
Reviews

edited by Philip Barker

Martin Oliver (ed.), *Innovation in the Evaluation of Learning Technology*, London: University of North London, 1998. ISBN: 1-85377-256-9. Softback, 242 pages, £15.00.

This book is written from the viewpoint that learning technology, although perceived of immense value, is not being exploited to its full potential, nor are its effects on student learning fully understood. Obtaining as accurate a picture as possible in order to correctly to influence policy and practice is an activity that is rightly receiving increased attention. No one could expect a 'how to do it' book for this subject area as outcomes (be they of learning, cost-effectiveness or of more abstract influence) are dictated by a wide range of factors. Martin Oliver (from the LaTID group at the University of North London) has gathered a wide range of interesting papers (derived from the Evaluation of Learning Technologies conference, 1998) to demonstrate the diversity of approaches in this field. The book comprises some 242 pages that are arranged into 14 chapters, written by those involved in related projects.

The opening chapter provides an excellent overview of the subject, highlighting the difference between the intentions of educators and real-world usage. Various methods of evaluating educational effectiveness are briefly described and comparisons of their applicability are made. The descriptions of the methods are brief but the highlight here is on their purpose. It is made quite clear that the methods described

will not provide the answers simply by their application. Several projects of note are described in more detail with an emphasis on their comparative merits, which I found to be the greatest feature of the book. The section describing the evaluation of economic effectiveness addresses this particularly awkward aspect by listing the various incentives behind the endeavour and the success of measures to date. There are of course, more questions than answers, but some guidelines for refining procedures are offered.

The majority of the contributions describe the evaluation of Web-based resources and the authors are refreshingly frank in the admission that 'no single approach exists that suits all needs and avoids any difficulties' and that 'educational value is difficult to specify let alone create a metric for'. Many of the projects described consider the common problems of using quantitative and qualitative methods, for example, the ethical and logistical considerations of qualitative methods, the usefulness and time-consuming nature of quantitative methods.

Chapter 2 is a review of the CIAO! framework developed by the Computer and Learning research group at the Open University. It centres on three aspects of educational impact: context (the aims as described in policy documents by the CAL designers), interactions (records of activity through online logs, diaries, observation and computer recording) and attitudes (affective outcomes through interviews and measures of learning). It is argued that attitudinal data may

not reflect the educational benefit and this may be related to expectations. However, tracking outcomes is limiting because 'it only tells you what has happened, not how and why'. The chapter includes a particularly useful section on the possible disadvantages of the framework.

Chapters 3 to 5 discuss the tracking of interactivity, the evaluation of collaborative tutorial teaching and evaluation using ethnography. The common problems of using quantitative and qualitative methods are touched upon in the majority of chapters, i.e. the ethical and logistical considerations of qualitative methods, and the usefulness and time-consuming nature of quantitative methods. Chapter 6 describes the use of Time-Lapse Rep Grids, a method that can be used for the charting of personal change after experiencing educational technology. The Repertory grid technique enables the mapping of an individual's internal views and theories and can be used to monitor changes in perceptions: 'The validity of the instrument is checked by examining the meanings with the participants.' The grids can be used to generate both quantitative and qualitative data, as graphing the data is possible.

Other approaches described in the book include: 'Insights through Triangulation' (which helped to assess the direction that the contributor's University should take in the future); 'Evaluation of confidence assessment' (there was some self-assessment in that process, and refinement of knowledge structures); and a 'Toolkit for Tracking Interactivity and Learning'. This evaluation of the user's interactivity with a CD-ROM-based tutorial called 'Galapagos' adopted a novel approach for monitoring students' behaviour while at a computer. The observations were made by recording the output from the computer screen to video and simultaneously recording the student's activity around the computer, whereupon the two sources were mixed together onto one tape.

The three chapters reviewing the evaluation of economic effectiveness varied considerably in the depth of their respective approaches. Together, they serve to highlight what we might consider to be realistic achievements in our own studies. I found that some of the chapters were lacking a reflection of the value of their findings whereas others critiqued their work and made recommendations for future practice. On the whole, the breadth of purpose and variety of

approaches described in this book make valuable reading. The inclusion of further examples to illustrate the paper-based tools described would have been a valuable addition to a highly relevant collection of papers.

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C. Steed, *Web-Based Training*, London: Gower, 1999. ISBN: 0-566-08103-2. Hardback, xv265 pages, £45.00.

Increasingly, the Internet and other related technologies such as intranets and extranets are being used as support aids to facilitate the delivery of teaching and learning materials. This book describes the principles and techniques that are involved and also explains why Web-based training (WBT) and Internet-based training (IBT) have become so important in both academic and non-academic organizations. The material contained in the book is organized into eight basic chapters. Each one of these covers a major theme area such as providing background material, theoretical issues, examples of current practice, evaluation and future directions of development.

In his opening chapter (entitled 'Why Web-Based Training?') the author describes the nature of the Internet and why he thinks it should be used for the delivery of instructional resources. Various examples of successful Web-based training are presented. The chapter concludes with a discussion of the benefits and drawbacks of this approach as seen by users, managers and providers. In his second chapter the author explores the learning issues and implications of WBT. Following a discussion of its benefits and value, the chapter moves on to review some of the important instructional principles that should be used when dealing with adult learners. It then proceeds to a section that analyses and describes the instructional design methodologies employed by two commercial WBT course providers - CBT Systems (<http://www.cbtsys.com>) and NETg (<http://www.netg.co.uk>). Within this section a number of well-known instructional theories and methodologies are touched upon - for example, Bloom's taxonomy, Mager's instructional objectives and Keller's ARCS model.

Having established a basis and rationale for Web-based training, the author now uses Chapters 3 to 6 in order to provide numerous examples of sites and organizations that are

involved in using this training technique. Chapter 3, for example looks at 'WBT in Practice'. Essentially, this chapter describes the basic elements of typical WBT programmes and then gives various illustrations of some of the online courses that are currently available. These fall into three basic categories: those that employ basic text and graphics; interactive courses; and examples of interactive multimedia. The URLs for the systems described in this, and subsequent, chapters are provided so that readers can explore each of the systems for themselves. Another important aspect of WBT and IBT is the availability of integrated curriculum management systems. Examples of these are described in Chapter 4. Some of the systems discussed in this chapter include: LearningSpace (based on Lotus Notes), TopClass, CBTCampus, LOIS and Librarian. Nearly all of the systems that are described originate from the USA – where WBT and IBT are probably more well-established and their use is more widespread than it is in other countries. Within Chapter 5, which is by far the largest, the author describes the basic character and facilities available from over twenty 'online curriculum delivery sites'. Amongst those included are MOLI (Microsoft Online Learning Institute), BT Campus World and various 'online university' systems, such as IMG University Online, CyberState University, ZDNet University and Street Technologies' Learning University. Most of the sites that are described deal with IT-related skills and many of the courses are designed to facilitate Microsoft or Novell certification. However, some other types of course are also available – for example, language learning and business skills (such as Business Writing, Human Resource Management and Hotel and Food Services Management). The cost per course varies considerably – from free up to 3,500 US dollars or more. Some of the courses cater for as many as 40,000 online students per year. In contrast to the previous three chapters, which concentrate primarily on organizations that are based in the USA, Chapter 6 ('WBT in Use') looks at some examples of the ways in which UK organizations (in both the private and public sectors) are using WBT. Containing just five brief case studies, this is one of the shortest chapters in the book – and maybe reflects the relative level of interest in WBT in the UK?

Like the first two chapters in the book, the last two deal with principles and concepts rather

than WBT sites. Chapter 7 ('Evaluating and Justifying WBT for Your Organisation') is a useful one in that it outlines the steps involved in running projects to assess the need for and feasibility of introducing Web-based training within an organization. Interestingly, this chapter starts off with a discussion of why people like classroom-based training and instructor-led courses. Indeed, despite the growing popularity of WBT, the author suggests that classroom tuition is likely to grow in importance 'by changing and adapting to the new needs of learners'. In the final chapter (entitled 'Training and Learning: The Way Ahead') the author outlines some of the future possibilities for WBT. Following a discussion of its growth potential, the chapter next discusses some of the current barriers to creating widespread online learning (such as standards, metaphors and pricing models) and how these are likely to be overcome by future developments in technology and new business strategies. It then discusses some of the important WBT issues that need to be faced in deploying distributed learning solutions over the Internet. The final part of the chapter describes the 'top ten' trends in training within the USA (these include the use of performance support and the development of learning organizations). The book ends on a very ambitious note: 'The opportunity is for corporate, government and educational organizations to provide quality interactive learning to anyone, anywhere and at any time, which results in a better educated and more productive organisation and society.'

In conclusion, I think this book is well worth 'a read'. It brings together a useful collection of facts, figures, techniques, anecdotes and Web addresses that reflect current practice and ongoing activity in this area. In keeping with its 'Web-minded philosophy', there are only one or two references to conventional paper-based sources – all the other citations are to material that is available through the Internet.

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Bonnie A. Nardi and Vicki O'Day, *Information Technologies: Using Technology with Heart*, Cambridge, MA: MIT Press, Cambridge, MA, 1999. ISBN: 0-262-14066-7. Hardback, xiv+232 pages, £19.50.

I enjoyed reading this book which is a complement to the authors in itself. It is written so that it will appeal to a variety of audiences

and has a message that is of direct relevance to all those using learning technology. If there was a particular audience most likely to benefit from reading this book it would be managers. The authors might consider that judgement unfair as a central thesis of the book is that all participants in an 'information ecology' should be actively engaged in the choices that can shape the local environment. Their aim is to engender a public conversation that leads to an active and critical stance towards technology rather than an attitude of either uncritical acceptance or blanket condemnation. It is in this sense a very American call for an active citizenry, for local collective self-help in the tradition of barn raising. It is a political text informed by a set of self-imposed constraints on the range of an individual's potential impact. National politics and even local politics are not the aim of the authors, rather they are interested in the politics of local decisions made in 'your children's classrooms, at your workplace, in your doctors' office, or at your public library' (p. 55).

The book uses the authors' considerable experience in Silicon Valley, researching for Apple, Hewlett-Packard and Xerox, to develop a critical evaluation of new technologies. Using ethnographic studies, which include studies in schools, libraries, offices and a hospital, the book draws on insights derived from empirical work to discuss some broad theoretical issues.

Chapter 3 deals with metaphors that are pervasive in educational circles, the ideas of the computer as a tool, as a text and as a system. This concern with metaphors is directly related to their concern with action: 'Metaphors matter because they suggest particular avenues for action and intervention' (p. 43).

As resources for action, metaphors have a central place in the book and I found the discussion useful if a little underdeveloped. For example, this book may surprise those of us who have associated Bonnie Nardi with her advocacy of Activity Theory which makes considerable use of the idea of technology as a tool. There was no discussion of this usage and the authors conclude that the tool metaphor, though useful in a narrow way, distracts from the central question of the context of use.

The metaphor the authors advocate is that of an 'information ecology' (Chapter 4). Just as they identified the previously discussed metaphors with their weaknesses as resources for action so they promote the ecology metaphor as fostering

conversations for action. In particular they claim the metaphor emphasizes system, diversity, co-evolution, keystone species and a sense of locality. Each term is explained in turn but the one that struck me as the most original and productive was that of a keystone species. The idea of the keystone species is used to spotlight people whose presence is essential to support the effective use of a technology. The idea of a keystone species helps to identify the often unseen work of people without whom technical systems do not work. In Chapter 7 an extended example is given of the role of the librarian as a keystone species. This chapter alone would warrant reading the book, as it stands as a warning against those who see the Web as a vast information resource into which we can simply plug learners. The remainder of the first part of the book deals briefly with the application of human values to shaping information ecologies and providing practical guidance on how to 'evolve' an information ecology. The practical guidance in Chapter 6 is quite limited, focusing on human non-technical factors such as core values, 'paying attention' and asking strategic questions.

The second part of the book provides brief and informative vignettes. Each chapter provides a short review of detailed empirical work, each one based on an ethnography in a different setting. Some of the studies are directly relevant to educational technologists; all contain ideas and information that will be of value. The study of librarian's work in Chapter 7 emphasizes the situational accomplishment of understanding a client's information needs. The authors' cast some much needed light on the skilful procedures that can be so easily glossed over as an information search. Their conclusion that the 'presence of human guides and experts in the library is crucial' (p. 104) is a valuable lesson for all those interested in using the Web as an educational resource.

Chapter 8 reports directly on an educational application of technology with sixth-grade students. The focus on sustainability and educational quality make this chapter useful beyond the particular focus of the research. Chapter 9 focuses on the largely invisible work of 'gardeners'. These are people often informally recognized rather than holding a formal position in the organization: 'They are the people who like to tinker with computers. They learn the software a little better than everyone else around the office, they're often good at configuring

hardware, and they troubleshoot and solve problems when others are stumped' (p. 140).

There was instant recognition in this snapshot of a variety of individuals I have known, not technical experts but often the translators who can bridge an often uncomfortable gap between technical expertise and practical use.

In Chapter 10 a digital photography class is reported which builds upon the gardener insight within an educational setting. The authors conclude this chapter with a valuable insight, that in an educational environment it is the teachers who are the natural bridge between students and the technology. In this sense educators need to be gardeners, a slightly different image from the common metaphors of moderator or facilitator. The final study in Chapter 11 is one of a failure, a 'dysfunctional' ecology in a teaching hospital. By highlighting the need to understand how technical change can disrupt unseen but important working practices this chapter should serve as a timely warning. The questions of privacy and surveillance identified in the chapter are issues that are relevant to how students and tutors work within an educational environment.

This book is a valuable addition to the public conversation within the field of learning technology. It has a broad sweep and a light touch. Without skilful authors it could have provided a candy-floss gloss on difficult issues. Instead the use of well-chosen examples and the focus on ubiquitous metaphors provides sufficient bite to make the read well worth while.

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Lorraine Marshall and Frances Rowland, *A Guide to Learning Independently*, Melbourne: Addison-Wesley/Longman, Third Edition, 1998, ISBN: 0-582-81170-8. Softback, vii293 pages, \$19.95 Australian dollars.

As its title states, this book is very much a guide for enabling individuals to develop their own strategies for learning and study. Like previous editions, this one stems from the basic premise that learning is an individual responsibility, and that given help, ideas and resources, students can take charge of their own learning. However, this new edition has been updated to account for certain developments in higher education which will continue to affect learners: technology, research into student learning, reflection and critical thinking, diversity and mobility of student populations.

Students should find plenty of information, suggestions and techniques for improving their repertoire of learning skills presented in a style that is interesting, pragmatic and accessible. The friendly style is achieved primarily by addressing the reader as 'you', a technique that allows the authors to establish a dialogue with the individual. This focus on 'you' is further reinforced throughout by interspersing the text with frequent prompts to encourage questioning and reflective thinking about 'your' own purpose for learning and how 'you' learn best.

The book is divided into three sections. Chapters 1-5 provide the grounding for independent learning by guiding students to understand themselves better through questioning their individual lifestyle, values, ambitions and learning approaches. The next five chapters build on this approach to self-knowledge while presenting ideas for finding, absorbing and evaluating information. The remaining six chapters deal with the communication, use, critique and presentation of what has been learned.

Chapters 1 and 2 establish the principle of reflective enquiry by asking for a self-examination of personal traits, cultural and social background, surroundings and study habits to help students understand how best to control and plan their own study. This is followed in Chapter 3 by an introduction into the culture of tertiary education, covering topics we often forget to tell new students: what universities and colleges do, how they are organized and how they are changing, how learning relates to the discipline, what is critical thinking, what choices students have and how they can make informed decisions, what difficulties they are likely to confront and how can they best deal with them. This is a very good discussion, dealing with such topical issues as combining study with work and dealing with loneliness as a distance learner. The next chapter then encourages students to ask their own questions in the context of their learning – guided by the fundamental When? Where? How? Who? Why? and What? Chapter 5 closes this section by exploring the relationship between learning and remembering.

'Choosing and analysing a topic' is a chapter (6) that tackles topics that students often misunderstand: the purposes and expectations of assignments, meanings of directive words such as criticize or evaluate, and developing and

analysing a set question. The authors suggest a procedure which should help students to understand and answer set assignments, formatted as a series of self-questions (e.g. 'What is the question about? What do I already know about the question?'), each of which is followed by key tasks.

Chapter 7 is a straightforward introduction to researching a topic, but I particularly liked the emphasis on selecting and evaluating reference material, again reinforcing the message that students need to develop skills of critical enquiry. A practical summary of information sources is presented next, including electronic access to libraries, the Internet and mass media, but there is a cautionary word about the *appropriate* use of sources. The next chapter (*on reading*) contains suggestions likely to appear in other books of this nature. However, there are three gems which appear as tables and which I think would be incredibly useful to students: the anatomy of a book (Table 9.1), asking questions as you read (Table 9.2) and writing a review (Table 9.4). Chapters 10 and 11 are fairly standard treatments of listening in lectures and participating in discussion groups, although there is new emphasis on interchanges between different worldviews.

The next four chapters deal with writing, beginning with suggestions for writing as a regular, often reflective activity. The authors' advice to developing writing skills uses elements of both the 'process' and the 'genre' approaches to writing. Students are also encouraged to share their writing with peers, a rare occurrence in my experience. The next two chapters offer structured approaches to writing essays and scientific reports, with particular emphasis on the use of questions as a guide for writing. I especially liked the detailed advice on creating logical, accurate and unambiguous scientific prose without stifling it with unnecessary passive constructions. Like the rest of the book the quotations that punctuated these chapters are entertaining and relevant, such as this one on preparation and planning from Abraham Lincoln, 'If I had eight hours to chop down a tree, I'd spend six sharpening the axe'. Chapter 15 completes this section on writing by explaining the use of conventions, a practical guide to using quotations and referencing, with numerous different examples, including a note about those used in the book itself.

The last chapter discusses learning from evaluation, assessment and feedback, drawing

students' attention to the importance of understanding criteria and standards. This chapter closes the loop begun in the first chapters by asking students to question what they have learned, and what, how and why they want to learn in the future. The book ends with a short appendix entitled 'Discrimination – Sexist Language and Attitudes', a curious way of covering this information and which comes across almost as an apology or an afterthought.

There are number of 'study skills' books on the market, and this one certainly sits alongside the best of them. Unlike some others, it does not contain many integrated interactive activities but rather provides numerous examples of approaches to processes and questions to ask yourself as guides to thinking. It gives guides to improve learning processes but relies on the reader to apply them. The layout is clean and uncluttered. Readers are engaged, not only by the use of the familiar pronoun and extensive use of questions, but also by inclusion of summary boxes, end-of-chapter suggestions for using information, insertion of many relevant quotations from a wide range of historical and contemporary sources, and a diverse collection of further readings. I would highly recommend it to students and teachers.

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Otto Peters, *Learning and Teaching in Distance Education: Analyses and Perspectives from an International Perspective*, London : Kogan Page, 1998, ISBN: 0-7494-2855-4. Hardback, viii248 pages, £40.00.

The increasing emphasis on lifelong learning, the need for universities to admit ever larger numbers of students and advances in communications technology have contributed to a surge in interest by academics and institutions in the provision of distance learning programmes. While some institutions (notably in the UK, the Open University) have a long tradition of providing distance learning programmes, many more are now experimenting with the paradigm – particularly via the Internet. However, there is a danger that traditional university-based courses and resources are simply transferred to a distance learning mode of delivery without real consideration of the practical and pedagogical issues.

This book provides a comprehensive overview of the historical, contemporary and emerging

aspects of distance education. The author sets out to describe the methods, media and technical aspects of distance education by reference to a number of international case studies. However, he goes beyond mere description through discussion of the sociological, cultural, psychological and pedagogical conditions in which distance learning takes place. Peters explores the models adopted by a number of international institutions, examining current practice and the way it can influence future developments in distance learning. He goes on to consider the possible impact of digital technology on practice and theory.

The book is divided into eight chapters, each with a useful overview and conclusion. It includes an interesting appendix that charts, by reference to four examples, the way distance learning has made use of different technologies as they developed from hand-written teaching letters to communication via the Internet. There is also an extensive list of references and the index is usefully divided into two sections that are organized by subject and by name, respectively.

The first chapter identifies five factors that differentiate distance learning from other forms of university teaching. Peters takes the view that it is a mistake to take as the starting point the spatial separation between teacher and student, rather that there are fundamental teaching problems inherent to distance education through a number of special factors. These factors include the use of conventional forms of learning and teaching, the use of technical media, the particular type of student engaged in distance learning and operating modes within universities.

Chapters 2 and 3 identify and examine the teaching and learning models used in distance education. The correspondence model is described as an attempt to reduce the distance between teacher and student by means of written communication. In the conversation model the concept is one of a simulated dialogue between teacher and student. The teacher model was developed to compensate for the physical absence of the teacher by transferring the 'teacher's voice' to the teaching text, and the tutor model, where the text simulates a tutorial. Finally, Peters describes the 'technological extension' model whereby students attend university-based classes with the help of technical and communication media. He then

goes on to introduce the concept of Transactional Distance, credited to Michael Moore of Penn State University, which is then developed in the following chapter. The third chapter discusses the concepts of dialogue, structure and autonomy characteristic of Transactional Distance in relation to the pedagogic, philosophical and sociological aspects of distance education.

Chapter 4 moves from theory to practice by examining how dialogues, structure and autonomy are applied through a number of international examples. Peters concludes that more opportunities for well-developed student-centred distance education programmes are likely to arise from achieving a balance between structure and dialogue, thereby creating opportunities for autonomous learning.

In Chapter 5 Peters examines the concepts of open, lifelong, post-industrial and post-modern learning. He argues that, although these concepts stem from different theoretical and practical fields, they could complement and support each other, permeate one another and have an influential effect on the development of distance education.

Chapter 6 is, for me, the most informative and interesting of the book. Here the theory and practice come together in the most coherent manner. It begins with a description of the different forms that digital learning currently takes – from hypertext to programmed learning to video conferencing. Peters then goes on to examine the ways in which current and emerging technologies can provide new opportunities for teaching and learning and how it is changing the pedagogical concept of distance education. He demonstrates the opportunities that digital technology offers to change the nature of the learning environment so that students are no longer absorbing, processing and reproducing information offered to them. Instead they become researchers and designers, searching for knowledge, evaluating and constructing it – autonomous or self-directed learners. Peters analyses the way in which digital technology can be utilized to provide a learning environment that is student-centred, provides opportunities for self-directed and collaborative learning and includes appropriate support and scaffolding.

The final two chapters examine the teaching and learning models of specific institutions and the characteristics of each. The institutions covered include: the University of South Africa; the

Open University in the UK; the Fern Universität in Germany; the Central Radio and Television University in China; the University of the Air in Japan; the Empire State College in the USA; the American Universities Teleconference Network; and finally, an example of institutional collaboration in the Canadian project 'Contact North'.

Peters concludes that distance education has the potential to meet the changing demands of students and institutions to extend and diversify the student body and to change the traditional views of teaching and learning. The book provides a thorough analysis and examination of the theoretical and practical aspects of distance

education. I feel that the chapter on developments in digital technology and its potential for distance learning could have been explored further and the inclusion of some examples of good practice would have been useful.

Overall, I think this book would be a useful addition to the library of any academic with an interest in teaching and learning issues in general, and in particular to those who are involved in the development of distance learning courses.

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