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Is free really cost-effective? A case study of open access e-textbook usage in several undergraduate business courses.

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ABSTRACT

This paper reviews the current trends and costs of e-textbooks and reports on the usage and satisfaction of students using freely available open access e-textbooks in six sections of different business courses. It also examines how students utilize their textbooks, and if the problems associated with using an e-textbook outweigh the main benefit of a free e-textbook.

Keywords

e-textbook, open access, free courseware, students' usage

1 INTRODUCTION

One of the main complaints of college students is the high cost of textbooks. According to a college blog, Finding College Cards, the second of the top ten complaints of college students (between 1. Parking, and 3. Having to take electives) is the high cost of textbooks, especially if the professor rarely refers to them (Top 10, 2009). While the views of college students certainly have a distinct perspective, there is considerable agreement that the costs of college texts are exorbitant (Allen, 2010; Real costs, 2010; Rumsey, 2005).

2 TEXTBOOK COSTS CONSIDERED

Faculty are regularly bombarded with sales pitches for text books. Some publishers offer composing editions with select chapters, contributing as an author, selecting online versions and/or hard copies, accessing special study tools and more. The quality of the text is vital but cost to the student is also becoming a consideration of many faculty. More than a few faculty have heard, "I haven't got the text yet." or, "It's on order." or even, "I didn't have the money to get it."

In as survey by the State Council of Higher Education for Virginia, over 40% of the students reported that they sometimes go without the expensive text (Kinzie, 2006). According to the Advisory Committee on Student Financial Assistance (ACSFA), five years ago, the average student spent between $700 and $1,000 per year on textbooks (Koch, 2006). The Government Accounting Office (GAO) reported in 2005 that textbook prices in the last two decades had increased more than twice the rate of inflation (GAO, 2005).

Even the savings possibilities of e-textbooks were shown to be inadequate. New e-textbooks surveyed by the Student Public Interest Research Group (PIRG) cost, on average, the same as a new hard copy and twice the cost of a used hard copy (Allen, 2008).

Considering this critical issue, there have been attempts in Congress to pass the Open College Textbook Act (2009 and 2010) http://www.govtrack.us/congress/bill.xpd?bill=h111-4575 to authorize grants for creating and adopting free e-textbooks. Some universities, such as Wisconsin Oshkosh with a grant from the U.S. Department of Education's Fund for the Improvement of Postsecondary Education (FIPSE) and California State with a pilot program, are using e-textbooks to reduce costs for students and to support sustainable practices (Hanley, 2010; Williams, 2009).

Addressing these cost and green issues are commercial open-access college textbooks companies. Flatworldknowledge (FWK), which started in 2007, is the leader in this field. This business model has expanded rapidly as participating colleges doubled from 400 in 2009 to 800 in 2010 (Dilworth, 2010; Weir, 2009).

A lesser known site, Bookboon.com from Danish publishing company Ventus, was launched in 2009 with free e-textbooks that have advertising every few pages. Written by professors and lecturers, the subjects are business and engineering and intended as supplements to course material. California State, Dartmouth, Northeastern, and Utah State are among the U.S. universities using Bookboon (Esmerk, 2010). The advertising in these books are limited to student recruiting in similar fields of study and linked to their sources (K-State, 2009).

Both these sites offer printing the text or chapters for a fee. Some bookstores, such as Varney's Book Store in Manhattan, have on-demand printing facilities for e-textbook and e-books (K-State, 2009).

3 RECENT STUDIES

According to the Book Industry Study Group (BISG) in a January 2011 study, 75% of students said they preferred a printed text. The look, feel, permanence and re-sale

possibility were top reasons given for print book partiality (College students, 2011).

Consumer purchases of e-books have also risen according to BISG's (2011) consumer survey. The BISG conducts semi-annual surveys, Student Attitudes Toward Content in Higher Education, from a national sample of students.

A more recent, June 2011, BISG study reported that usage of e-textbooks had increased by 70% since a fall 2010 survey, particularly among freshmen and sophomores. However, almost one-fourth of the students who used an online textbook (still only a 20% representation) were not satisfied with the experience. But the hunt for less expensive texts continued with more international editions purchased and double (20% to 40%) the amount of illegal photocopying (Photocopying material, 2011).

Some other studies (Gregory, 2008; Hage, 2006; Kissinger, 2011; Nelson, 2008; Porter, 2010) have explored e-textbooks and undergraduates concerning attitudes, e-book readers and embedded activity learning and self-efficacy.

4   STUDY

The opportunity to use a free open access online textbook that was also available in print at a reasonable cost was the inspiration for a case study of its effectiveness in several business courses at a small, Catholic university in the Northeast. Two classes in Business Communications and two classes in Management and Organizational Behavior in Fall '10 and two Business Communications classes in Spring '11 allowed students to access a free online textbook through Flatworldknowledge or to purchase a very low cost version in print. At the time of this study, for example, the Principles of Management book was available in print for $49.95 and a print-it-yourself version for $24.95 (see Figure 1). In August 2011, the black and white print version could still be bought for $49.95 but the print-it-yourself version was $34.95. The newer edition is still available online for free.

Figure 1. Principles of Management by Carpenter, M., Bauer,T.& Erdogan, B. Source: www.flatworldknowledge.com

To enable students to participate in the study and to simplify their access, a course web page was created at the FWK instructor site, and the e-textbook link was embedded into the class syllabus, which was also placed in Mywebcourses, a learning management system (LMS). However, many students found it easier to go into FWK, make an account and select the book from the catalog rather than access the instructor site (which was only created for book linking). PowerPoints were uploaded into the Blackboard LMS web course for the students in the course to access. FWK claims their instructors' resources can be integrated, for free, with a LMS but this was not used.

A link to an online questionnaire, created in Surveymonkey, was sent to the class rosters. Students were reminded in class to check their school e-mails and encouraged to participate in the study. Additional information was obtained through online discussion questions in the Spring semester.

5   RESULTS

A total of 98 students in six classes, four sections of Business Communications and two of Management & Organizational Behavior, responded to the survey. Of these, 53.4% used the freely available e-textbook, 29.7% purchased the hard copy textbook, 12.8% utilized both versions of the text, and 3.9% claimed neither to have used the online text nor purchased a book (see Figure 2).
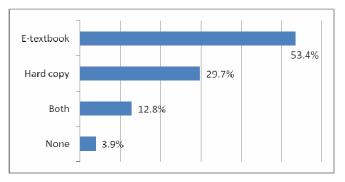

Figure 2. Student textbook usage N=98

Of those who used the free e-textbook, 78.2% used laptops, 8.9% used a library computer, .03% used a desktop. Some students (.06%) used multiple methods of access including three users of i-pads and one of an i-phone. None of the students used an e-reader. It should be noted that a number of the students owned laptops from a mandatory laptop enrollment program that ended two years before this study.

The majority of respondents (60%) were male, 40% were female. Sophomores predominated at 35%, followed closely by freshmen at 33%, juniors at 25%, and seniors were only 5% of the respondents.

Some results of the case study were hardly surprising; the biggest feature the students liked about the e-textbook was that it was free. Of the e-text user survey respondents, 92.4% liked the fact that the textbook was free to low cost.

Over 65% also liked the full-text searching capability of the e-textbook and 69.6% liked the portability. On the other hand, there were some surprising findings, 81.8% of the students enjoyed accessing the text online and 64.1% liked reading the text online. These findings contradict previous studies (Allen, 2008; Shepperd, Grace & Koch, 2008) that have found reading e-textbooks and e-books was annoying to many users due to eyestrain or a preference for print graphics. Perhaps the predictions that these complaints would dissipate with new generations, such as these Millennial students who were brought up reading text on computers, is coming to fruition.

Also surprising was the lack of appreciation for the much ballyhooed hyperlinking capability of e-textbooks. Many publishers and e-textbook supporters have touted hyperlinking as one of the big advantages over print textbooks. Only 35.3% of the students liked this feature. However, it should be noted that 58.4% of the students reported never utilizing the hyperlinking feature. It is unclear if this is because they didn't like it, (although over 6% reported it was a problem) found it unnecessary, or because they didn't realize it was available. Few took advantage of the printing capabilities of the e-textbook as 50% reported they did not utilize the feature and over 21.8% noted it was a problem. It is unknown if the problem was printing availability, desirability, or costs.

While most of the students liked the fact that the e-textbook was easy to read, cost was not the most important factor when rating a textbook. Being "easy to read" was the most important feature for 55.1% of the students. Cost came next at 48.9% and accessibility was rated important by 44.8% of the students.

Other important findings were on the amount of time students spent reading their textbook per week and how often they completed assigned readings before class. As many professors suspect, the students don't spend a great deal of time reading the textbook, and usually don't bother with assigned readings unless there will be a test on them! The majority (70.8%) of students spent less than two hours per week reading the assigned textbook. Three to four hours a week studying was spent by 27% of students, and only 2% spent five or more hours reading the textbook. Results for assigned readings were also rather dismal as 18.7% of the students reported doing less than one fourth of the readings, 18.7% less than half the assigned reading, 38.5% less than three quarters of the readings, and only 23.9% more than three quarters to all of the assigned readings.

Despite their reading habits, most of the students were doing well academically. None of the respondents had a GPA under 2.0, only 4.1% were between 2.0 and 2.5, 23.2% were between 2.6 and 3.0, almost half (49.3%) had a GPA between 3.1 and 3.5, while 23.2% had a GPA over 3.5. According to the students' responses, over 72% of them have a GPA over 3.0.

Students also reported on their study methods. Many students (38.7%) like to highlight material; also popular is writing separate notes as 32.6% reported doing this. Only a few (15.3%) of the students write margin notes. Most students (37.7%) skim and quickly scan through the material, while 29.5% read all the material word for word. Despite their poor study habits, the students had a high opinion of their text reading skills with 11.2% rating themselves as exceptional, 26.5% as above average, 46.9% as average, and 9.1% as below average. None of the students believed their text reading skills were poor.

One of the biggest problems with utilizing the e-textbook was the distraction factor. Although students of the Millennial generation are touted as having an amazing ability to multi-task (Alch, 2000), it turns out this is a problem when they are trying to study. There was no specific question on the survey related to this aptitude, but a follow up online discussion assignment for two Business Communications classes yielded illuminating responses of e-textbook users including the inability to concentrate on the task of studying due to Internet diversions. An example of a typical comment was "I know that if I got a Facebook notification I would have to check my Facebook right away and would get distracted from reading the material." Another student could not resist the temptation to get on the Internet, "I sometimes found myself distracted using the computer though being that it was so easy to surf the web while reading the text."

The other downside to the e-textbook was highlighting capabilities. Many students preferred the print textbook because of the ease of highlighting. The e-textbook had highlighting capabilities, but only 40.2% used it as others either didn't like the feature or never utilized it. One student commented, "When using an online textbook, I did feel like it was a little annoying solely because I couldn't just write and highlight in the book. This could be a form of laziness because I could easily just write things in my notebook, but that's just what I've been used to for years." Although print textbook users like to highlight, over half of the e-textbook users never utilized the feature. It is unclear if this was because they found it cumbersome, unnecessary, or if they simply did not know the feature existed.

Another unexpected problem was ease of access. Because the textbook was online rather than downloadable, students were at the mercy of their Internet connection. One student liked the e-textbook but remarked, "For our book, I liked having it online most of the time since I would not have to carry or pay for it. However, because it was online, there were nights where it was difficult to read because of how slow the internet can be on campus." Internet access speed can be a problem especially in the dormitories during times of peak use. This is a factor faculty should take into consideration before relying on an online textbook exclusively.

Students did like the keyword searching capability provided by the e-textbook. Several commented on the ease with which they were able to find the desired information using this feature. One student comment was typical, "I also liked the search feature of the e-textbook because it easily transports you to what you're looking for. Although it was difficult not being able to just simply read and highlight in the book, I believe the other benefits of the e-textbook far outweigh that." The accessibility of the e-textbook was another plus. One student preferred the print textbook but stated, "I do like the online copy in case I was at the library and forgot my book it would be helpful to have." Another said, "I like to have a copy of the textbook online because I can look at it whenever I would like. The online version made it accessible whenever I need it."

6   CONCLUSIONS

It may be that the real advantage of using an open access e-textbook is the flexibility it provides. Students who prefer a traditional print textbook can purchase one from the publisher for a very affordable price. Those students who need to save money or enjoy using an e-textbook can access one for free. Some students will choose to use both versions. Students often found the e-textbook useful when studying in the university library or just for looking up a quick factoid. They preferred the print version so they could highlight important points when studying for a test. Like most areas of 21st century life, it turns out that an abundance of choices is what the consumer really appreciates.

It would appear that many students are not quite ready to embrace e-textbooks. An overriding theme of the survey comments was that they preferred a print textbook because it better fit their learning style. Most of the students highlight what they consider to be important information in their print textbook and then use that highlighted information as the basis for their exam study sessions. Although the e-textbook provided the ability to highlight information many students did not use this function. Most of the students are still studying in a similar manner to students of a previous generation. It appears that these Millennials have not adopted digital learning as of yet. It remains to be seen if future students brought up with using computers in the classroom will have more success in using e-textbooks.

Unsurprisingly, cost is an important motivating factor for students. Although many preferred a print textbook, they were willingly to use the e-textbook to save money. In this case, the savings was only $50 but, in many cases, that was enough to decide on the online version. It seems clear that a larger price differential would cause an even greater percentage of the students to choose the e-textbook. If cost is such a highly motivating factor among students who are mostly of middle to upper class background, it is reasonable to speculate that it would be a still greater motivating factor at universities which had a higher percentage of students who suffered from financial hardship.

7   LIMITATIONS & FUTURE RESEARCH

Although the number of students surveyed was significant, the population was limited to only business, management and marketing majors. It is certainly possible that research with other majors, such as liberal arts students, could have completely dissimilar results. The sample was also limited to an exclusive liberal arts centric university in the Northeast United States. Future research at larger universities, state schools, etc. may yield differing perspective of e-textbook preferences and experiences.

While this case study did not find any major differences by gender, this could be an area worthy of further research. Is there any difference among male and female students in their preference for a print or e-textbook? Perhaps some other factor, such as personality type, is the key variable rather than gender. The sample size in the present study was too small to make such a determination. Also of importance is whether there is an improvement in student learning, engagement, study habits, or grades? The answers are likely to come from additional studies as e-texts become more widespread with both students and professors.

It would also be interesting to look at the grades achieved by those using the e-textbook in comparison with those using the print text, as well as those who used both. Is there any difference in the learning experience based on the medium? Does utilizing both the print and online version of a textbook optimize the student's learning? The answers to these and other questions are likely to come from further studies as e-texts become more widely adopted by faculty, and more heavily used by students. E-textbooks' efficacy will undoubtedly be a major area of research in the next decade.

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