

Choosing and Using Technologies in Education and Training

Resources in Teaching, Learning and Evaluation

Further Reading

Brown, Stephen (ed.)

1997, *Open and Distance Learning: Case Studies from Industry and Education*, London, Routledge.

A book aimed at educators and managers considering how to introduce forms of technology-based flexible learning into a conventional, face-to-face setting, or grappling with the problems of doing so. It comprises 14 case studies from industry, commerce and education in Britain and Australia which show that the main issues tend to be related to human and educational factors rather than technical ones or even cost.

The case studies cover topics such as: costing models and investment strategies; user expectations and reactions; role of the tutor/trainer; methods of integration of technologies and flexible learning; leadership and the role of champions in introducing flexible learning; dissemination of expertise; staff development and student learning support systems; cultural change and vested interests; scalability and rates of change; evaluation strategies and techniques; collaboration and competition; and models for priority setting, planning and resource allocation. They also cover a range of old and new technologies, including print-based materials and video, stand-alone computer-based learning, and a variety of electronic and Web-based approaches.

The final chapter, by Stephen Brown, is a useful synthesis of the lessons learned in the diverse settings of the case studies, especially in relation to technology, human factors, and institutional cultural change. He argues that there is no one best practice, but each proposed innovation must take into account issues such as whether to set up an internal design and development team or outsource the specialist services; centralised versus distributed models of development and support; growth and integration of the innovation into the mainstream; learning support; and costing models.

Birks, A., Donnan, P. & Messing, J.

1995, '[A hypermedia teaching/learning resource for Grape and Wine Production](#)', *Occasional Papers in Open and Distance Learning*, Charles Sturt University, Vol. 18, Nov.

<http://www.csu.edu.au/division/oli/oli-rd/> Available in hard copy from CSU or online (site accessed June 1997)

A report on the design and teaching of a CD-Rom Macintosh program for the subject Grape and Wine Production. It analyses the development process, sets out an evaluation framework for the program, and concludes with comparisons between the CD-Rom and an earlier print version of the unit.

Evans, Peter,

1996, ['Development and delivery of a Graduate Certificate \(Open and Distance Learning\) via the WWW'](#), paper presented at AusWeb96, Southern Cross University.

<http://www.scu.edu.au/sponsored/ausweb/ausweb96/educn/> Site accessed July 1997.

A report on this course which is offered online by the [University of Southern Queensland](#). Evans covers the rationale for offering the course, the pedagogical principles underpinning its design and delivery, the course structure, materials development and production processes, the designs and software tools used in course construction, site creation and maintenance, and interaction with students.

Franklin, Nancy, Yoakam, Michael, Warren, Ron

1996, ['Distance Learning: a Guide to System Planning and Implementation'](#). Indiana University.

<http://www.indiana.edu/~scs/dlprimer.html> Site accessed July 1997.

A 'primer' for those planning and managing distance or flexible learning systems, which provides an introduction to flexible delivery, the technologies and keys to success. It covers needs assessment, technology selection, design and implementation of a distance learning system, management issues, training of teachers and support staff, and evaluation. The site provides information on how to order a hard copy of the 135 page guide.

Hills, Howard

1997, 'Lloyds Bank and multimedia', in *Open and Distance Learning: Case Studies from Industry and Education*, ed. Stephen Brown, London: Routledge.

A report on how a large British bank introduced technology-mediated teaching into its clerical and management training programs, beginning with interactive video systems in 1984 and moving on to computer-based training from the late 1980s. More recently, these approaches have been merged with face to face training, with multimedia providing a consistent training platform throughout the Bank's branch network, in conjunction with local flexible learning coordinators.

Gilbert, Cheryl

1996, ['Teaching and learning on the web at Queensland University of Technology'](#), Paper presented at AusWeb96 Conference, Southern Cross University.

<http://elmo.scu.edu.au/sponsored/ausweb/ausweb96/educn/gilbert/paper.html> Site accessed July 1997.

A report on ways in which Web technologies are being used in teaching a variety of science and social science subjects at QUT, recognising that most teachers presently see the web as 'foreign technology' and are concerned

about its effectiveness. Gilbert describes a QUT professional development initiative to help overcome this problem. QUT has set up a Webworkers group of staff from 27 different Faculty schools and service areas to share information and collaborate in designing, teaching and evaluating web-based learning.

Jegede, Olugbemiro J., Gooley, Anne & Towers, Stephen

1996, November, '[An evaluation of the Queensland Open Learning Network audiographic conferencing professional development programs](#)', *Journal of Instructional Science and Technology*, Vol. 1, No. 4.

<http://www.usq.edu.au/electpub/e-jist/vol1no4/abstrac4.htm#AbstractJegede>
Site accessed June 1997.

An evaluation of the QOLN audiographics professional development program which found that the majority of participants found the workshop beneficial; it was easier than they had expected, and their prior computing skills were irrelevant to their mastery of the use of audiographic conferencing equipment. They enjoyed the interactivity and learning environment characteristics of the audiographic equipment. The study comments on policy on training and professional development opportunities for teachers using audiographics conferencing.

[Journal of Instructional Science and Technology](#)

<http://www.usq.edu.au/electpub/e-jist/>

An Australian electronic journal (based at the University of Southern Queensland) which began in October 1995. Its focus is the design of instructional materials with particular interest in issues of instructional design in mixed mode teaching, on and off campus, in education and training. The journal publishes evaluations and other research reports, and also work in progress.

Laurillard, Diana

1993, *Rethinking University Teaching: a Framework for the Effective Use of Educational Technology*, London, Routledge.

This book, written by a leading UK Open University academic, has greatly influenced approaches to staff development in Australian universities in recent years. Laurillard sets out a framework to help teachers think about the nature and processes of learning and how best to use and combine new and established media in their teaching. Part 1 explores students' learning, and what it is that they need from educational technology. Part 11 looks at individual teaching methods and media, including non-interactive media (lectures, print, audio), hypermedia (CD-Rom and the Web), and interactive media (simulations, modelling programs). Part 111 examines design methodology, designing learning activities, setting up the learning context, and maintaining quality.

Lee, Victor, Murphy, David, Chan, C.C. & Chung, Linda

1997, 'Computer-aided distance learning: a case study', *Open Learning*, Vol. 12, No. 1, February, pp. 58-62.

A short but useful summary of the steps required to design, implement and evaluate a CAL package to teach elements of a computer and network architectures course which students had found difficult when taught more conventionally.

MacKinnon, Allan, Walshe, Bridget, Cummings, Michael & Velonis, Ursula

1995, 'An inventory of pedagogical considerations for interactive television', *Journal of Distance Education*, Vol. 10, No. 1, pp. 75-94.

The presence of cable TV has enabled British Columbian educators to use TV for teaching in increasingly sophisticated ways over the last 20 years. This article describes the use of multi-point interactive television conferences using a fibre optics telephone network; some were used as professional development for teachers, others for bringing together school students in scattered locations. The examples show much imagination and ingenuity.

Mitchell, John & Bluer, Robert

1997, [A Planning Model for Innovation: New Learning Technologies](#), report commissioned by Office of Training and Further Education, Department of Education, Victoria.

http://www.otfe.vic.gov.au/vet_vic/model/ Available in hard copy and online.

A study of whether, and under what circumstances, technologies such as computer-mediated communication, audiographics, computer conferencing and videoconferencing lead to improved learning outcomes in vocational education and training. It provides eight Australian case studies. It is a sober, realistic report which finds that learning outcomes have not been the strongest criterion for success in many Australian studies to date; that attitudes of teachers and students to new learning technologies is variable and sometimes idealised; that access remains a difficult issue; and that returns on investment must be evaluated not only in terms of cost savings but also in terms of access and learning outcomes. Mitchell and Bluer set out a planning model for optimal use of new learning technologies, based on performance indicators and staged implementation.

Moran, Louise

1997, 'Flexible learning as university policy', in *Open and Distance Learning: Case Studies from Industry and Education*, ed. Stephen Brown, London: Routledge.

A case study of a whole-of-institution approach to converging face-to-face and distance methods. The aim is a comprehensive transformation of teaching and learning, in which the use of appropriate technologies and learning resources plays a key role. The study outlines strategies for corporate planning, quality assurance and management of the processes

involved.

Nash, Chris & Alexander, Shirley

1995, '[Australia Street archive on the World Wide Web](#)', paper presented at AusWeb95 Conference.

<http://www.scu.edu.au/sponsored/ausweb/ausweb95/papers/education3/nash/>
Site accessed June 1997.

A summary of a large multidisciplinary project - the Australia Street Archive - creating curriculum materials in prototype multimedia form for distribution on CD-Rom for use in school and tertiary courses. It describes the project development strategy, narrative structures, and collaborations required to make it work.

National Council for Educational Technology,

1993, '[Direct Broadcasting by Satellite](#)', National Council for Educational Technology, UK.

<http://www.ncet.org.uk/projects/dbs/> Site accessed August 1997.

An evaluation by the Faculty of Education, University of Leeds, of a large-scale program called Satellites in Schools which involved direct broadcasting by satellite to 226 secondary schools in Wales. The report covers details of the equipment, its installation and support, program development and scheduling, and a formative evaluation of teaching/learning issues including interest and motivation, providing up to date resources, authenticity, learning effectiveness, learner independence, etc. Several case studies follow the project in detail.

Oliver, Ron & Omari, Arshad

1996, '[The place of the WWW in an undergraduate multimedia degree program](#),

Paper presented at AusWeb96 Conference, Southern Cross University.

<http://elmo.scu.edu.au/sponsored/ausweb/ausweb96/educn/omari/> Site accessed July 1997.

An outline of experience at Edith Cowan University in developing and teaching an undergraduate degree in Interactive Multimedia Technologies. The paper discusses the form and structure of the program and the place of the Web as an authoring medium. Teachers will find especially useful the sections on teaching and learning issues raised by the program, such as catering for individual and diverse learning needs, demonstration of skills acquisition, and choice of pre-requisite knowledge bases on which to develop course content.

Oliver, Ron

1995, *Networks Into the 21st Century: an Evaluation of the Western Australian Telecentre Network*. Report commissioned by the Western Australia Department of Training. Perth.

A comprehensive evaluation of a vibrant, highly successful organisation

comprising (in 1995) 68 linked Telecentres providing enhanced access to education, training, communication and enterprise for rural communities in Western Australia. While the evaluation's purpose was to consider future organisational arrangements for the Network, the report also provides valuable data on how such access centres can/should be set up and run to support technology-mediated education and training in harmony with other entrepreneurial activities.

Open Learning Technology Corporation

[Models for evaluating technology - a bibliography.](http://www.oltc.edu.au/reports/models/modelsft.htm)

<http://www.oltc.edu.au/reports/models/modelsft.htm>

An annotated bibliography of papers and other materials providing models for evaluating each type of technology commonly used in distance and flexible learning, plus general models for evaluating flexible delivery and for conducting cost benefit analyses.

Open Training Services, Western Metropolitan College of TAFE, Victoria.

Teaching and Learning Online: [Case Study One: Learning Management System.](http://www.bhtafe.edu.au/cis/onlinetraining/talon/coursenot/Assess/case1.htm)

<http://www.bhtafe.edu.au/cis/onlinetraining/talon/coursenot/Assess/case1.htm>
Site accessed August 1997.

The Learning Management System (LMS) has been used in many TAFE and tertiary institutions across Australia in the last decade. Although the technology is now (1997) somewhat outdated, its use for online assessment and management is well tested, and many of the benefits, problems and issues associated with the system will be relevant to the use of emerging technologies. This report outlines use of the LMS in a Pulp and Paper Making Certificate.

Ramsden, Paul

1992, *Learning to Teach in Higher Education*, London: Routledge.

This well researched, thoughtful book by a leading Australian academic addresses the problem of how best to evaluate and improve the standard of teaching in a climate of accountability and appraisal. Designed for practitioners, it links educational theory and the practical realities of teaching, arguing for a more professional approach to teaching. Ramsden outlines the experience of learning and teaching from the student's point of view, sets out a set of principles for effective teaching. He then considers these principles in the light of four problems commonly encountered by teachers - organising course content, selecting teaching methods, assessing student learning, and evaluating the effectiveness of teaching. Case studies of good practice are used to link theory and practice, and the book concludes with examination of appraisal, performance indicators of teaching, accountability, and educational development and training.

Robson, Joan

1996, 'The effectiveness of teleconferencing in fostering interaction in distance
Distance Education, vol. 17, No. 2, 1996, pp. 304-334.

A detailed study of the use of teleconferencing in teaching Year 11 and 12 mathematics students in a cluster of rural schools in NSW. Although one aim was to improve interaction among students, most interactions were between individual students and the teacher, and the study raises useful questions about lesson structuring, power and control in the class, and the potential advantages of using audiographics rather than audioconferencing for the purpose.

Taylor, Peter G., Lopez, Lucy & Quadrelli, Carol

1996 (Dec.). [Flexibility, Technology and Academics' Practices: Tantalising Tales and Muddy Maps](http://www.anu.edu.au/uniserve/eip/muddy/muddy.html). Evaluations & Investigations Program, Department of Employment, Education, Training & Youth Affairs, Canberra, AGPS.
<http://www.anu.edu.au/uniserve/eip/muddy/muddy.html> Site accessed August 1997.

A project which investigated the relationships between diversification in modes of delivery, use of information and communications technologies, and academics' teaching practices, and the context in which those practices are employed. The investigation used three sites in Brisbane - education and law at the Queensland University of Technology, and humanities at Griffith University. The project found that flexible modes of delivery can be educationally defensible and professionally satisfying, and that the attitudes and beliefs of academics, managers and support staff about teaching and learning can represent formidable barriers to change. The report proposes ways of creating conditions conducive to change. It also provides seven case studies drawn from the three sites.

Thorpe, Mary

1988, *Evaluating Open and Distance Learning*, London, Longman.

One of the major texts on evaluation for practitioners of distance and flexible learning, this book includes a useful chapter on strategies for piloting course materials (meaning mainly print) during the stages of development/production and delivery, including peer and teacher feedback.

Tinkler, Don, Lepani, Barbara, & Mitchell, John

1996, *Education and Technology Convergence*, Commissioned Report No. 43, National Board of Employment, Education & Training. Canberra, AGPS

NBEET commissioned this report as part of its examination of the nexus between employment, convergence of communications technologies, and the ability of the education and training systems to equip the workforce with the required knowledge and skills. The report focuses on three aspects. It provides an overview and assessment of the technological infrastructure used in the delivery of education and training, including availability and

application of computing and communications technologies and technical support services. It identifies needs and opportunities for professional development and support of educators and trainers as a key priority. And it reports on strategies available and required to ensure maximum access for students, especially those in equity targeted groups. Notwithstanding rapid changes in the technological, if not the policy environment, the report is a valuable survey of what is happening 'on the ground', and the emerging problems and issues which policy makers and educators must deal with. Each area is illustrated with case studies

Willis, Barry

[Distance Education at a Glance.](http://www.uidaho.edu/evo/distglan.html)

<http://www.uidaho.edu/evo/distglan.html>. Site accessed July 1997.

A set of 14 concise, well-presented guides on distance learning, covering an overview, teaching strategies, instructional development, evaluation, instructional television, instructional audio, computers in distance education, print in distance education, learning strategies, distance education research, interactive videoconferencing, the worldwide web, copyright, and a glossary of terms. The guides can be downloaded free.

Wood, H.

1995, [Designing study materials for distance students](http://www.csu.edu.au/division/OLI/oli-rd/occpap17/design.htm), Occasional Papers in Open and Distance Learning, Charles Sturt University, Vol. 17, May.

<http://www.csu.edu.au/division/OLI/oli-rd/occpap17/design.htm> Available in hard copy from CSU or online.

An evaluation of good practice in designing and teaching science subjects at a distance, especially one which would normally involve laboratory work. The subject evaluated was an introductory biology unit comprising a print and video package built around a commercial text.

Yetton, Philip et al

1996, *Managing the Introduction of Technology in the Delivery and Administration of Higher Education*, Evaluations & Investigations Program, Department of Employment, Education & Youth Affairs, Canberra, AGPS.

Report of a project conducted by a team coordinated by the Australian Graduate School of Management at the University of NSW. The project investigated how Australian universities are managing the introduction of technology to delivery and administer higher education, studying 12 universities in some detail, and another eight in follow-up studies. It examined five factors - strategy, developing new roles and skills in staff, management processes and evaluating IT investments, IT management structures, and managing change and IT integration, and outlines three emerging models of the university of the future.