Software Usability Research Laboratory
Wichita State University

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Summary: This study examines the advantages and disadvantages of available apps on various devices for reading e-Textbooks. Students completed a survey in which they stated which apps they used on which devices for accessing e-Textbooks, reported their perceived usability of the apps, and commented on the pros and cons of accessing textbooks in this manner. The results showed that students use computers and laptops the most, tablets next, then cell phones, and e-readers were the least used method of reading e-Textbooks. A wide variety of apps were used in order of most used to least used: Kindle, Chegg, iBooks, CourseSmart, Nook, and others. None of the apps received high perceived usability rates. The most cited advantage was convenience and ease of carrying. Other advantages included cost, saving trees, and the search feature. Disadvantages included electronic concerns of battery life, Internet availability, and possibility of crashing; visual concerns of eyestrain and headaches; and usability issues of turning pages, highlighting and note taking.

Are you a college student or instructor and currently using an e-Textbook? *If so, please complete our* ***latest survey*** *on your e-Textbook usage for a chance to win one of twenty $25 Amazon gift cards! The survey will take about 10 minutes to complete and will contain questions about your perceptions and usage of e-Textbooks.*

Introduction

There are now electronic versions of most published books, and users can access these electronic books from a variety of electronic reading devices, such as e-Readers (e.g., Kindle, Nook), tablet computers (e.g., iPad, Kindle Fire), desktop computers, laptops, and smart phones. Furthermore, many of the devices have several applications that can be used to access the e-Books. A student may have to use several e-Textbook applications, and may find himself dissatisfied with a particular e-Textbook because of the interface or the experience of using the particular application. However, as many schools and universities have already implemented e-Textbooks as a replacement or alternative to traditional paper textbooks (Colgrass, 2011; Marmarelli & Ringle, 2009; Swanson, 2011) the interface and experience of using these textbook replacements may become more important.

In a study from Reed College, students liked the integrated Kindle DXs in the classroom due to the portability of the devices, the paper savings, and the legibility of the textbook material; however, they did not like that the device did not support all of their course materials, the slow loading content, difficult navigation, and multiple textbooks were not able to be referenced easily. As a result, students concluded that a multifunctional device, like a tablet computer, may be better for the academic environment (Marmarelli & Ringle, 2009). Consequently, the college gave students iPads to use and they reported that highlighting, annotating, searching, and switching between texts easier (Marmarelli & Ringle, 2011).

Indiana University (2010) has been conducting many surveys, interviews, and focus groups on e-Textbook usage in and out of the classroom. From these studies researchers have found that students think e-Textbooks are easy to use, that they read more of the book when using the e-Textbook, and having access to the instructors' highlights and notes was valuable. However, some faculty did not expect the students to read the textbook and therefore did not use it to its full teaching potential (Indiana University, 2010). A subsequent study at Indiana University (2012) suggested that students would annotate and highlight if instructors modeled the behavior.

The world of education and e-Textbooks is rapidly changing. In fact, in the Fall of 2013, members

computer, and only 37% with a tablet, e-Reader (15%), or cell phone (20%). We conducted the survey in the Spring of 2015 again and found that 76% of college students reported using an e-Textbook. Most students are still accessing their e-Textbook through a desktop or laptop computer (75%), but more are using tablets (50%) and smart phones (31%) than before.

METHOD

Participants

A total of 355 participants completed the survey on e-Textbook usage, with 266 of those participants having used an e-Textbook before. The average age was 22, with an age range of 18 to 47. There were 173 females and 93 males. The participants were primarily white (62%), followed by Asian/Pacific Islander (15%), Hispanic/Latino (8%), Black/African American (6%), bi/multiracial (3%), American Indian/Alaskan Native (1%), and other or not wanting to answer (5%).

Materials

A 32-item survey was developed by SURL to explore e-Textbook usage. Along with basic demographic questions, the survey included items pertaining to which devices participants used to access e-Textbooks, which applications they used for their e-Textbooks, how they utilized these applications, and how frequently they used these applications. Participants also completed a satisfaction questionnaire (adapted SUS from Brooke, 1996) and asked to give comments on what they liked and disliked about their favorite and least favorite e-Textbook applications.

RESULTS

Accessing e-Textbooks

Many e-Textbook applications can be accessed from multiple devices, so we were interested in seeing how students accessed these applications. Most participants (75%) claim that they use a desktop or laptop computer to access e-Textbooks, however, a large amount (51%) say they use tablets to access e-Textbooks. Others accessed their e-Textbooks through their cell phone (31%) or e-Reader (16%). It is interesting to note that several users accessed their e-Textbooks through multiple devices (Figure 1).

Figure1 Devices students use to access their e-Textbooks.

Figure 1. Devices students use to access their e-Textbooks.

E-Textbook Applications Being Used

As less e-Readers are being used to access e-Textbooks more e-Textbooks applications are being used to access e-Textbooks through tablet devices. We wanted to know how many e-Textbook applications students were using. While a majority of the respondents were only using one e-Textbook application, it is interesting to note that several were using 2 or 3 or more. Also, many other students weren't using any e-Textbook applications at the time of the survey, indicating that they either (1) did not want to use the e-Textbook applications or (2) their textbooks were not available on these applications (Figure 2).

Figure 2. The number of students who are using a particular amount of e-Textbook applications.

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Students were also asked which specific e-Textbook applications they were using. The most popular e-Textbook application for students in this study was Kindle, followed by Chegg, and iBooks (Figure 3).

Satisfaction

Students were asked to fill out a perceived usability scale (SUS) based on the e-Textbook application they used most frequently. While the iBooks application had the highest usability score (71), the scores did not vary greatly between the applications. See figure 4 for breakdown of scores (Chegg *n* = 38; CourseSmart *n* = 24; iBooks *n* = 23; Kindle *n* = 42; Nook *n* = 10).

Furthermore, according to Bangor, Kortum, and Miller (2009), a score of a 73 and above would indicate high satisfaction with a system, and none of these applications reached that criterion. This suggests that there is still room for improvement in these applications.

Figure 4. Average perceived usability scores per e-Textbook application. NOTE: error bars depict +- 1 standard error.

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Comments on e-Textbook Applications

Advantages

The overwhelming reason students wrote in favor of e-Textbooks was convenience and ease of carrying. Of those who mentioned navigating, usually meaning searching and finding information, about half found e-readers more helpful than physical books in this regard. Some other advantages include reduced cost and the saving of trees.

"Less weight to carry around on campus. Instant access to information without looking up page numbers. Less expensive to manufacture. Overall it would just be more convenient."

"Textbooks on an e-Reader/tablet are beneficial for many reasons in my opinion. The main reasons are for saving paper, not having to carry around textbooks, the markings/highlighting is reversible, ability to search through text for specific words/concepts, and you save money."

Some students liked the convenience, but still preferred a physical book.

"*I would like to study the physical copy of the book at home because I feel that it is easier however having the tablet would be extremely useful because trying to bring all your books to class feels like I'm carrying a sumo wrestler on my back."*

Some of the students appreciated the extras that come with some of the apps. The resources that people mentioned were a dictionary, easy look up for terms and definitions, reminders, links, quizzes, extra examples/problems, interactive features, and citation capabilities.

Figure 5. Word cloud of e-textbook advantages.

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Disadvantages

Many students were concerned they could not depend on a device for their school reading because the battery might go dead when they needed to access their e-Textbook, the Internet might be slow or unavailable, or other technical malfunctions might happen. Usability was another complaint. About half the students that cited navigating, struggled to turn the pages or find what they were looking for. A common response was:

"I could not flip through the pages as easily in the e-textbook."

and headaches.

"I do like text books because staring at a screen is a lot more straining on my eyes then an actual book is. And with books you don't have to worry about needing wifi or a charged battery to read your homework."

"If you do not have internet access, it could be difficult to access your e-book. For me, I hate reading things on the internet. You may not be able to write/highlight in the e-book either."

Figure 6. Word cloud of e-textbook disadvantages.

Several students w rote that they found it more difficult to learn and retain information read on an electronic device.

"I do not retain information as well if read on an electronic device vs. an actual book."

While some students found the extras that come w ith some of the apps helpful, other students found that along w ith the extras come things that distract, like social media.

"If you are using your tablet, it is easy to get distracted with other things if a notification pops up."

Having multiple w indow s open w hen reading, researching, or doing online homew ork frustrated a few of the students.

"I currently have online homework and having to switch from tab to tab gets to be a pain."

Figure 6. Word cloud of e-textbook disadvantages.

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Conclusions

While more students are using e-Textbooks than before and are appreciating the convenience, many are still resisting this technology or experiencing trouble adopting it. Most of the issues concern dependability, readability, and usability. They w ant textbooks they can depend on to be available and w orking w hen they need them w ith a lack of eyestrain and easy access to note taking and highlighting features. Many simply prefer physical books because that is w hat they are used to, though w e are seeing a shift in more students using e-Textbooks.

In order for e-Textbooks to come into mainstream use, they need to have more advantages over paper copies of textbooks than convenience. While there exists technology for comfortable reading of novels w ithout eyestrain, e-Textbook apps presently rely on devices w ith backlights. Students also w ant apps that make it simple to navigate, highlight, and take notes. Considering usability and the resources, like links and reference capabilities, standardization across the apps w ould be helpful. Reading online makes students nervous w hen they have to rely on Internet that may not be reliable or fast enough. Dow nloading the e-Textbooks onto their devices w ould alleviate this, but there is still the issue w ith limited battery life.

Are you a college student or instructor currently using an e-Textbook?

If so, please complete our **short survey** on your e-Textbook usage for a chance to w in one of tw enty $25 Amazon gift cards! The survey w ill take about 20-30 minutes to complete and w ill contain questions about your perceptions and usage of e-Textbooks.

References

Brooke, J. (1996). SUS: A quick and dirty usability scale. In P. Jordan, B. Thomas, B. Weerdmeester, & I. L. McClelland (Eds.), Usability evaluation in industry (pp. 189-194). London, UK: Taylor & Francis.

Colgrass, N. (2011, September 3). More high schools hand out ipads, cut textbooks. *Newser*. Retrieved from: http://w w w.new ser.com/story/127635/more-us-schools-add-ipads-cut-back-textbooks.html

Indiana University (2012). Internet2 etextbook spring 2012 pilot final project report.

Indiana University (2010). Indiana university e-textbook project spring 2010 findings.

Marmarelli, T. & Ringle, M. (2009). The reed college kindle study. Retrieved from: http://w eb.reed.edu/cis/about/kindle_pilot/Reed_Kindle_report.pdf

Marmarelli, T. & Ringle, M. (2011). The reed college ipad study. Retrieved from: http://134.10.15.75/cis/about/ipad_pilot/Reed_ipad_report.pdf

Sw anson, P. (2011, July 31). Florida high school first to give students iPads instead of textbooks. *Sun Sentinel*. Retrieved from: http://modmyi.com/content/5016-florida-high-school-first-give-students-ipads-instead-textbooks.html.

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