Higher Education. 51, pp.60-75.

Schon, D.A. (1983) The Reflective Practitioner: How professionals think in action. Basic Books, New York.

Tierney, W.G. (1992) An Anthropological Analysis of Student Participation in College. Journal of Higher Education. Vol. 63, No.6 (November/December)

Tinto, V.(1975) Dropout from Higher Education: A theoretical synthesis of recent research. Review of Educational Research. Vol.45, No.1, Winter, pp.89-125.

Online technologies at Victoria University: Opportunities and challenges to support inclusive practices

GUIDO ZORZENON Victoria University
ANTHONY GILDING James Cook University

From one student with a disability

> Accessibility both creates and reveals connection. A self-professed e-mail fanatic, Coombs told the story of a deaf student who had taken to e-mailing him twice, even three times a day. At one point in the course, she revealed her joy in being able to talk one on one with a teacher without having to speak through anyone else. This experience drove home the power of this medium to bridge gaps in unexpected ways. Another humbling point he and Banks spoke to was the fact that the line separating the able from disabled is horizontal, not vertical: it joins all of us beyond adolescence, the peak of our hearing and eyesight. (Renery, 2000)

E-learning is a significant step forward for many students who have been disadvantaged in the past by time and distance. If well-designed, e-learning can provide students with ways of learning that are more aligned with good teaching principles for tertiary education (Chickering and Gamson, 1987; Chickering and Ehrmann 1993). Nonetheless, e-learning with its significant reliance on Information and Communication Technology (ICT) is a two-edged sword. We can easily discriminate against certain groups of students, often indirectly and without being aware of the full consequences of our actions.

E-learning is just one manifestation of flexible learning arising from the use of ICT to support teaching programs. We want to provide more flexible learning pathways; increased flexibility in the learning methods used; more flexible and appropriate access to learning times, locations and resources; greater flexibility in assessment; and more flexible and responsive forms of student support. Online technology solves some of the practical problems we have, but now significantly extends the type of support we must now provide students with disabilities.

In 2000, Victoria University had 1000 – 1100 students registered as disabled but this probably understates the figure, as students often do not want to be labelled as disabled among their peers. If we accept that 19 % (ABS 1999) of general population have a disability and a further 17% have other impairments (ABS 1999), Victoria University (VU) could have possibly 5000-10,000 students with some form of disability. This is in the context of a university that has a significantly high proportion of students from non-English-speaking backgrounds, students from lower socio-economic households and students with learning problems. To provide a more inclusive picture of “disability”, we must take into consideration students with temporary disabilities caused by accidents or work-related illness, that approximately 8-10 % of males have some form of blindness, and that finally, we all become less able as we age (vision, mobility, short-term memory, dexterity can decrease). Consequently, we can identify a large number of students definable as having “disabilities” who may find it difficult to access our e-learning-supported programs.

E-learning at Victoria University

While e-learning at Victoria University is still emerging, over the last couple of years on average approximately 2000 - 3000 students have been enrolled in a little over 100 subjects per year. This year, we have seen an increased interest in the use of e-learning that we believe is due to several factors:

1. The availability of an e-learning infrastructure in the form of a WebCT server sanctioned by senior management for use by all university staff.
2. The introduction of professional development programs that support long-term development of e-learning within subjects and/or programmes in which staff are teaching (See http://ceds.vu.edu.au/onlineLearning/).
3. A generally positive response by university staff and students who have related well to the WebCT interface and tools as opposed to other existing online technologies.
4. The creation of further interest in e-learning through external programs, especially in the TAFE Division.

While there is a variety of online technologies in use within the university, the paper focuses on the impact of WebCT and REAL Media technologies on our students. Many of the learning activities that students undertake will use similar technologies.

Learning Management Systems

Typically students who use our WebCT server focus on:

1. Emailing staff and other students;
2. Communication with other members of the class by posting items to the online discussion list and/or participating in an online chat session. Chats are used less frequently than discussion lists at Victoria University.
3. Viewing course material and/or online resources for a subject or program
4. Completion of online surveys and tests.
5. Uploading course assignments, typically in the form of a word processing file and/or text files
6. Using WebCT on campus and/or from home if they have access from home.
7. Designated group work allowing group members to share and post files.

Beyond WebCT, students use the Internet to access the university's library and online resources, contact other social groups and communicate with administrative and support services.

Video and audio delivery

RealVideo server is used to support the CEDS seminar program. The original intent in using this technology was to provide staff with a record of CEDS seminars. The record may comprise: audio, video, typed notes, a converted-to-HTML PowerPoint presentation, and a menu for moving to different locations in the seminar. Its use was expanded to provide students within specific courses with access to audio, video or multimedia applications that are designed to support them reaching particular learning outcomes.

The limits of e-learning

Online technologies may help students who have difficulties understanding visual, verbal or textual representation of information. For example, the pause-and-play feature of audio and video

recordings allows students to listen at a pace consistent with their individual learning skills and concentration spans. Many students with disabilities rely on assistive (or adaptive) technologies to use e-learning. Most assistive technologies, for example, screen readers, voice-recognition software, touch screens, Braille readers, and speech synthesizers, grab output as ASCII characters. These devices work well with a structured mark-up language like HTML because they were developed when we used command-line interfaces prior to the development of our commonly used Graphic User Interfaces.

However, there are practices we all can adopt that are more inclusive. In general, every element of a Web page should be accessible or have an alternative provided. For example, we should correctly use the alt (alternate text) attribute of the <img> tag so that people with assistive technologies may understand the meaning of the graphics we use on our Web pages. Many people include alt text without thinking about what it is actually for: describing what the image is. Other practices are suggested later in the paper. By making learning material accessible in different formats, such as text/audio/video, we can support people with different learning styles, lower literacy levels and second-language access needs.

W3C Web Content Accessibility Guidelines 1.0 (W3C 1999) and 2.0 (W3C 2001) provide a detailed description of the issues involved and remedial steps that may be taken to provide accessibility. Cahill and Foster in their Showcase presentation, on “Web Accessibility and Universal Design”, provide a succinct summary of these issues (in Costello (1999)). This summary incorporated into Table 1, indicates what measures need to be addressed in e-learning environments.

A recent study sponsored by DETYA (2000), suggests that certain designated equity groups of students need specific targeting so as to ensure equitable access to assistive technology services (DETYA, 2000 p125). It is important to emphasise e-learning is not an all-purpose remedy. In order to ensure equity and/or for economic reasons we may, in some circumstances, need to decide not to use e-learning and resort to more traditional methods of distance education and face-to-face teaching.

Table 1. Addressing disabilities in an e-learning environment.[1]

Disability or related problem	Inclusive practices
Vision	
Difficulty accessing unlabeled graphics and undescribed media.	Use of ALT tag for short textual description or use of D-link for more extensive descriptions
Information may be lost or inaccessible with poorly marked-up tables and frames	Avoid the use of frames. At the minimum provide title to facilitate frame identification.
	With data tables include mark-up that assists with identifying row and column information. And also include a description of the table.
Poor contrast levels between background and foreground	Sensitivity to basic graphics design principles.
	Use of user-defined Style Sheets.
	Use screen enlargement and/or screen readers – allow for the use of user-specified style-sheets and preferences and graceful screen resizing.
Limitations of Screen Readers: Screen Readers scan text from left to right and top to bottom on a page thereby providing incorrect translations to the reader	Use of punctuation to enable a screen reader to pause after headings.
	See also above reference to tables and frames.
Use of Applets and plug-ins may cause visual related problems such as inability to read embedded text.	Applets and plug-ins should be tested against the accessibility standards and redesigned as necessary.
Colour blindness: Use of coloured text to convey information	Avoid use of colours particularly red and green.
	Provide alternatives such as by using XML or text.
Hearing	Provide captioning for audio.
Physical Cannot use mouse so need to use keyboard or voice input.	May use keyboard navigation rather than a mouse. Include design for keyboard shortcuts and logical navigation via the tab key and the TABINDEX attribute (these features are not supported by all browsers).
Cognitive	Need consistent navigation structure. Use of TABINDEX and Style Sheets.
	Simplification of complex learning settings
	Avoid flickering or strobing designs.
Use of old technologies	
Use of text based browser	Design for text only formats
Slow connection speed	Design media for low speeds.

Inclusive and exclusive features of WebCT and REAL Server

Table 2 and Table 3 detail the features of WebCT and Real software that may be viewed as inclusive or exclusive. Some of the information in the table is drawn from the work of Pearson and Koppi (2001).

Table 2.Software Related Inclusive Features/Practices

WebCT	Allows students to access information and communicate with teachers at any time and place (within the Internet) Allows students to view their own progress at any time and place.
REAL	Allows students to take control of their learning experience. The information may me paused and played back at the rate suitable for the student. Allows students with literacy problems to listen and view video related to the text. Allows students to view text, PowerPoint displays, audio and video simultaneously.

Table 3. Software Specific Exclusive Features/Practices

WebCT	No text equivalent for some icons, headings and logos Tables may be designed in ways that are understandable to people with vision disabilities Use of frames. Problems with dictation software in interactive elements Communication tools of limited use. Use of arrow to designate structure within, for example, table of contents, hides information from screen readers.
REAL Server	May exclude some people with vision and hearing disabilities. The extent to which this holds true depends to a good extent upon production and design decisions. This is valid for any current methods for delivery of video and audio media. There are two main considerations, firstly that the image must be resizable, and this is a production and bandwidth issue, and secondly in the provision of transcripts and alternate audio media.

The challenges in supporting e-learning at Victoria University

The best solution for our students with disabilities is to use e-learning technology developed under so-called universal design principles (DETYA 1999, p6). These incorporate features that allow usage by the greatest number of people with wide variance in abilities and within the widest possible range of environmental settings.

The World Wide Web Consortium (W3C) is an international, vendor-neutral consortium that promotes evolution and interoperability of the Web. It has a strong focus on the universality of the Web and consequently one of its activities includes the provision of Web Content Accessibility Guidelines for the delivery of content over the Web. These accessibility guidelines provide for three levels of accessibility: Conformance Level A, AA, and AAA, which satisfy Priority 1, 2 and 3 checkpoints respectively.

WebCT claims conformance to priority level 1 only (Conformance Level A). There is a long way to go before central learning management systems (E.g. WebCT) attain Conformance Level AAA rating thereby satisfying all Priority 3, W3C checkpoints. In addition, teaching staff may accommodate some inclusive practices into their work but many will have considerable difficulty developing inclusive Web resources without additional central and faculty-based support. The University faces the challenge of developing a community that is more sensitive to inclusive practices and has the support to build e-learning environments that are designed not to discriminate students with disabilities.

Strategies to support inclusive practices

The suggestion the university community must become more sensitive to supporting accessibility issues means we all have a responsibility to promote inclusive practice. There is no average student for whom we will design our e-learning materials and resources. Current practice favours a social model of discrimination where we must understand our learning community, become alert to discrimination and develop appropriate individual and collective practices.

It is also in the self-interests of the university to support inclusive practices. It may cost universities less to identify individuals who need assistance and to support inclusive practices than it will to meet the legal costs of defending an existing practice. Under the Disability Discrimination Act 1992 individuals and universities must undertake “reasonable adjustment” of their existing practices if they are discriminative to students with disabilities. Careful note should be taken in our understanding of what constitutes disabilities, since the Act defines it in a much broader sense than what is commonly understood by the term. Furthermore, what may seem an unreasonable demand on an individual staff may not be unreasonable at an institutional and/or Faculty level.

Two significant cases highlight this: Maguire Versus SOCOG is the first case and the second involves Telstra. Worthington (2001) an expert witness to the Commission, describes the issues of the Olympic Web Case that was initiated by the plaintiff (Maguire) in 1999. By the end of the Sydney Olympic Games Maguire was awarded $20,000 damages against SOCOG on the grounds that they had not implemented all of the accessibility web changes ordered by the Commission. In the case of Telstra (Innes 2000), while the total cost of providing TeleTYpewriters (TTYs) to people with hearing disabilities was significant, the courts decided it was not an unreasonable demand on Telstra, as it would only lead to an increased levy of 1 cent per customer. This amount was considered well within the capacity of the organisation to meet without any hardship. In the context of a university, such decisions strengthen the case for early identification and support of both staff who seek help to make their curriculum more inclusive and students who seek not be excluded from an existing curriculum.

Given the moral and legal importance of discrimination issues, we must proactively address issues of inclusiveness at all levels of the university if equity groups are not to be further marginalised. Consequently, the university policy makers and centres such as the Centre for Educational Development Support (CEDS) and the Centre for Curriculum Innovation and Development (CCID), the Information Technology Services (ITS) and the Quality Unit (QU) have the responsibility to promote inclusive practice through their teaching and support activities.

We believe the best approach to meeting the requirements of 'reasonable adjustment' is to build comprehensive learning communities within the university that are sensitive to supporting inclusive practices. Consequently, we believe the university must demonstrate a sensitivity and willingness to be proactive in implementing policies, operational strategies and professional development of university staff to increase the capacity of the university, refine its systems and teaching practices to recognise and deal with indirect discrimination arising out of its e-learning activities.

Some of these strategies are already implemented or represented in various university documents (e.g. the Course Approval Template). However, in this case the whole is much more than the sum of the parts – some parts alone are unlikely to lead to widespread changes.

Table 4 represents our answers to the following questions:

1. How may teachers, university administrators and support staff, develop inclusive practices that increase student access to use of, and support for using e-learning?
2. How may the Faculties, Departments and University develop inclusive practices that increase student access to, use of and support in using e-learning?

We want now to briefly discuss these strategies in the context of Victoria University (VU) in order not only point to what different staff and university administrators may need to do to in order to support inclusiveness but also to highlight the collaborative and team-based approach that is needed for university wide continuous improvement in the support of inclusive practices.

Table 4. Strategies to support inclusive practices.

	Access	Use	Support
Teaching staff	Write Web pages that minimise exclusion of students with disabilities Regularly check their e-learning materials for inclusiveness. Inform students of the assistance available at the beginning of each subject.	Obtain regular and ongoing feedback regard accessibility of course materials. Provide clear instructions related to privacy and confidentiality.	Inform support staff of accessibility problems with resources and/or communication
Support staff	Integrate more inclusive curriculum issues into professional development activities. Develop educational design strategies that demonst rate more inclusive practices. Develop suitable HTML or XML templates for use in the development of e-learning resources.	Develop a Help Desk that is sensitive to accessibility problems.	Establish a University network of support staff to raise awareness of and support for inclusive practices. Establish a "list" on the university list server to support for the purpose of supporting inclusive practices.
Faculties/Dept	Provision of a teaching and learning policy that describes how e-learning (and ICT) is to be used, and used in ways that supports inclusive practices. Provision of templates to assist staff to build more inclusive e-learning curricula Professional Development for staff in Web based technologies, particularly in correct use of HTML.	Provide support staff who can: 1. Identify accessibility problems in e-learning resources 2. "Fix" accessibility problems teaching staff are unable to solve. 3. Identify university support networks to solve more difficult accessibility problems.	Provision of faculty support staff to assist teaching staff in the provision of inclusive curricula.
University (Administrators)	Clear teaching and learning policy that describes the use of e-learning and promotes inclusive practices. Provision of on-campus access to e-learning for those students with little or no access off campus. Assessment of claims for "reasonable adjustment" of curriculum. Provision of assisted technology in mainstream open access laboratories where they are most needed Provision of Quality Assurance guidelines for e-learning that support inclusive practices.	Strategic management of ICT e-learning resources by representative reference group that includes membership of DLO Laboratory policies tolerant of communication with social groups for non-English speaking background students E-learning policy that reassures students' face-to-face interaction and classroom teaching will be improved through e-learning practices. Assistance to students with disabilities with understanding how to use the assisted technology employed in e-learning at university.	Provision of DLO to work with both teaching staff and students, and to support the relevant university networks. Assessment of students with disabilities needs to participate in e-learning programs Provision of resources for the assistance to individual staff in the development of e-learning for students with disabilities.

Teaching staff

In practical terms, teaching staff are faced with a number of demands with the introduction of e-learning. They must develop a basic understanding of the different discourses that underpin inclusive practices both on and off-line. They must become more sensitive to the practice that may exclude some of their students. The heterogeneity and complexity of their teaching practice is increased – there is greater degree of technology and team-related mediation of their teaching practice that presents them with many challenges. While we may use our face-to-face experience as departure point for understanding e-learning, we must do so with caution. There are similarities but face-to-face practice is not the same as e-learning practice.

In terms of increasing accessibility, the teaching staff are faced with developing multiple representations of their e-learning courses or representations that are more adaptive to the needs of students with disabilities.

The multiple representations approach often fails to be maintained over time since staff focus on the mainstream Web materials and often fail to remember to update the alternative Web resources (Stillman, 2001). Staff face a similar dilemma when they are developing e-learning resources and transferring them to different applications e.g. from MS Word to MS FrontPage.

Our favoured approach is to develop representations that are more adaptive to special needs by encompassing adaptive representations of the resource that the student may view with a standard Web browser and/or Assisted technology. Table 5 summarizes some simple strategies teaching staff may adopt.

Again, the comments at the conference workshop indicated the best approach would be to develop content materials in XML, in preference to Adobe Acrobat or MS Word. Development of course material with XML is at present impractical since there is a lack of sympathetic tools for non-specialist users. Content development becomes a significant problem for many teaching staff when we suggest they develop online resources in XML or HTML, or develop Video or Audio resources. Even, some tasks in the previous list are beyond many teaching staff and may be seen by many as unreasonable and beyond the requirements of their work. Additional resources and university-wide support are needed even just in achieving Priority Level 1 that only requires correct HTML usage.

Table 5. Strategies for Teaching Staff

Feature	Inclusive Practice
Images & animations	Use the Alt attribute to describe the function of any visual elements.
Image maps	Use client-side MAP and text for hotspots.
Multimedia	Provide captioning and transcripts of audio, and descriptions of video.
Hypertext links	Use text that makes sense when read out of context. Avoid “click here”
Page organisation	Use headings, lists and consistent structure. Use Cascading Style Sheets (CSS) for layout and style where possible
Graphs & charts	Use the longdesc attribute (not a supported tag in current popular browsers) or summarise and provide link to summary page via a D symbol inserted next to graphs or other images that need explanation.
Scripts, applets & plugins	Provide alternate content in case active features are inaccessible or unsupported on client’s browser.
Frames	Use NOFRAMES and meaningful titles. Major problem with using NOFRAMES is that these alternate pages are often poorly maintained and not updated appropriately.
Tables	Make line-by-line reading sensible. Use appropriate table descriptors.
Check your work	Check your work with DLO, Quality Assurance Guidelines for Accessibility.

Support staff

The university employs both academic and general staff to assist teaching staff and students with e-learning. It is this network of staff that must support inclusive practices through the advice and practical help they provide for both staff and students. Staff in the various technical support units, academic development centres, equity and social justice units and student learning support must strengthen their associations and collectively develop a greater sensitivity to inclusive teaching practices. In practical terms it means these people must be represented on any reference group that the university establishes to support student services, especially those related to teaching and learning. Besides building relationships through face-to-face meetings, a broader network of support from units not normally known for their day to day collaboration must share information, resources and opinions about relevant issues via the computer mediated communication networks now operating within the university. The role of the Equity and Social Justice at Victoria University and in particular that of the Disabilities Liaison Unit (DLU), is central to the university-wide evolution of support for inclusive practices. However, these networks will likely need championship at the DVC or professorial level.

It is important to recognise the different staffing groups crucial to the effective implementation of the roles and strategies identified in Table 4.

Educational and professional development activities

The professional development of e-learning curriculum must demonstrate greater inclusiveness in its curriculum and practices. We suggest all the professional development curricula include issues related to privacy, disability and diversity where appropriate. For example, the current professional development program for online learning using WebCT (refer http://ceds.vu.edu.au/onlinelearning/) must both include topics related to privacy, equity and accessibility, and demonstrate inclusive practices in simple practical ways. Accessibility must be discussed at all levels of the program, although the complex practical strategies for writing more inclusive Web based resources may occur throughout the Level 4 clinics. Furthermore, any educational development support university staff receive must include elements of accessibility even if such advice only serves to raise the awareness of university staff to the problem of accessibility and the Web.

ITS and Help support staff

IT staff are often those responsible for the deployment of central e-learning delivery, communication and management systems, although the e-learning infrastructure is often determined by senior management, academic board and/or a flexible learning reference or steering group. ITS support staff, in conjunction with e-learning teaching staff and support staff, must identify the limitations of e-learning systems and provide information to university administrators who must then place pressure through their buying power to urge e-learning software developers adopt universal design principles. In addition, Webmasters, e-learning administrators and the DLU have important roles in this intelligence gathering required to provide university administrators and committees with the information they need to make informed decisions and/or recommendations. Again, the key point here is we seek advice widely rather than rely solely on the interests of one section of the university.

Teaching staff and students often use the contact person(s) associated with a particular system's logon-screen as the first step to solve their specific problems in using e-learning ICT systems. Alternatively, students seek help from the university's Help Desk. Eventually at Victoria University, a Help Desk network may provide both students and staff with assistance. Consequently, it is important that the people providing the help desk service, wherever it occurs, are trained to provide minimal advice on accessibility issues or at least advice on where to obtain the appropriate support.

In addition, it is wise to include the advice of the support staff in the development of resources, whether online, CD-ROM or in print, for e-learning. The support staff are often the people who constantly help staff and students solve their problems. Their collective wisdom is something the university must aim to capture in order to provide a deeper understanding of how to build more inclusive e-learning environments.

Student learning support

Student learning support has an important role. At present, we understand relatively little about the student learning problems with e-learning in general. We know even less about the specific learning problems associated with students with disabilities who will now use our learning management systems. It is the student learning support staff who together with the Disability Liaison Unit (DLU) can increase the institutional knowledge of strategies for dealing with student e-learning problems, whether they are students with disabilities or not. Therefore, it is important that student learning staff actively engage in the university-wide accessibility support networks and policy making.

The University

The concept of best practice has been defined as "a holistic, comprehensive, integrated and co-operative approach to the continuous improvement of all aspects of an organisation's operations" (DETYA 1999, p5). We have already described strategies by which teaching and support staff may develop more inclusive practices. However, a greater sensitivity to discrimination is the responsibility of all within the university and must be institutionalised through policy, operations and the provision of resources. We suggest the following strategies for the university:

- A formal method for identification of such students at risk, and a firm policy of supported strategies that may be employed by the teaching staff in incorporating the needs of such students in an attempt at improving learning and promoting equity.
- A clear statement of institutional desire and intentions to develop e-learning that actively seeks not to indirectly discriminate against students in our community. Our aim should be to develop e-learning systems that are at least compliant with Australian standards.
- The inclusion of one or more workstations comprising modified equipment and enabling software must be a part of the upgrade of any mainstream open access laboratory.
- In addition, staff must have available, perhaps at a central location such as at the Flexible Learning Precinct, software, such as JAWS, that can be used for the testing of their HTML pages.

As suggested above, Help Desk staff need basic training in the support of students with disabilities with the staff of the DLU being a member of the peer support network for help desk staff. We also need to quantify the level of support that the General Help Desk staff should be expected to provide. The university must provide resources to enable the support staff network to develop and function at a level sufficient to raise the university's community awareness of disability issues. Furthermore, the network must have senior management acceptance and practical support if it is to provide the service level required.

The university must set up a resource room, at least at one campus (with the highest demand), where students with disabilities may use assisted technology and seek support from staff. Faculties must encourage early identification of student needs within subjects through the advertising of support and a willingness to develop support for those we now indirectly discriminate against.

It is again timely to emphasise that this increase in resources may prove insignificant compared to the eventual costs of litigation.

Conclusions

In this paper, we describe e-learning as being sometimes exclusive but with the potential to be inclusive. It provides us with a way of bringing some marginalised groups into our learning community and further including some of those already present.

There are significant challenges in the introduction of e-learning: inclusiveness requires a greater sensitivity to the different learning issues of students by academics, increased practical help from the various support staff that constitute the e-learning teaching team (in its broadest sense) and institutional commitment. Ultimately, it is the moral and legal responsibility of us all to develop practices that are inclusive. A sensitivity to e-learning and how it includes and excludes different groups of students must be reflected in our policies, resource allocations, operations and discussions within our university community at all levels.

References

ABS (1999), "4430.0 Disability, Ageing and Carers, 1998 Summary of Findings", Australian Bureau of Statistics, 1999

http://web.mit.edu/ada/slides/slide3-1.html

Chickering, Arthur W. and Ehrman, Stephen C. (1993), "Implementing the Seven Principles: Technology as Lever", http://www.aahe.org/technology/ehrmann.htm

Chickering, Arthur W. and Gamson, Zelda F., (1987), "Seven Principles for Good Practice in Undergraduate Education". A summary may be accessed from http://thunder1.cudenver.edu//OTE/nn/vol1/1_8.htm.

Chisholm, Wendy, Vanderheiden, Gregg and Jacobs, Ian, Editors, (1999), "Web Content Accessibility Guidelines 1.0", W3C Recommendation 5-May-1999 http://www.w3.org/TR/1999/WAI-WEBCONTENT-19990505/

Chizmar, John F. and Walbert, Mark S., (1998). "Web-based learning environments: Issues of best teaching practice" http://www.econ.ilstu.edu/Jack_Chizmar/Int_Tech/paper.html.

Costello, Joanne (1999) ISNews, Vol. 14, No. 6. http://web.mit.edu/is/isnews/v14/n06/140604.html.

DETYA (1999), "Assistive Technology: Meeting the technology needs of students with disabilities in post-secondary education", 99/6, Institute of Disabilities Studies Deakin University, November 1999, Evaluations and Investigative Programme Higher Education Division, Department of Education, Training and Youth Affairs, Commonwealth of Australia.

DETYA (2000), "Equity and the Use of Information Technology in Higher Education: A UTS case study", 00/11, August 2000, Evaluations and Investigative Programme Higher Education Division, Department of Education, Training and Youth Affairs, Commonwealth of Australia.

EDNA, "Authoring Guideliness for Web Accessibility", Education Network Australia, http://www.edna.edu.au/EdNA

Gergely, Caroline (2000), "Universal Design of Websites and WebCT Platforms",

Innes, Graeme, (2000), "Real Law in Virtual Reality: Web Access for Australians with a disability", International Web Accessibility Summit, November 2000, Melbourne, Australia.

Showcase Presentations,
http://www.gsu.edu/~wwwdls/show_case/Presentations/universal_design.html

Pearson, Elaine and Koppi, Tony (2001), "Strategies for Developing Inclusive Online Courses", WebCT Asia Pacific Conference, Adelaide, Australia April 2001.

Stillman, Larry (2001) Presentation at e-learning: ethics and equity, Victoria University

White, Jason, Chisholm, Wendy and Vanderheiden, Gregg, Editors. (2001), "Web Content Accessibility Guidelines 2.0", W3C Working Draft 25 January 2001, http://www.w3.org/TR/WCAG20/

Worthington, Tom (2001), "Olympic Failure: A Case for Making the Web Accessible", For INET 2001: Internet Society Conference, 8 June 2001, Stockholm http://tomw.net.au/2001/bat2001.html

Worthington, Tom (2001), "Olympic Failure: A case for making the Web Accessible", ", International Web Accessibility Summit, November 2000, Melbourne, Australia.

Please note: Website references accessed on February 1, 2002.

[1] Cahill, Kathy and Foster, Jean, "Web Accessibility and Universal Design" http://web.mit.edu/ada/slides/slide3-1.html
[2] Sources: MIT Disabilities Resources: Universal Design and Web Accessibility http://web.mit.edu/ada/waccess.html and WAI Quick Tips Reference Card http://www.w3.org/WAI/References/QuickTips/ (c) W3C (MIT, INRIA, Keio) 2001/01

Access to the internet for marketing students – a pilot study

JEFFERY KIDD &
HELEN MADDEN-HALLETT
Victoria University

There is a trend in tertiary education towards making material available on the Internet. This allows students to obtain details of courses and subjects by accessing web pages to which they are referred by their lecturers. However, this trend presupposes that all students can access the Internet with equal ease, and in fact this may not be the case. At one end of the scale some students have ease of access to Internet connected computers. This may be through home, work, university, Internet cafes or via friends' computers. At the other end of the scale some students are only able to access the necessary educational information via the computer facilities at their university. For these students there may be additional difficulties or inconveniences if they are unable to use the resources for extended periods of time. These students are often part-time, female students with job and family responsibilities.

This paper discusses some of the equity issues relating to electronic education in general, and the equity issue of access in particular. The usage of the Internet by Victoria University students at the Footscray Park campus studying Introduction to Marketing (BHO 1171), a core subject in the curriculum of the Faculty of Business and Law courses, is examined. The data collected, in the pilot research project undertaken, relates to the ownership of a computer, and whether or not Internet connection is maintained at home. The place of access for all students is also investigated (whether at work, university or elsewhere, such as through a friend's computer or an Internet cafe). Students were asked if they had ever used the Internet to order goods and/or services. The data are then compared with similar data collected at Swinburne University, and the Sunbury campus of Victoria University. It is planned to continue collecting similar data over a number of subsequent semesters in different years for a longitudinal study.

Use of the Internet

Technology is constantly improving the means of communication, from the first typewriter to the latest word processor and the Internet. Students and business operators in the 21st century will need to be familiar and conversant with all the technological tools available. E-mail, word-processing packages and personal and business Web sites have become accepted usage in business and education, as well as in other fields.

As a result, educators need to expose students to these technological advances, so that they are easily accessed and used as an enhancement to learning and when students enter the work force. Thus students need to learn more than they used to learn--now they need to learn, in addition to the subject material, the variety of ways in which it may be accessed and researched. Technological literacy demands that students spend time and effort in mastering the tasks necessary to perform these activities and build a skills and knowledge base. This in turn presumes that students have the equipment necessary for this practice, such as computer hardware and software. In the case of this paper, this means access to a computer, and access to the Internet connected to that computer. The final barrier is that of the financial cost incurred from purchasing or leasing a computer, contracting an Internet provider and the costs of consumables.

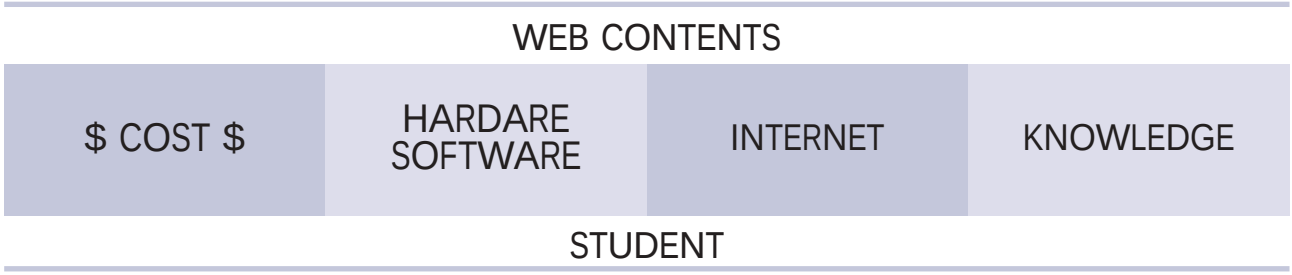

Figure 1 – The barrier between students and access to web-based materials

The main thrust of this paper is to examine the issue of equity as it relates to basic access in terms of space, time and economics. Other issues of equity that are related to the availability and usage of new technology include consideration of personality types (Zeldman in Kilian, 2000), individuals with disabilities (Grimaldi and Goette, 1999), or discrimination against individuals because of their background, race, colour, immigration status, national or ethnic origin, gender, age, disability or socio-economic status (Equity and Social Justice Policies, Victoria University, 2001, p.7). The primary focus of this paper focuses on access in terms of personality type, disability and, to a lesser extent, gender and socio-economic status of students.

The main use of the Internet at present in the subject Introduction to Marketing (BHO 1171) is in the provision of material that may previously have been made available in hard copy. This means course and subject outlines, assessment details, case studies, notes, and any other material related to a course or subject. In addition the powerpoint slides used by the lecturer in association with the current text book are to be made available to students. Additionally, students access more than just educational materials. There is a plethora of administrative and organisational material available via the Internet which makes student life more manageable and therefore allows students to focus on the main activity of learning. Such material includes course application details and forms, exam timetable and results, class timetables and generic university information. These facilities are intended to supplement face to face contact with students rather than substitute for it.

Other universities and faculties may use applications such as chat rooms, bulletin boards and synchronous chat (Kirkpatrick, 2001). The extreme of electronic educational provision is distance education mode: making material available on the Internet is a step towards making education available globally, 24 hours a day, 7 days a week. This may change the way universities view their respective target markets. Communities may see the universities shift from a geographic catchment mode to one more purely competitively based on a student's ability to pay fees, to reach the academic entry level and provide their own technology-based resources such as computer and internet access. Some writers enthusiastically embrace this (Dodge, 1996), while others feel that the electronic courses are simply the old correspondence courses presented with new technology: "old wine in new bottles" (Saunders and Weible, 1999). Either way, it may be expected that electronic technology will change the way education is delivered. The most significant questions concerning this move to a technology-based provision of education are: How much? How soon?

One of the implications of this march into technology-based learning is for the notion of the level playing field. One may argue that it is the moral and ethical duty of universities as government-funded facilities not only to provide appropriate technology support to students but to provide this at the pace at which it is required. Additionally, students without the technological platform are further disadvantaged because some academic research journals and other materials are becoming increasingly difficult, if not impossible, to access in hard copy. It is envisaged that this movement will not only continue but will accelerate.

Many writers do not even consider issues of access or other forms of equity in their discussion of the new technology. For example, Kostopoulos (1998) lists the issues that are associated with Internet-delivered education as being: academic, technical, administrative, instructional and behavioural. His remarks regarding equity are to the effect that the Internet assists students who are presently suffering from time or geographic disadvantages. He appears to presume that all students will have the access that is needed by having the necessary equipment and knowledge to hand. The presumption that Internet-based material will make education more accessible is a theme of many papers (for example, Scoffield, 1999). Similarly, Milliken (1998) assesses student perception of electronic lectures in marketing in a detailed analysis, but does not ask any questions relating to difficulty in accessing equipment. Even Peled (2000), writing about bringing the Internet and multimedia revolution to the classroom, comments on the difficulties that universities may face in keeping pace with technological advances or persuading staff members to utilise the Internet, rather than discussing the difficulties that students may face.

Personality types and their behavioural approach to using web sites

Kilian (2001) comments that computers condition users to receive jolts, where a jolt is defined as " a sensory and emotional reward that follows a prescribed action" (page 1). At the same time, we are slowed down by being unable to read screen text as fast or as easily as hard copy. So the effect of the Internet is to provide users with something that affects, and is affected by, personal motivation, part of personality. Zeldman, quoted in Kilian (2001), suggests that there are three different types of people who access the Internet. Group 1 viewers would rather be viewing television and are looking for "eye candy". They use text only to direct them to another audiovisual jolt. Group 2 want information so that they can adapt it for their own work, for example, a business plan on which to model their own. Group 3 are readers who will scroll through long documents, or will download what they find, print it out and read it at their leisure.

Younger people are used to television and computer games and it could be argued that their span of attention is short because they are always seeking new jolts, while perhaps older people are more likely to be readers. Alternatively, a generalisation could be that some students are discriminated against because they are more likely to be Group 1 types rather than Group 3 types. Loading material onto the Internet, or using the Internet to replace face to face contact, may therefore be discriminating against certain students on the basis of their personality types. To address this issue the web page designers must endeavour to provide sites that are suitably "sticky" for all types of users.

Disability

Certain aspects of disability may affect usage of the Internet. Lack of mobility may make it easier for students to access material by computer rather than travelling to campus. However, arthritis or visual degeneration may impair usage. Age introduces another factor: some older adults are susceptible to "maladies such as contrast sensitivity (the ability to discern the difference between an object and its background) and delayed glare recovery (difficulty recovering from light scatter)" (Trocchia and Janda, 2000, p. 611) which may inhibit their use of a computer and thus disadvantage them in accessing the Internet. The authors suggest that larger keyboards and magnified computer screens may assist to minimise these problems. The business and social community recognises the importance of continual learning and retraining as is evidenced by the emergence of the university of the third age. This demographic and psychographic cluster could provide a viable market for universities as communities are increasingly ageing. It could be a profitable market segment if due provisions were made for ease of access.

Students from non-English-speaking backgrounds

Victoria University has 10.3% of higher education students who are from a non-English-speaking background (that is, arrived in the last 10 years from a non-English-speaking country and speak a language other than English at home). This contrasts with the national average for Australia of 5.3% (Cooke, 2001). These students may find demands for computer literacy an additional hurdle.

Indigenous students

Rural Indigenous students may experience access difficulties with computers and the Internet, and have traditionally been poorly serviced by the education system. However, according to Page and Miller (2001) the use of e-media delivery for e-learning is showing considerable promise for Indigenous learners, educators and communities. This enables these students to remain in their traditional communities, and to use computers as an empowerment tool to learn not just about the educational content, but about information technology and the use of computers as well.

Gender – female students with family and job responsibilities

Effective Internet access may well be the saving grace for women with family and job responsibilities. Given that 55% of women between 15 and 64 are currently employed (Schiffman et al, 2001, p.426) and some of those are undertaking further studies, the issues of time management and time telescoping are of major importance in the provision of further education for this demographic. Indeed, it may be argued that the provision of remote Internet access may provide the time saving that makes a significant difference between undertaking further education or not, for this group. Specifically this relates to the time saving associated with less travel to and from campus for classes or to use computers and library facilities. Additionally the time saving associated with the speed of locating the required subject materials and academic research materials enables this demographic a greater likelihood of educational success.

Low socio-economic status and the impact of technology

Students at Victoria University who are defined as low socio-economic status amount to 24.4% of the student population, compared to a national average of 14.7% (Cooke, 2001). Low-income students find it particularly difficult to purchase computers and keep them up to date. According to Kasidis (2001):

> the vast majority of low-income earners simply could not afford the high costs associated with Internet based learning, particularly in respect to the technological infrastructure required and the constant necessity for upgrades. Most low-income earners spend a large proportion of their income on basic necessities such as food, clothing and shelter with very little left for expensive technological devices such as computers, printers, modems and software.(p.1)

This is supported by Strauss and Frost (2001, p.55) who suggest that the annual median household income of the typical Internet user is $10,000 higher than that of the United States population in general. Corkindale (2001, p. 69) points out that home ownership of computers has plateaued at about 50%, partly because computers are twice as expensive in Australia as they are in the United States.

The most apparent limitation on this group is their ability to access a computer from a remote location and thereby leverage the time saving of not having to physically travel to campus. Additionally this group will be more heavily disadvantaged from technology adoption by universities because they will spend a greater proportion of their income on printing costs. These costs, prior to the move to a technology focus were borne by the universities. In a cost-cutting exercise students now pay for all printed materials down loaded from the web or databases in the universities'

libraries. Further, costs incurred for duplication of subject outlines, lecture notes and other teaching materials are currently absorbed by students, whereas previously hard copies were provided to each student and were considered to be a part of the student fee.

Case study

The case study presented in this paper investigates the ownership of, and access to, the equipment necessary to use the Internet by Victoria University students. The students were all enrolled in Introduction to Marketing, in the Faculty of Business and Law.

Sample

The sample used was a class of Victoria University students in "Introduction to Marketing" (BHO 1171), numbering in excess of 300. They were in attendance at a lecture on the Footscray Park campus of the Victoria University. Victoria University has a high level of diversity: this class was chosen as it is a core subject, meaning that all students in the Faculty of Business and Law are required to complete it, regardless of the course in which they are enrolled. Thus the representation of various groups would be as diverse as the Faculty of Business population of students.

The student body at Victoria University as a whole contains one in three students of low socio-economic status, six times the national average rate, and in the Faculty of Business and Law, 29.4% of students are of low socio-economic status and speak a language other than English.

Method

The questionnaire was distributed to the students at the beginning of a 2-hour lecture, and they were asked to fill it in and drop it in a box at the end of the lecture. 300 students answered the questionnaire. The questionnaire was deliberately brief to ensure high participation as it was assumed students would be less likely to fill out a long questionnaire.

Analysis and Discussion of Results

Of the 300 respondents, 256 (85.3%) replied that they had a computer at home. However, only 140 (46.7 %) replied that they had connection to the Internet.

In comparison to figures released by the Australian Bureau of Statistics (ABS), this is higher than average, as 1999 figures from the ABS show that only 1.7 million households have home Internet access. In 1999, 50% of households owned a computer, but 704,000 households intended to acquire home Internet access in the next 12 months (Corkindale, 2001, p.69). Other figures show that there is a great demand for Internet access at home by adults (64%), while 47% would be interested in accessing educational services at home (Applebee et al, 2000, p. 141).

Students who answered that they had Internet connection were asked a different set of questions from those who reported that they were not connected to the Internet, but the actual wording of the questions was similar. Comparisons of results are shown in Table 1, results indicating response rates.

Table 1. Results indicating response rates

Question	Response	Students with Internet access at home	Students without Internet access at home
Have you ever ordered any goods or services on the Internet?	Yes	14.3%	4.0%
Have you ever used computers at the university to access the Internet?	Yes	79.3%	84.9%
Have you ever used computers elsewhere to access the Internet? (elsewhere being other than at the university)	Yes	72.1%	82.5%
If yes, where have you accessed the Internet?	Friend's house At work Internet café Other	42.5% 19.4% 10.0% 28.1%	46.5% 14.5% 4.4% 64.6%

The data relating to students' use of the Internet would seem to indicate that those who are already conversant with the use of computers and the Internet are more likely to continue to make use of it through work, friends and cafes; whereas those who do not have access from their homes are less likely to use work, friends or cafes to access the Internet.

The results indicate that students with access to the Internet at home are more likely to have ordered goods or services on the Internet. In the general population only 6% of Australian adults used the Internet to purchase or order goods or services in 1999, although this was twice as many as in 1998 (Corkindale, 2001, p.69). A higher purchase than average by students is to be expected as one may surmise there is already a level of familiarity with the technology through more exposure and use than for those without access from their home. The increased level of familiarity, and perhaps a more thorough understanding of the protocols in using the technology, for home access students, may be all that was required to enable them to overcome any reticence with using the Internet to purchase goods and services. However, those with a computer at home and access to the Internet are still likely to access the Internet at the university. Again, this may be due to those students being familiar enough with the technology and confident enough to access the Internet regardless of their method of doing so.

Those without the Internet have used places other than the university to access it, with 64.6% reporting "other" as their answer. Further research is necessary to find out if this means the local library, a relative's house or somewhere else. Corkindale (2001, p.69) states that work and home were the main sites of Internet access in 1999 by adults, with a friend's or a neighbour's house being almost as common an access point.

The questionnaire also did not allow for responses relating to ownership or use of laptop computers. Many public facilities which provide computer and Internet access now also provide plug in stations specifically for laptop connectivity. This is the situation at Victoria University where the library facilities at Footscray Park campus are such that students can plug in their laptop and access the University Intranet and accordingly all the educational materials on site (Ponte, 2001).

Comparison with similar studies

A study conducted by Ali (2001) at the Sunbury campus of Victoria University revealed high ownership of computers and access to the Internet. In a sample of 139 students, only 9 (6.5%) did not have a personal computer at their current place of residence, and 6 of these 9 were intending to obtain a computer this year (2001). 37 students (27%) had more than one personal computer at home, and 36% had a personal computer for their own personal use (i.e. not shared). 78% of the students surveyed were connected to the Internet and 15% were intending to establish a connection this year (making the total 93% connected if this were to occur).

At Swinburne University, a survey of 1998 students at the Hawthorn campus found that 79.7% of respondents had access to a current model personal computer outside the university, and 40.8% of the survey respondents had access to the Internet outside Swinburne (Heskin and Kilsby, 1999, p.3). The figure for the Lilydale campus of Swinburne was even higher, showing that 86% had access to a current model personal computer.

Table 2. (Computer Ownership and Internet Access: Comparison with other Studies) shows the comparison between the various studies. Because of the growth in Internet access, the differences between 1998, 1999, and 2001 results are probably not now as disparate as shown, and further research needs to be undertaken to discern as to whether the increase in the number of students who have Internet access has stabilised.

Table 2. Computer ownership and Internet access: Comparison with other studies

	Swinburne University – Hawthorn campus (1998) (N= unknown)	Swinburne University – Lilydale campus (1998) (N=unknown)	Victoria University – Footscray Park campus (1999) (N=300)	Victoria University – Sunbury campus (2001) (N=139)
Access to a personal computer	79.7%	86%	85.3%	93.5%
Access to the Internet	40.8%	N/A	54.7%	78%

As can be seen from the table above, just within one university there can be a noticeable difference between the take-up rate of personal computers and also students' access to the Internet. At the two campuses of Swinburne there is a difference of 6.3% in the take-up rate of technology. At the two campuses of Victoria University there is a difference of 8.2% in the adoption rate of home ownership of a personal computer and a difference of 23.3% in home connectivity to the Internet. 15% of Sunbury-campus-based students indicated their intention to connect their home computer to the Internet during 2001. This rate of adoption may be a general trend across the student demographic. Even if this is the case, the issue of universities providing computer access to the Internet for their students is still a significant concern, considering that even with access from home students still utilise university resources. Additional research needs to be undertaken into the areas of number of students with computer and Internet access, where they access the Internet and why they do so.

Recommendations

Further studies should include the aspects of gender, language, disability, age and socio-economic status to investigate possible correlation between degrees of technology access and these variables. University management policies need to consider the provision of personal computers and Internet access for disadvantaged individuals at their place of residence. This would enable those who are highly disadvantaged to improve their possibilities of success.

Further research studies could include international comparisons of access to the technology, involving students in Australia, Malaysia, Singapore and Hong Kong.

Conclusion

While many writers who discuss the Internet and its use in education disregard the issues of equity and access, these should be considered when adopting new technology and expecting students to have the equipment necessary to perform certain tasks of accessing and researching educational material. While the surveys indicate that access is not a problem for the majority of students, the university should ensure that for those who find it difficult, there should be equipment made available to ensure that no student is disadvantaged because of any reason beyond their control.

References

Ali, S. (2001) "Survey results - PC and Net access", personal e-mail communication circulated to the School of Hospitality, Tourism and Marketing, Victoria University, Melbourne.

Applebee, A., Clayton, P., Pascoe, C. and Bruce, H. (2000) "Australian academic use of the Internet: implications for university administrators", Internet Research: Electronic Networking Applications and Policy, Vol.10, number 2, pp. 141-149.

Australian Bureau of Statistics (1999) Use of the Internet by Householders, Canberra, February (8147.0).

Barraket, J., Payne, A.M., Scott, G. and Cameron, L. (2000) "Equity and the Use of Communications and Information Technology in Higher Education - A UTS Case Study", Department of Education, Training and Youth Affairs, Canberra.

Beazley, K. and Lee. M. (2001) "Labor Unveils the University Of Australia Online", Joint Media Statement, 24 January, www.alp.org.au/media/0101/kbmlmsuao240101.html [accessed May 2001]

Cooke, J. (2001) Equity and Social Justice Branch, Victoria University, personal email communication with one of the authors.

Corkindale, D. (2001) "Country profile - Australia" in Strauss, J, and Frost, R. (eds) (2001) E-Marketing, Prentice Hall, Upper Saddle River, New Jersey.

Dodge, B. (1996) "Distance Learning on the World Wide Web", chapter 12 of Brandon, B. et al (eds)(1996) Computer Trainer's Personal Trainer's Guide, Que Education and Training, Indianapolis.

Equity and Social Justice Branch (2000) Equity and Social Justice Policies, Victoria University, Melbourne.

Evans, R. (1999) "Serving Modern Students in a Modern Society at the Community College: Incorporating Basic Technological Literacy", THE Journal (Technological Horizons in Education), Vol. 27, issue 3, pp. 102-111.

Grimaldi, C.and Goette, C. (1999) "The Internet and the independence of individuals with disabilities", Internet Research: Electronic Networking Applications and Policy, Vol.9, Number 4, pp. 272-280.

Heskin, K. and Tilsby, T. (1999) Academic Calendar Project, Swinburne University of Technology, Melbourne.

Howard, J. (2001) "Prime Minister's New Internet Home Page", www.pm.gov.au

Kasidis, V. (2001) "Online Learning - Paving the Way for a Knowledge Nation?" The Swine, Swinburne Student Union Newspaper, Vol. 12, Number 7, April 30, page 1.

Kilian, C. (2001) "Effective Web Writing", Internet/Web/Online Service Information, Miller, Freeman, Inc.

Kirkpatrick, D. (2001) "Who owns the curriculum?", E-Learning - Ethics and Equity Conference, Victoria University, Sunshine Convention Centre, Melbourne, April 20.

Kostopoulos, G. K. (1998) "Global delivery of education via the Internet", Internet Research: Electronic Networking Applications and Policy, Vol. 8, Number 3, pp. 257-265.

Milliken, J. (1998) "Assessing Student Perceptions of Electronic Lectures in Marketing", Virtual University Journal, Vol. 1, pp. 34-45.

Page, J. and Miller, A. (2001) "Who can use e-learning? - issues of access and equity to the equipment and delivery systems" E-Learning - Ethics and Equity Conference, Victoria University, Sunshine Convention Centre, Melbourne, April 20.

Peled, Al. (2000) "Bringing the Internet and multimedia revolution to the classroom", Campus-Wide Information Systems, Vol. 17, Number 1, pp. 16-22.

Ponte, F. (2001) Personal Interview. Business Librarian – Victoria University. Footscray Park Campus. Ballarat Road Footscray.

Saunders, G. and Weible, R. (1999) "Electronic courses: old wine in new bottles?", Internet Research: Electronic Networking Applications and Policy, Vol. 9, Number 5, pp. 339-347.

Schiffman, L. Bednall, D., Cowley, C., O'Cass, A., Watson, J. and Kanuk, L. (2001) Consumer Behaviour, Prentice Hall, Frenchs Forest, NSW.

Scoffield, S. (1999) "The changing face of the higher education student: proceedings of an Internet conference", Education and Training, Vol. 41, Number 5, pp. 253-258.

Strauss, J. and Frost, R. (2001) E-Marketing, Second edition, Prentice Hall, Upper Saddle River, New Jersey.

Sultan, F. and Henrichs, R.B. (2000) "Consumer preferences for Internet services over time: initial explorations", Journal of Consumer Marketing, Vol. 17, Number 5, pp. 386-402.

Trocchia, P.J. and Swinder, J.(2000) "A phenomenological investigation of Internet usage among older individuals", Journal of Consumer Marketing, Vol 17, Number 7, pp. 605-616.

Ward, M. R. and Lee. M.J. (2000) "Internet shopping, consumer search and product branding", Journal of Product and Brand Management, Vol. 9, Number 1, pp.6-20.

I hope that these articles have stimulated your thinking about the ramifications of this technology and its rapid introduction. We organised the seminar and this publication because we are certain that the needs of all students and academics can be accommodated as long as the ethical and equity dimensions are not forgotten. Indeed, a focus on continuously improving the quality of the learning and teaching in VU and other institutions requires these issues to be taken into account.

For example, ensuring that the electronic environment is accessible for students with a disability is beneficial for all students; dealing with the privacy issues means that the confidentiality of all student learning activities is maintained; and examining curriculum content to ensure inclusivity improves the learning experience of all, particularly those from the dominant culture.

I especially need to thank Sue Thurston and Cheyne Brown for their hard work in organising the forum; and the other members of the Organising Committee: Barbara Brook, Pat Bodsworth, Les Comley, Roger Gabb, Karen Jackson, Robyn Jackson, David McCallum, Leesa Wheelahan for their perseverance and intellectual input; and of course, Barbara Brook and Tony Gilding for their expert editing of this publication.

Judith Cooke
Acting Manager
Equity and Social Justice
March 2002