Supporting Student Success: E-books as Course Materials

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Abstract

Libraries have traditionally avoided purchasing textbooks due to factors like a limited collection development budget and the frequency of new textbook editions. However, as the price of textbooks continues to rise, some libraries have reconsidered such policies and initiated programs to help students combat the escalating cost of higher education. Louisiana State University is the state flagship with an enrollment of over 30,000 students. Since the fall semester of 2014, LSU Libraries has been providing and promoting access to e-textbooks using the licensed collection. This is done by identifying and purchasing e-books that have been adopted as course materials, then making these available to students through the Libraries' website and the university's learning management system. This article addresses the approach undertaken to align licensed e-books with course use, highlights promotional strategies, and provides an overview of the assessments used to improve the program. These strategies can be applied by other libraries to initiate similar programs.

As the state's flagship university and an Association of Research Libraries member, Louisiana State University (LSU) Libraries has a history of curating print collections, currently housing combined collections of over 3 million volumes. E-collections have been increasingly emphasized in recent years, extending the library beyond the physical walls by providing access to hundreds of thousands of online books, articles, and databases to support research, teaching, and learning. A shift in this collection development process occurred in 2014 with the arrival of Stanley Wilder, Dean of Libraries. He brought with him an e-book model that emphasized three principles: perpetual access and archival rights, absence of digital rights management (DRM) restrictions, and unlimited simultaneous use.

In applying these to LSU Libraries, demand driven acquisition plans and subscription e-book services were discontinued. The Libraries focused new investments on large e-book packages from publishers like Springer, Wiley, and Project MUSE, and on individual e-books. All new titles supported the three principles by providing perpetual access to unlimited user chapter-by-chapter or whole book PDFs. Given these principles, titles would be accessible for an entire class to use at once, and therefore could serve as course materials.

Thus, an affordability initiative was launched by LSU Libraries in the fall of 2014. Using the university's textbook adoption list, librarians identified titles currently available in e-collections and titles that could be purchased on a title-by-title basis. These were made available to students through the Libraries' website and Moodle, LSU's learning management system. Subsequently, an extension of the program, a faculty e-textbook search, was launched to enable faculty to independently explore these titles and

proactively make selections for their courses.

Literature Review

A few articles have described similar e-textbook programs. These are often led through the university's library and provide students with free access to a required textbook using an e-book with or without DRM. Early papers concentrated on e-textbook platforms and student perceptions of using e-textbooks instead of print textbooks. Baek and Monaghan (2013) described a 2010 e-textbook pilot program conducted in California across five state universities. The purpose of the study was to examine user satisfaction with e-textbooks and researchers found that users were fairly evenly divided in their rating of satisfaction. Cuillier and Dewland (2014) discussed a pilot program conducted by the University Libraries at the University of Arizona. The goals of the study were to assess user perceptions of e-books as course texts, determine the level of cost savings attained, and ensure that learning outcomes were not harmed by the use of an e-textbook. They used an e-reading platform called Courseload, which had features such as highlighting, annotation, and submitting questions to the instructor directly from the textbook. Costs to the library and licensing negotiation problems were identified as potential pitfalls. Hendrix, Lyons, and Aronoff (2014) described an e-textbook pilot program conducted at the University at Buffalo and led by the Libraries. Unlike other pilots that focused on a single course or a few courses, this pilot instead provided students with access to numerous e-textbooks through the CourseSmart platform. While the platform provided some additional features, such as personalized bookshelves, highlighting, annotation, and bookmarks, restrictions on saving and printing e-textbooks led some users to prefer the print textbooks. Surveys of participating students indicated

that they would prefer print textbooks if costs were equal, but that a 25% reduction in cost would lead most students to prefer the e-textbook (Hendrix et al., 2014).

Additional research has revealed how providing course content beyond traditional textbook titles can prove to be a successful strategy for libraries. Carr, Cardin, and Shouse (2016) described a program at East Carolina University that was inspired by the work at University of North Carolina at Charlotte—also a key model for LSU Libraries' program. They found that libraries can discover "opportunities [...] by focusing on the acquisition and/or promotion of unlimited concurrent user online access to [course-adopted texts] that were not published as textbooks" (Carr et al., 2016, p. 1). They noted that some upper-level courses assign scholarly monographs and non-scholarly books that are the type of e-books that may be available with unlimited concurrent user licenses.

They described a process similar to what was undertaken at LSU Libraries, wherein they compared the list of course adopted texts provided by the campus bookstore to the library e-book holdings, and to acquisition platforms that had additional e-books available for purchase with unlimited user licenses. They notified the course instructors and eventually provided a website for students that listed the books with links to the full text. The texts were generally platform independent and available as PDFs for download and printing.

E-textbooks Initiative
Process

The process undertaken at LSU Libraries is centered on the textbook adoption data provided to the campus bookstore. Each semester, a librarian acquires the list from the campus bookstore with the books assigned to respective course offerings for the upcoming semester. This list contains information including course number, course

name, book title, and ISBN. Prior the e-textbooks initiative, the library received this list as a tool to prevent students from acquiring required textbooks through interlibrary loan. A librarian met with the textbook manager in order to pursue the idea of using the adoption list to identify titles that were or could be licensed through the libraries. The bookstore's textbook manager recognized the priorities shared with the library relating to student success and college affordability and approved the library's use of the list for the e-textbooks initiative.

Moving forward with the bookstore's adoption list, the library uses ISBNs as the point for matching collections with adopted titles. The bookstore list is received as a CSV file and a script developed by library programmers is used to extract the ISBNs. Then, using the search interface in GOBI Library Solutions from EBSCO, the ISBNs are entered into GOBI's Alternate Formats search. The results can be limited to produce a list of titles available as e-books. The Libraries' holdings are reflected in GOBI, allowing librarians to determine the titles in the collection versus titles for purchase. Additionally, purchase options are only enabled for e-books from vendors that meet the unlimited user, DRM-free, and perpetual access criteria. A librarian records both types of matches: those currently owned and those available for purchase. Then, the match is confirmed by identifying that the title from GOBI is the same as the title adopted for the course. At times, the adopted title and title available for purchase can be different editions. In this case, the professor is contacted to determine if the alternative edition is an appropriate replacement. Prior to purchasing new titles, a final check occurs to confirm that the class is still in the course catalog and has not been cancelled between the period of time since when the bookstore's adoption list was generated. If the course remains, the title is

purchased.

After the matching process that identifies titles for inclusion in the initiative, a

librarian develops a spreadsheet with the book title and corresponding information:

instructor, department, course number and section, course title, a permalink to the e-book

on the publisher's platform that includes proxy server information, and a link for the

Syndetics book cover image. This data is collected for internal purposes and to populate

the public-facing student webpage that presents the titles covered by this initiative. The

spreadsheet is formatted to feed into this public-facing student webpage:

https://www.lib.lsu.edu/ebooks. This site is the central hub, listing all titles for the

semester and offering basic search options to support discovery.

Website Integration: E-Textbooks for Students

The first iteration of the e-textbooks page was published in the fall of 2014. At

that time, the Libraries' webpage, https://www.lib.lsu.edu, was a mostly static website

with some custom MySQL databases. The matching e-books were displayed as an HTML

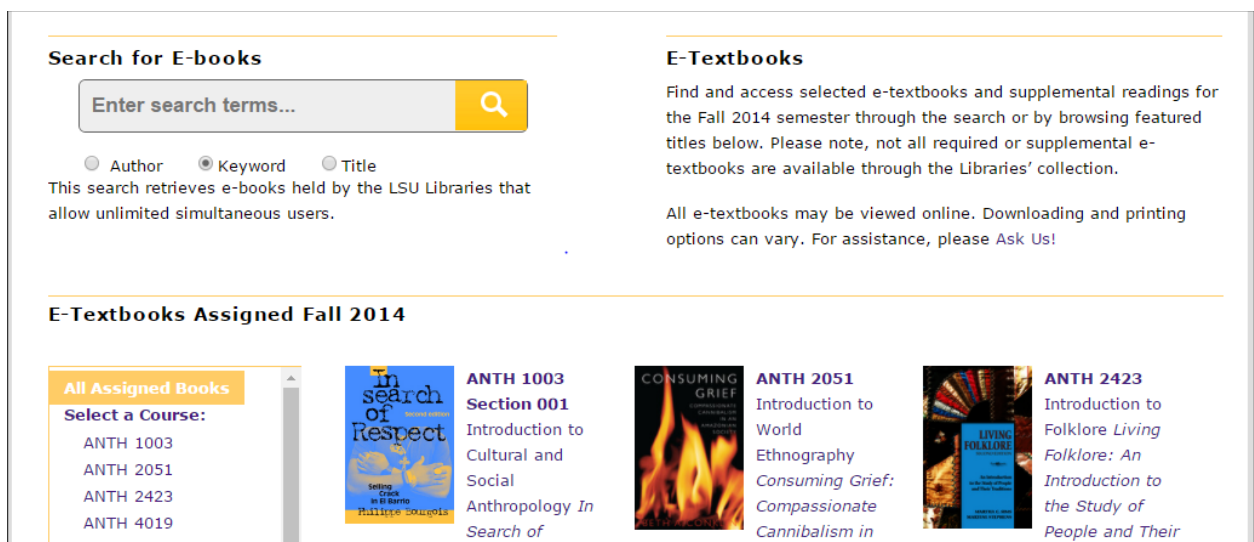list. A jQuery script was included to enable filtering by course number.

Figure 1: Student page in 2014

In the fall of 2015, the LSU Libraries migrated its website into the open source content management system Drupal (https://www.drupal.org/). Drupal's development framework provides tools for the rapid development of applications. Leveraging these, a custom Content Type for e-textbooks was designed to include fields such as Book Title, Course Number, and the academic department offering the course. Using the Feeds module (https://www.drupal.org/project/feeds), a custom importer was created to ingest the data from the spreadsheet prepared by the librarian with the relevant book and course information into the Drupal database.

With the data imported into Drupal, the display and searching features are handled by a set of views built using the Views module (https://www.drupal.org/project/views). This module enables the site builder to configure a complex database query without writing code. For this project, the query selects all the e-books owned by LSU Libraries that are currently assigned to courses. Librarians use elements of the module to present search boxes and filters for the end users. The initial configuration was designed to enable students to search for their course materials by instructor, course number, course title or book title.

E-Textbooks - Fall 2015

Instructors: Search for e-textbooks the Libraries has or can purchase for use in your class at *Instructors*.
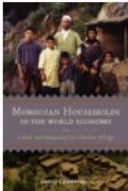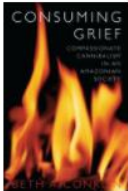
Instructor | Course Number | Course Title

Book Title

[Search] [Reset]

ANTH 1003
Section 1
Introduction to Cultural and Social Anthropology
Instructor: Rahder
In Search of Respect

ANTH 1003
Section 2
Introduction to Cultural and Social Anthropology
Instructor: Powell
Moroccan Households in the World Economy

ANTH 2051
Section 1,2
Introduction to World Ethnography
Instructor: Regis
Consuming Grief

Figure 2: Student page in initial Drupal configuration

Drupal functionality was applied to enable students to access course materials through LSU's Moodle learning management system. After a title is placed on the student-facing page, a process is triggered that enables the titles to appear in the respective Moodle course. A feeds extension module called Feeds Extensible Parser (https://www.drupal.org/project/feeds_ex) automatically generates an XML feed that includes the book title, URL, and other pertinent course information. Campus Moodle administrators wrote a script to parse this information, then include it on each course page, thus providing an additional access point that has been central to extending the reach of this service.

Promotion

This Moodle integration has greatly enhanced student discoverability by linking access to the title to the space where students are thinking about academic work. The primary other promotional mechanism is contacting affected professors via email to alert them to the availability of the required textbook in the Libraries' e-collection.

Additionally, the email highlights the usability features of the titles, including that the e-books have chapter-by-chapter PDFs and/or a whole book PDF, and that the entire class can access the titles simultaneously. The professors are encouraged to promote the access to their students through an email, in-class announcement, or reference on the syllabus. The Moodle integration is also noted in the email message.

Beyond targeted communication to professors teaching affected courses, the Libraries promotes the initiative broadly using the Libraries' web and social media presence. This includes a promotional slide on an image carousel on the homepage, blog posts highlighting the program's impact, and promotion on social media.

Website Integration: E-Textbooks for Faculty

In addition to the student-facing page, librarians leveraged Drupal's framework to build a database of available e-books for faculty members. This service allows instructors to search a database of over 250,000 titles available to the Libraries and aligned with the three principles. The titles are populated using publisher title lists found on their websites. Additionally, a small number of open access e-books, such as those from Knowledge Unlatched, and open textbooks, including those populating the Open Textbook Library, are included. The first iteration of this system was implemented in the fall semester of 2015. This version allowed users to search for potential course materials by book title, author, or e-ISBN. Once a title was identified, the instructor could complete a simple web form that sent a notification email to library staff. If the Libraries already owned the item, staff arranged to include it on the public-facing webpage during the appropriate semester. If the Libraries did not yet own the item, staff began the process of purchasing it so it could be added. Based on user testing and feedback, the subsequent

iteration added clarifying language to the results page and search fields to limit by title or

keywords and author(s) last name.

Figure 3: Faculty page with limiters

Assessment

Analytics

LSU Libraries uses Google Analytics on its main website as well as several

related websites. Librarians check these analytics regularly, looking at statistics including

most visited pages, referring pages, and top entrance and exit pages. Looking at the

public student- and faculty-facing pages for this e-textbook initiative, librarians found

that the student-facing page was visited over 2,000 times in fall 2014. While relatively

low, these numbers appeared promising considering that it was a new service and that

this was prior to the launch of the promotion campaign, which included social media and

Moodle integration. Usage was at its highest early in the semester, dipped between mid-

term exams and Thanksgiving, but rose back towards the finals period. In the spring of

2015, pageviews multiplied; as the analytics show the student-facing page was visited

around 8,000 times. This increase was attributed primarily to promotional activities.

In the fall of 2015, when the website was migrated into Drupal, librarians began to capture more information about the student-facing page's usage. In addition to visits, librarians also began to see how patrons searched the page. For example, data shows the search terms users entered and the fields used. Librarians applied this data and insights gained in usability testing, discussed below, to inform and implement improvements in the design and functionality of the site.

User Testing

An additional element of the assessment process is the multiple rounds of usability testing on both the student and faculty pages conducted by librarians. The first tests were run in the spring of 2016. The purpose of the initial round of testing was to assess the findability and ease of use and satisfaction with the student-facing page. Five students participated, all of whom were juniors or seniors. This group was a convenience sample of student workers in the Circulation department. The researchers were cognizant of the fact that student workers may have special knowledge of some library functions, and in some cases may not be representative of students as a whole. However, because this was a new feature that these students were no more likely to have used extensively then non-student workers, they were judged by the researchers to be acceptable in this case.

They were first asked to find the student-facing page. Once on the page, the students were prompted to find three items. In the first two scenarios, the course number and part of the course title were provided. For the third search, students were asked to search for a book in a course they were planning to take in the upcoming semester.

Participants were also asked for their impressions of the page, and if they could make any suggestions for improvements.

This test indicated that the webpage was generally easy to use, but an improvement was identified. The participants suggested that librarians enable a search field for courses based on the departmental abbreviation (e.g. PETE for petroleum engineering). This change was implemented. Also, participants were observed having difficulty finding the page from the library website's homepage. Therefore, promotion was increased to respond to this knowledge gap. A slideshow image was added to the homepage and an entry in the library's blog section on the homepage was updated to highlight relevant information at the start of each semester.

The next round of testing also focused on the student-facing page. To recruit participants, the researchers set up a table in the lobby of the main library. A table-top sign and bowl of candy were displayed to draw attention. Five students participated and were compensated with candy plus a $5 gift card to the university bookstore.

The students began from the student-facing page. They were asked to find books assigned to specific courses. This time, however, students were given more information in addition to course name and number. Librarians had developed concerns that if students entered multiple fields of information, they would miss potential matches if any field had errant information. This concern was confirmed in this testing. Many students would enter all the information provided and a typo on any field would prevent results from displaying.

In response to these observations, the following changes were made. First, the search was configured so that results displayed if any field matched with the search

terms, rather than requiring all fields to match. Second, the course title field was removed in an effort to simplify the interface. Course title tended to be longer than the departmental prefix and course number, less consistent, and therefore more prone to user error. Finally, participants were likely to enter a prefix, usually "Dr." before entering the teaching professor's name, whereas the page data included just the professor's last name. Before the testing, the field would fail to return a result unless an exact match was found. After the testing, setting were modified so that results would be returned if any term was matched, thus ignoring if a last name was preceded by Dr. or Professor. The current iteration of the search is configured with a view to enable students to search for their course materials by academic department, course number, instructor or book title.
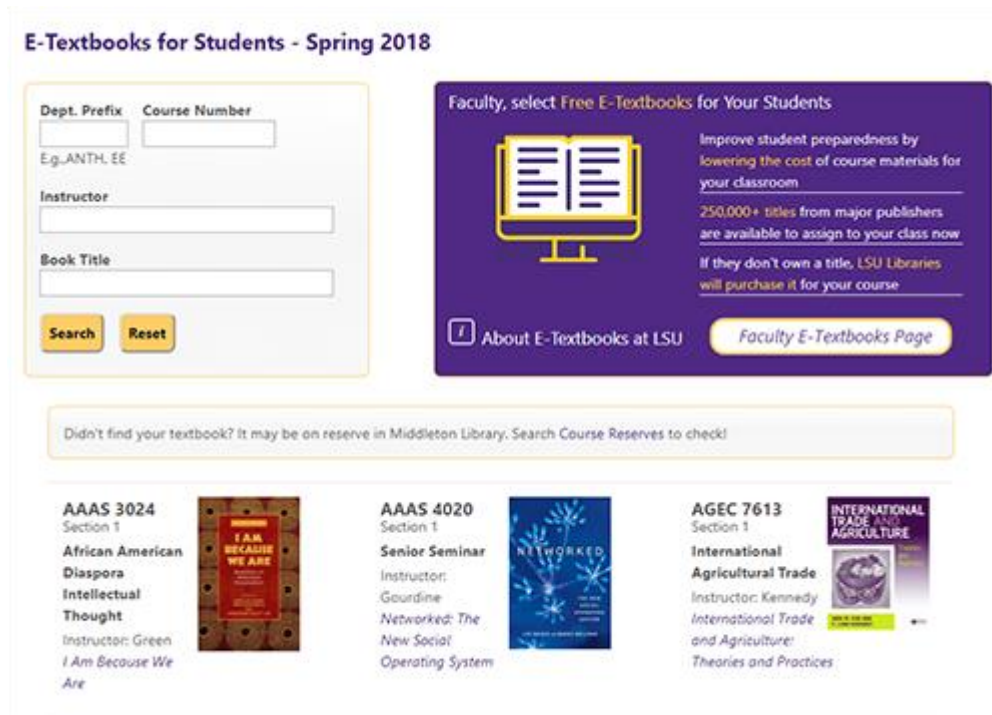

Figure 4: Student page revised post-user testing

Student Surveys

An additional assessment approach involves surveying students in affected classes to determine usage behaviors and preferences. Usage statistics are collected from publishers and many of the Libraries' most used e-books have been identified as being used in courses through this initiative. Furthermore, collections trends reflect increases in electronic materials usage and decrease in print materials usage over recent years, including the timeframe this initiative has been active. User surveys compliment interpretations of this usage data by asking students in affected classes to describe their use of the book, discuss their general attitudes toward e-books, and provide feedback.

Surveys are sent to professors teaching classes where access has been provided to at least one title through the library and ask that they forward the survey to the students. These are sent prior to exam week near the end of the semester to achieve a full sense of the use over the semester. The survey design has been enhanced since the initial deployment in spring 2015, with questions included and excluded based on previous student feedback and a growing understanding course material trends. The survey has been administered every spring and fall semester of the program except the first semester, fall of 2014. The survey has not been deployed in the summer, when traditionally very few classes have a library e-textbook. The response rate for the fall and spring semesters is generally between 5-10%.

An initial question is: Did you know that a textbook for this class was available for free as an e-book from LSU Libraries? with the response options: Yes, I know and I used it. Yes, I knew but I did not use it. And No, I did not know. Subsequent questions appear based on the response (See Appendix A for the full survey).

Findings reveal that the majority of students are aware, but with around 20%, depending on the semester, unaware of access. This could be due to the wording of the question. The integration with Moodle provides a link to the library-licensed e-book followed by description "Free access through LSU Libraries." Yet, students may be primarily accessing the title through Moodle, which directly takes them to the publisher platform, and therefore overlooking of the library's role. For those who responded that they knew of and used the e-book, subsequent questions probe deeper into this use. Findings include that the vast majority of users access the title through a desktop or laptop computer—a behavior that mirrors how the majority of users access the library's website. Overall, users confirmed that they found the titles easy to use and appreciated the money savings.

Student Savings

Perhaps the most impactful assessment strategy attempts to determine the potential financial impact of this initiative in terms of student savings. To prepare to measure savings, the metrics tracked are the cost of the title from a major vendor—either Amazon or the campus bookstore, and class enrollment figures. Both numbers involve uncertainties and assumptions. Students use a variety of mechanisms to obtain a title, including buying new or used, sharing, and locating a free or pirated copy. Additionally, some students will not buy the book at all. As a result, it is impossible to accurately anticipate how students would have behaved were access to the title not provided through the library and therefore how much students saved as a result. Acknowledging the imprecision of the cost savings, the library has elected to maximize the potential savings by calculating cost using the price of a new print book from one of the major vendors.

Class enrollment fluctuates throughout a semester, with students adding and dropping at various times. Additionally, it is not possible to accurately predict book purchasing and returning behaviors of students who add courses late or drop courses throughout the semester. Therefore, the both enrolled students and available seats are counted at one point in the semester around the start of the semester in an attempt to account for this uncertainty. To present the maximum potential cost savings, these full enrollment figures are used in savings calculations. Using this approach, LSU students have saved over $3 million by using a library e-textbook for their class since the program's launch.

Conclusion

The work of this initiative has provided an alignment between library activity and the university's strategic priorities of reducing cost and improving retention by ensuring all students in a class have access to required titles from the first day of class. The roles librarians play capitalize on their skill in access and discovery, publishing and licensing, and curriculum integration, while underscoring their role in supporting student learning. Titles covered by this program are overwhelmingly scholarly monographs. These are the types of books that have traditionally made up library collections and therefore their purchase is in line with the Libraries' long-term collection development strategy. As a consequence, courses that adopt traditional textbooks, including textbooks that require access codes, are largely beyond the scope of this program. Given the alignment with the larger collection development strategy, the initiative has acted as a tool for demonstrating the impact of library collections and providing a meaningful example of how investments in collections bolster student success.

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Appendix A

A variation of this web-based survey has been administered via Qualtrics each semester.

It begins with IRB consent language.

Initial block: All survey takers see

Q1 What class are you taking this survey for? (i.e. HIST 2000)

Q2 Did you know that a textbook for this class was available for free as an e-book from LSU Libraries?
- Yes, I knew and I used it
- Yes, I knew but I did not use it
- No, I did not know

Q3 In general, how willing would you be to use a free e-book version of a required textbook?
- Very willing
- Somewhat willing
- Somewhat unwilling
- Very unwilling
-

Q4 If money is not an issue, what format do you prefer for your textbooks?
- Print
- E-book
- Access to both print and e-

End of initial block / End of survey for those who answered "No, I did not know" to Q
Start of second block for those who answered "Yes, I knew but I did not use it" to Q1
Q5 How did you know this e-textbook was available from LSU Libraries? (check all that apply)
- Link in Moodle
- My professor told me
- A classmate told me
- I found it myself
- Other:

Q6 Why did you not use it? (check all that apply)
- I prefer print textbooks
- I already owned / had free access to the textbook

- The e-book was too difficult or frustrating to use
- I wanted a print copy for my personal library
- I didn't need to read this textbook
- Other:

End of second block for those who answered "Yes, I knew but I did not use it" to Q1 / End of survey
Start of second block for those who answered "Yes, I knew and I used it" to Q1
Q5 How did you know this e-textbook was available from LSU Libraries? (check all that apply)

- Link in Moodle
- My professor told me
- A classmate told me
- I found it myself
- Other:

Q6 Describe your experience using this e-textbook: (check all that apply)

- It was easy to use
- I preferred it over a print textbook
- I used it along with a print copy
- This e-textbook saved me money
- It was difficult or frustrating to use
- I would have preferred a print textbook
- I didn't save much money because I printed out the e-textbook
- Other:

Q7 How did you read the e-textbook (check all that apply)

- Phone
- Tablet / e-reader
- Desktop / laptop
- Printed out

Q8 Would you have bought this textbook if it hadn't been provided for free?

- Definitely yes
- Most likely yes
- Most likely no
- Definitely no
- Not sure

Q9 Please share any comments on your experience with this e-textbook:

End of second block for those who answered: Yes, I knew and I used It / End of Survey