An experience in e-learning: Using an electronic textbook

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While students are becoming accustomed to using the Internet as an information source that supplements or replaces the normal institutional and classroom handouts, the use of the Internet or CD instead of a printed textbook is a new experience not only for students but also academics and their institutions. This article describes the experience of constructing, publishing, prescribing and using an online textbook for a postgraduate course. The experience provides valuable insights that suggest the need for changes to e-communications facilities in homes, offices and learning institutions, to students' expectations, and the need to improve purchasing interfaces and text displays before electronic textbooks can be readily accepted as an alternative learning medium.

Keywords: Electronic textbook, e-book, copyright, student perceptions, reading ease, institutional readiness, commercial readiness

Introduction

While the spread and availability of electronic learning material has been considerable, the uptake of this by institutions has been slow. This paper deals with the use of an electronic textbook (e-book) in a postgraduate course at a Sydney based university. The course had been taught face to face for a number of years using library subscription journal articles for prescribed readings. In preparation for offshore delivery of the course an e-book on the Internet was planned and encouraged by a major book publisher whose e-books were already used in the USA, Canada, Mexico and a number of other countries. This paper describes how students purchase and access the e-book, it reports feedback of the perceptions and experiences of students, and raises issues that need to be considered in relation to learning with e-books.

Literature review

E-books are nothing new. While the concept has been around for 30 years few e-books have been produced in the educational sphere. McNaught et al. (2003) suggest poor information on the availability of electronic materials as one of the reasons for this poor uptake. Ardito (2000) summarises some principal advantages and disadvantages of e-books including printing only on demand, storing a copy on a single server that is accessed by all users, the potential lessening of copyright infringements, and the perceived difficulty of reading electronic print.

The readability of e-books has been discussed in a number of other papers (Armatas, 2003; Hartley, 2002; Thurstun, 2000) where the authors cover issues such as students' preference for using print material because of its portability, because they could annotate it and because Internet access was not easy and convenient. One survey points to research showing there is a 50:50 split between users who prefer to read from paper and those who will read on screen.

Our e-book experience

What the publisher provided

The need for the e-book arose due to the uniqueness of our course, with no single existing hard copy textbook covering all its topics. With the co-operation of the publisher a custom publication was constructed comprising relevant chapters from four separate textbooks from that publisher, 560 pages in

all. As the publisher required a minimum of 100 orders for a print run and the course enrolment was usually about 25, the publisher proposed an electronic version. This was an attractive option because in future, when the course is fully online and many students are offshore, access to the book electronically will overcome problems of shipping and assure its timely receipt, and the publisher will handle the purchase procedures with students directly.

The publisher has electronic files with the contents of recent books, and can place these files on a secure password protected site on the Internet. In our case the files for the e-book are stored on the publisher's site and students are invited to use electronic payment to buy access to the e-book. The files are in a proprietary system, ebrary©, that was devised to read PDF (portable document format) files and is funded and used by three large international book publishers. The text is presented in the same format as in the corresponding printed editions.

Because the facility had not been tried in Australia, the publishers burned copies of the e-book's files onto CDs as a fallback strategy in the event that students found Internet access to the e-book difficult.

How students access the e-book

A student who purchases viewing rights may read a set total number of pages and print a fixed total number of pages, and may purchase an extension if needed. The student must install on any computer being used the free software (eBook Reader™) which monitors the numbers of pages displayed and printed, and the cumulative count will be shown on the screen during access. The student's machine must have a live Internet connection to the publisher's site while the e-book is being displayed. Page-view credits have no expiration date. Copies of the online screens cannot be made.

At the time of purchasing the viewing rights, a student is presented with two access choices:

- *Downloading*. The e-book files are downloaded to the hard drive of the student's computer where they reside permanently. At the start of each reading session the student uses a password to login to the e-book on the publisher's site and stays online until the end of the session. There is no need to download the e-book pages again, but the connection with the publisher's site must exist so that eBook Reader™ can tally the pages that the student reads and prints.

  A major advantage of the downloading option is that there is only one download of the e-book files. The downside is that access is from one machine only. The *Downloading* option was not workable at the University because the regular cleanup process deletes downloaded student files. Files could not be successfully transferred to USB data sticks. Students who use computers at their workplace face similar problems with this option, but downloading is possible at private homes with Internet access.

- *Online reading*. Students read the e-book pages from files on the publisher's server. At the start of each reading session the student uses a password to login to the e-book on the publisher's site. The advantage of the online reading option is that access can be from any machine – university, home, work or roaming. On the other hand, each time a page is accessed it must be downloaded to temporary storage on the reader's current computer and this can be a time consuming and costly exercise for the student. The option is useable at private homes with Internet access, but broadband connection would be needed for speedy screen updates.

Adoption of e-book by students

During the first class of the semester the two options for accessing the e-book were demonstrated. Some students were outspokenly negative about the prospect of easy use of the e-book and some did not return the following week. At the second class only one student had purchased online access and there was a general reluctance to participate. The course convenors decided to use the publisher's fallback strategy, and copies of the e-book were provided free of charge on CDs, as the students could not be left to flounder and issuing the CDs seemed appropriate given the fees they had paid. Students had not been aware of this option before the CDs were distributed. The CD contained a single PDF file, and came without the added facilities of highlighting and note taking that were available using eBook Reader.

The attrition following the first lecture is explained by factors other than the e-book. Commonly our postgraduate students visit a number of courses during the first week of a semester in order to find out more about the courses before finally enrolling. Although the number deciding not to continue was more than normally experienced, *albeit* only marginally higher than in previous semesters, informal feedback from those who chose to withdraw indicated that while some did withdraw as a result of perceived difficulties with the e-book, most did so for other reasons.

Data collection and analysis

The authors prepared a questionnaire aimed at exploring students' Internet familiarity, site navigation skills, readability of the screens, tools used when reading the screens, and attitudes to the e-book at the start and end of the course. The questionnaire was administered during the penultimate class of semester. Some of the survey results are shown in Table 1.

Table 1. Frequency of responses to survey questions
Number of students =18

Question	Frequency of students' responses				
For me, gaining access to a computer for my study was . .	difficult		neutral		easy
	0	0	3	4	11
Before I began this course I found web surfing and e-mailing was	difficult		neutral		easy
	0	0	1	4	13
Finding the material I wanted on the web site was . . .	difficult		neutral		easy
	0	1	4	3	10
Finding the material I wanted on the e-book was	difficult		neutral		easy
	2	2	7	1	4
Reading the electronic screen that displayed the e-book was	difficult		neutral		easy
	5	4	3	2	2
Displaying new screens on the web site and turning the pages of the e-book was . . .	slow		neutral		fast
	3	5	6	2	0
At the beginning of this course, how did you expect the e-book would suit your study style?	with difficulty		neutral		with ease
	7	1	4	1	5
How much of the e-book did you print to paper?	0%	25%	50%	75%	100%
	8	3	1	1	5
In future, when deciding whether to enrol in a course that has instructions and content available on the web, I will be .	reluctant		neutral		keen
	0	1	8	2	7
In future, when deciding whether to enrol in a course that uses an e-book, I will be . . .	reluctant		neutral		keen
	6	2	4	3	3

Inspection of Table 1 shows that, overall, students felt competent when moving around the web but expected to be less at ease moving around the e-book. Because in previous classes for this course students have read many journal articles on electronic screens via our Library, we attribute this group's reluctance to their lack of previous exposure to large blocks of electronic reading and their apprehension in meeting the challenge of coping in an online learning environment.

Their indifferent ratings of page turning, searching and screen reading tools on screen indicate shortcomings in the interface program used.

At the beginning of the course students' perceptions about the e-book were balanced between difficult and easy. By the end of the course these perceptions had shifted, but only slightly, towards a reluctance to use another e-book. Nevertheless it is encouraging to note that one third of the students expressed a keenness to be exposed to an e-book again while about 20% were neutral about this. Of course, interpretation of the findings must be tempered by the limitation of the small sample size.

A mind set change towards e-book learning

This paper summarises the experience of using an electronic textbook in a postgraduate course and examines the issues of personal and technical readiness that must be in place to make this medium an

alternative learning tool. Impediments to e-book learning include the lack of adequate system and software support, unfriendly interfaces, text displays that suit the paper medium and, most importantly, the existing student expectations of this new learning tool. The security devices used by publishers to control account sharing by clients need to be more user friendly. Perhaps publishers and libraries will work together in a way that makes access to e-books appear seamless to students. Our findings indicate the policy implications for academics and tertiary institutions as they develop strategies in these areas. As the concept of virtual universities will very likely underpin the education of the future, universities should recognise the pitfalls of hastily immersing in online learning ventures before having in place more sophisticated computing systems and interfaces than are presently available.

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Please cite as: Kropman, M., Schoch, H.P. & Teoh, H.Y. (2004). An experience in e-learning: Using an electronic textbook. In R. Atkinson, C. McBeath, D. Jonas-Dwyer & R. Phillips (Eds), *Beyond the comfort zone: Proceedings of the 21st ASCILITE Conference* (pp. 512-515). Perth, 5-8 December. http://www.ascilite.org.au/conferences/perth04/procs/kropman.html