You Can Lead Students to VitalSource, But You Can’t Make Them Think ... Or Can You?
The Impact of Training on E-Textbook Platform Preference and Recommendations for Recasting Library Practice

Teresa MacGregor and A.M. Salaz*

Introduction
Research shows that undergraduates worldwide prefer print to electronic formats for academic reading,¹ and that in many circumstances, they learn better when using print formats.² However, e-textbooks are becoming increasingly popular in higher education contexts for their cost and access advantages.³ The challenge for instructors and librarians is to identify the deployment and use practices of e-textbooks in higher education that increase preference and use so that students can take advantage of the convenience and affordability of digital texts without sacrificing learning.

One method for increasing the preference for e-textbooks suggested in prior studies is the provision of more effective training on the interactive tools provided within e-reading platforms.⁴ This paper presents the findings of a quasi-experiment exploring the impact of e-textbook platform training on the self-reported behaviors and preferences of undergraduate university students. For the study, three groups each comprising approximately 135 students enrolled in courses that utilized e-textbooks were sequentially surveyed about their e-textbook reading behaviors and preferences. The first group was not offered training on the features or usage of their e-textbook platform; the second and third groups received training from the library. The authors compared and analyzed responses from each group about their self-reported behaviors and preferences in light of prior research on e-book reading, format preference, and learning behavior in a tertiary educational setting. As a secondary aim, the study incorporated a practice-based evaluation of the merits and feasibility of long-term library involvement in e-textbook training efforts.

The results of the study, while cursory, indicate that training may help influence format preference through usage of e-textbook specific features and, as such, more research into this area is warranted. In the interim, the authors recommend that academic librarians consider implementing platform training as a standard part of their institutions’ e-textbook adoption programs. Integrating the library into this aspect of course development provided librarians with expanded opportunities for interactions with instructors and students, as well as the ability to cross-promote library services and resources.

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Literature Review

Format Preferences and Learning Advantages of Print

The fact that large majorities of tertiary students prefer learning from hard copy materials over digital materials has been widely documented across the literature. Learners who prefer print reading seem to feel and intuitively understand what has been documented in numerous empirical studies: that in certain circumstances, such as when texts are lengthy and deep concentration or learning is required, readers comprehend and recall information better from reading in print.

Despite the fact that large majorities prefer and learn better from reading in print, it is clear that this phenomenon does not persist across all readers or reading circumstances. Studies identify a variety of factors that appear to mediate learning performance and user preference between print and digital text formats. These factors include reader characteristics such as prior experience with digital reading environments, task characteristics such as the length and purpose of reading, technology characteristics such as hardware and software configurations related to scrolling, the ergonomic effects of e-ink technology, and others. Yet, it remains unclear how these factors can be weighted, how they interact, and whether they comprise an exhaustive list.

Theoretical insights suggest that a variety of memory encoding and learning functions can be affected by reading digitally. These functions may include haptics, mental mapping of texts, and cognitive load. Each of these implies different approaches to utilizing e-texts in academic contexts for optimizing learning and user experience.

If the tactile, multisensory experiences of reading in print are necessary for optimal reading and learning, as haptic theory suggests, this has implications for the design of digital reading devices that might engage or incorporate more physical handling and motion-interaction.

As far as mental mapping affects memory encoding, software design may be adapted to incorporate cues that would help readers more effectively visually survey and understand the overall structure and breakdown of lengthy texts. For example, the different types of progress indicators found across various e-book platforms that show how far a user has read and how much there is left to go is one way of understanding position in a text.

Finally, where cognitive load is concerned, educators and interface designers would be looking to minimize any hardware, software, or presentation-related demands on cognitive effort, such as scrolling, that might detract from the level of cognitive focus a reader is able to expend on comprehending and retaining the actual content of a text.

Of the numerous moderators that may have an influence on reader preference and learning from digital texts, we have taken a special interest in the role of learners’ built-up experience with e-texts and facility with e-reading tools and affordances. Of particular interest is how a learner’s comfort with, and ability to use, digital highlighting and notetaking tools might influence their overall format preferences and learning. Readers who employ these text-engagement tools in digital environments more frequently are also more likely to say they prefer or at least feel neutral about reading digitally, suggesting the possibility that increasing the use of these tools might have a resultant effect on user preferences and attitudes.

The level of experience and training a learner has with e-text is also something within the locus of influence or control of educators, through the design of program- and classroom-level curriculum, as opposed to factors such as neurocognitive processes related to haptic memory that are not as easy to influence. This makes the role of training and experience in digital reading formats of particular interest to educational practitioners. However, there is little causal evidence to suggest that user training or experience could increase preference for or positivity about e-text; and the correlational data that exists, while extensive, could suggest a relationship that goes in entirely the opposite direction (liking e-text promotes greater tool usage) or a relationship between both of these
variables with a third, unidentified factor. More study to understand the nature of the relationship between these variables is needed, and this study contributes a step in this direction by examining the association between a specific type of training intervention and format preference/feature usage.

Because controlled experimentation to determine cause and effect in educational research settings is costly and labor-intensive, the current exploratory study seeks to develop greater insight into whether pursuing such avenues of research would be worthwhile through quasi-experimental, survey-based exploration. It also aims to obtain indications of whether our current practical training efforts with students convey any practice-based benefits that are themselves worth the investment of time and effort.

*Adoption of E-Textbooks*

Despite demonstrated preference for print over digital formats for academic reading, institutions of higher education, undergraduate students, and publishers are all opting more and more for e-textbooks. According to a report by IBISWorld, e-textbooks made up more than 35% of the e-book publishing market in 2018. An expected increase in the number of college students is a key driver in expanding this market. Likewise, according to a report by Research and Markets, e-textbook rentals are expected to increase through 2021. The National Association of College Stores reports that "during the 2017-18 academic year, when purchasing course materials, ... 25% [of students] bought digital." This represents a 10% increase since spring 2016.

A major contributing factor to this trend, at least on the part of undergraduate students, is cost. E-textbook prices are dropping, falling by as much as 31% in 2016. In that same time, two major e-textbook platforms—VitalSource and RedShelf—posted increased sales. A recent case study at Lethbridge College in Alberta, Canada confirmed that students prefer to purchase e-textbooks when the price difference is about half of the traditional print textbook.

University libraries are participating in the move to e-textbooks by providing no-cost access to students through library purchases and subscriptions. The University of South Florida initiated a program called *E-books for the Classroom* in 2009 to purchase digital versions of course textbooks, assigned readings, and recommended readings for the library's collection. In 2017, Western Sydney University in Australia partnered with ProQuest to make e-textbooks available to students via the Ebook Central platform.

Given the increased availability, adoption, and purchase of e-textbooks, it is logical that educators would be concerned with students' effective use of this format. As indicated above, some research suggests that when instructors teach students how to use e-textbook platforms and effectively model good usage of those platforms for their students, preference for and increased usage of e-textbooks is positively impacted. As academic libraries are participating in making e-textbooks available to students, academic librarians should seize the opportunity to better understand—and take leadership roles in promoting—effective use of e-textbook platforms and features for their communities.

*Methods*

This study employs a quasi-experimental design to evaluate practice-based outcomes in an educational setting. A quasi-experiment involves the evaluation of treatment effects on groups that have not undergone a randomization procedure. This approach is common in education and social science problem contexts where data is necessarily gathered outside the controlled conditions of a laboratory.

The authors invited undergraduate students enrolled in courses with a required e-textbook to participate. In addition to management of library services, the first author directs textbook procurement and distribution at our institution. As such, she identified the applicable courses through engagement as the textbook operations
manager. A total of 24 courses enrolling 414 students made up the study sample. Instructors leading these courses were informed of the study, but were not asked to do anything for the study outside of routine educational activities such as distributing access codes and basic log-in instructions for their course e-books. Instructors did not participate in data gathering or have access to data or student participation records.

Librarians provided training on the e-textbook platforms in three ways. One: in a subset of courses, librarians joined a session during the first week of class to provide a short (15-minute) overview of the e-textbook platform and its features, as well as to answer student questions. Two: librarians created and distributed a one-page double-sided handout with basic access instructions and tips for using platform features. Three: librarians sent a weekly email to all students and instructors introducing platform features and access. Each email focused on one feature. Features were selected based on their relevance to a given point during the semester; for example, the e-textbook platform's mobile app was highlighted in the tip email the week before Spring/Fall Break.

Participants were surveyed at the end of their regular semester in Fall 2017, Spring 2018, and Fall 2018. The survey instrument is a questionnaire distributed by e-mail using SurveyMonkey (See Appendix A). It comprises 33 questions: 6 five-option Likert-style questions pertaining to the students’ use and preference for specific e-textbook features; 11 questions on e-textbook usage and training during the semester; 7 questions drawn from the previously validated Academic Reading Format International Study (ARFIS) questionnaire pertaining to general preferences for academic reading in print or digital format; 5 demographic questions to give an indication of the representativeness of responses and to conduct statistical analysis across demographic groups; 3 questions required by the Institutional Review Board to validate consent for participation; and 1 question for students to elect to receive a library-branded gift for participation.

Students were asked how often they used and how well they liked 11 different, specific built-in engagement tools afforded by the e-textbook platforms. These 11 digital tools were: highlighting, annotating, sharing/collaboration of notes, flashcards, text-resize/zoom, searching, definition lookup, study guides, bookmarking, page view (single, facing, continuous), and read-aloud.

This study follows a post-test-only non-equivalent groups design, which is considered pre-experimental. We collected data over the span of 1.5 years, and analyzed results both sequentially to identify trends, as well as non-sequentially across respondent groups from all semesters. We used SPSS to statistically analyze survey response data, and both SPSS and Excel to generate descriptive data. Likert-style data are treated as non-parametric for analysis. We used the chi-square statistic to test for relationships between our nominal variables and Cramer’s V and Phi as indications of the strength of associations.

We compared groups of students, a) by their semester of enrollment, b) by their self-reported status as “trained” or “untrained,” and c) by their self-reported level of prior experience using e-textbooks, to address two key questions:

- Do these groups vary in their usage of, or preference for, learning engagement tools (e.g. highlighting, annotating) in the e-textbook environment?
- Do these groups vary in their overall textbook format preferences, whether digital or print?

In addition to our efforts to observe the direct impacts of training on user behavior and format preferences, we made observations about the quality of interactions with students and instructors involved in the training program across the study period in order to make a practice-based determination about the indirect benefits of the training program. This activity was intended to inform decisions about continuing or curtailing this training and outreach effort in future semesters.

We did not take any measures related to learning outcomes or text comprehension, and have restricted the focus of this study only to user preferences and engagement behaviors.

The Institutional Review Board of Carnegie Mellon University reviewed and approved the research protocol.
Results

Demographics of the students who completed the surveys mostly reflect the demographics of our student body. Out of 72 total respondents, the distribution of majors was 33.3% Information Systems; 23.6% Business Administration; 22.2% Biological Sciences; 19.5% Computer Science; and 1.4% Other. This reflects our overall population, with a bias towards Information Systems—the major that more frequently adopts e-textbooks. Likewise, there was a good mix of class rank—26.4% Freshmen; 20.8% Sophomores; 29.2% Juniors; 20.8% Seniors; and 2.8% Other. Gender was heavily weighted toward female respondents (72.2%) over male respondents (26.4%; with 1.4% not responding); however, these numbers reflect our student population which is roughly 60% female.

In Fall 2017, students did not receive any training from librarians on the e-textbook platform. In Spring 2018 and Fall 2018, students received minimal training (in-class sessions, handouts, weekly email tips) from librarians. In the Fall 2017 survey, 0% of students said that they had received training from the library, whereas in both Spring 2018 (68%) and Fall 2018 (52%), students recognized that they had received training. While not indicative of improvements in preference or usage, this at least demonstrates that students connected their e-textbook with an instructional service provided by the library. It is also important to note that while training was offered to all students in Spring and Fall 2018, not all students participated in training sessions or accessed the training materials. Some were absent during workshops, others simply may not have utilized the provided training material. Therefore our analysis looks at groups by the semester in which they were enrolled, as well as their self-reported status as having actually accessed or received training. In total, 38 students in our participant sample self-identified as having received some kind of training, and 34 said they did not.

Students used two different platforms for accessing their e-textbooks, and we evaluated whether the platforms were distinctive in terms of their usability in a way that could affect the study outcomes. The two platforms, VitalSource and RedShelf, have similar features and access options. Results show no relationship between the platform used and the level of difficulty using the platform reported by participants, although the number of exclusive RedShelf users was low (n=8). In Fall 2017 when no students received training, 36% found their e-textbook easy to access. In Spring 2018 when classes did receive training from the library, the percentage increased to 68%. In Fall 2018 with similar training, the number reduced to 56%. Overall, there is no significant relationship between the semester and reported ease of access.

Semester of enrollment appeared to make a very small impact on textbook format preference from Fall 2017 to Spring 2018 as students were more likely to say they prefer digital formats or have no preference: 18.1% in Fall 2017, but 36.8% in Spring 2018. In Fall 2018, this number increased to 44%. This does not amount to a statistically significant correlation between semester of enrollment and textbook format preference ($\chi^2 = 4.385, p=0.356$).

Semester of enrollment had a closer association with format preference than students’ self-reported status as being trained on the platform. Those who self-identify as trained were no different in their overall format preferences than those who self-identified as untrained ($\chi^2 = .563, p=0.755$). 36.8% of those who said they were trained preferred digital textbooks or had no preference; versus 29.4% of those who said they had not been trained.

We recognized that some students in our cohorts might have brought previous e-textbook experience with them, either from previous courses at University or even from high school. This prior experience could influence their perceptions and behaviors. We assessed the role of prior e-textbook experience against overall format preferences and found no correlation ($\chi^2 = .291, p=0.865$). However, Graph 2 illustrates how our first-time e-textbook users were ever so slightly more likely to say they preferred digital textbooks or had no preference either way, compared to the seasoned e-textbook users in this group who were a little more likely to say they preferred print.
We examined students’ frequency of use and preference for 11 different learning engagement tools afforded by the e-textbook platforms. For most tools, no difference between groups by enrollment of semester or by training status was observed. Students who self-identified as trained, however, reported more frequent use of the Page View feature ($\chi^2 = 14.085$, $p=0.007$, Phi = .442, Cramer’s V = .442). This feature allows readers to manipulate the display of book pages to enable single, facing, or continuous page layout in the interface. Overall, 35.3% of untrained students said they used the Page View feature sometimes or often, while 76.3% of trained students said the same.
In addition to using this feature more, trained students who utilized the Page View feature expressed relatively stronger preference or “liking” of the feature ($\chi^2 = 15.024$, $p=0.010$, Phi = .457, Cramer’s V=.457). 17.6% of those without training said they strongly liked this feature, while 42.1% of those with training said the same. The difference in groups represents a percentage shift from “like” to “strongly like,” the meaning of which is difficult to quantify.

Other tools showed an indication of movement. 2.9% of untrained users said they used the e-textbook platform’s Read Aloud feature, while 18.4% of trained users said the same. 72.7% of untrained users said they used the Search feature, while 92.1% of trained users said the same. 11.8% of untrained users said they used the Note-Taking tool, doubling to 23.6% of trained users. 55.8% of users said they used Text-Resize-Zoom, while 68.4% of trained users said the same.

Among untrained students, the most frequently used e-textbook tools were Searching (72.7%), Highlighting (61.8%), and Text-Resize-Zoom (55.8%). Among trained students, the most frequently used tools were Searching (92.1%), Page View (76.3%), and Text-Resize-Zoom (68.4%), followed by Highlighting (65.3%).

As for printing, there is a statistically significant correlation in the data, as the percentage of students electing to print any portion of their e-textbook is dropping over time ($\chi^2 = 22.387$, $p=0.013$, Phi = .558, Cramer’s V=.394.). It is worth noting that printing services on this campus are free of charge to students, so there is no economic incentive related to this behavior. Could it be that as students become more familiar with the digital platform they no longer require printouts? Or is the printing function of the digital platform inconvenient or restrictive? Only further study will tell. Students who self-reported as being trained did not have any significantly different printing patterns versus those who self-reported as being untrained ($\chi^2 = 1.858$, $p=0.173$), regardless of semester of enrollment.
Discussion

Our expectation at the beginning of this research was that training—even a limited amount—would positively impact preference for e-textbook formats and features. A few specific features of the e-textbook platform, particularly Page View, seem to be used more often and liked more strongly by students who received training. However, this does not provide firm evidence that overall format preferences were impacted by experience or training. Our data shows that the overall percentage of students preferring or being neutral about e-formats increased semester to semester, but not enough to achieve statistical significance. This could be a product of sample size, and we would like to continue gathering data in order to better evaluate the trend.

This could also be attributable to the natural timeline of learning and preference effects. The adoption and integration of new learning habits and behaviors, as well as their effects, can be longitudinal in nature and difficult to detect over the course of a semester, or even two or three. Habits and preferences can take a great deal of experience to change. A continuous, longitudinal data gathering program will help to understand the longer-term impacts of training on e-textbook platforms, particularly as students gain practice over time.

Interestingly, we observed that there does seem to be a slight negative correlation between students’ overall e-textbook experience level and format preference in this study sample. That is, more experienced users in this sample are less likely to say they prefer e-textbooks. This counteracts the working theory that becoming more familiar with the platform and its feature functionality enhances comfort and preference. Given our limited sample and the survey format, it is impossible to determine why this might be true, but it does present an interesting avenue for future research. One possibility is that the specific platforms in use in our context are uniquely distasteful or unusable, leading more experienced readers in this study sample to more firmly conclude a dislike for the format.

The largest existing dataset on the subject (from ARFIS) shows a fairly clear correlation between tertiary students’ preference for e-texts and their reported frequency of use of e-text engagement tools such as notetaking.
Until further evidence is obtained, we must continue to entertain the possibility that e-text preference causes tool usage, rather than the other way around, or that a third, unidentified variable or set of variables corresponds with both of these factors and influences both of them. It also remains possible that other types of training or e-text platforms/tools would yield different results.

The secondary aim of our study was a practice-based evaluation of indirect benefits related to the training program. In this case, the librarians involved in this research reported increased engagement with both instructors and students in the courses that received library training, as well as a better personal understanding of the pros and cons of specific e-textbook platforms and their relationship to other digital reading platforms. They reported more interactions with students and instructors beyond the scope of e-textbook usage, as well as greater confidence in evaluating e-text platforms and the ability to make acquisitions recommendations. As an opportunity for campus outreach and professional development, we recommend that academic librarians interject themselves into the e-textbook adoption programs at their institutions, to both develop and share expertise with their user communities and to assist in the best practices for adoption and use of digital reading technologies inside and outside the classroom.

Limitations
The nature of the research is exploratory and intended to provide insight into whether it would be worth furthering the research by developing a higher-cost and higher-demand set of controlled experiments. The pre-experimental design has a number of inherent validity challenges. Given that groups were not pre-tested, it is impossible to determine conclusively whether we should attribute differences in outcomes to the training applied or to other group differences. The indications, therefore, suggest that training and experience with e-textbooks could be effective for changing user behavior and attitudes, but not that it is effective. The use of self-reported survey data to evaluate effects also introduces challenges, such as self-selection bias, that limit the generalizability of the findings. A more robust and logistically challenging design is warranted by this exploratory study, and is necessary to form conclusions. This study did not evaluate learning or comprehension outcomes related to reading format.

Conclusions
While there is not enough data from this or other published studies to recommend full-scale investment in training development for the use of e-textbooks for tertiary student populations, the indications present in this and other studies are sufficient to recommend low-cost investments in user training and, importantly, more substantial investments in further research into the area. We also highly endorse the outreach opportunities available for librarians who volunteer to participate in their institutional e-textbook adoption and training processes.

Directions for future and further research include the implementation of more robust experimental, longitudinal, and qualitative methods for assessing the effects of training and experience on users’ behaviors with, and attitudes towards, digital texts for academic reading. Such methods are typically more labor-intensive and costly, but yield more broadly applicable outcomes. The findings of this and similar studies suggest that it is worth an effort to continue this avenue of inquiry within the reading-format research community and beyond. It is also conceivable that e-textbook platforms themselves, such as the ones used by participants in this study, VitalSource and RedShelf, can provide more robust observational data about user engagement with e-textbooks that can be captured unobtrusively (but always with the informed consent of users). Finally, we recommend additional research focused on populations of e-preferring academic readers, because while such individuals currently constitute a minority of readers, they may share meaningful characteristics or backgrounds that can help explain and extend the facility of academic e-textbooks to others.
The significance of study in this area goes beyond user preference or comfort. We return to the facts becoming firmly established in the research literature that digital reading formats for long-form informational reading result in an inferior degree of learning and comprehension. Learning—along with cost, convenience, accessibility, and environmental concerns—is one of the factors that drives user format preferences and remains a key concern to educators.

We can also clearly see that the affordances of digital texts, including lower costs and broader accessibility, are of great value in extending the reach of tertiary educational opportunities. It is incumbent upon educators, librarians, technologists, publishers, and other stakeholders to continue investigating educational practices and technological solutions that will bring the learning performance of digital formats in line with print, or even to surpass print, to realize the full potential of the digital age.
Appendix A. Student E-Textbook Survey

1. I have read and understand the consent information above.
   a. Yes
   b. No
   *If the answer is no, the individual is not allowed to proceed to the next question.*

2. I am age 18 or older.
   a. Yes
   b. No
   *If the answer is no, the individual is not allowed to proceed to the next question.*

3. I want to participate in this research and continue with the survey.
   a. Yes
   b. No
   *If the answer is no, the individual is not allowed to proceed to the next question.*

4. How frequently have you used eTextbooks before?
   a. This was my first time using an eTextbook
   b. I have used eTextbooks several times before
   c. I have used eTextbooks many times before
   d. I have never used an eTextbook and didn't use one this semester

5. Which eTextbook service did you use this semester? Check all that apply.
   a. VitalSource
   b. RedShelf
   c. Unsure/Don't remember
   d. I never accessed an eTextbook

6. On what devices did you access your eTextbook? Check all that apply.
   a. Desktop computer
   b. Laptop
   c. Tablet (e.g. iPad)
   d. Smartphone
   e. Other (Please specify)
   f. I never accessed the eTextbook

7. How did you access your eTextbook? Check all that apply.
   a. From the service's website
   b. From the service's stand-alone application
   c. Unsure/Don't remember
   d. Other (Please specify)
   e. I never accessed the eTextbook

8. How easy or difficult was it to access the eTextbook?
   a. Easy
   b. Difficult
   c. Difficult at first but got easier
   d. Easier at first but got more difficult
   e. Other (Please specify)
   f. I never accessed the eTextbook

9. Did you receive any training on the eTextbook application? Check all that apply.
   a. Yes, from my instructor
   b. Yes, from the Library
   c. Yes, from the application (e.g. online help, video tutorials)
   d. Other (Please specify)
   e. No, I did not receive any training
10. Did you print any portions of the eTextbook? If so, how many pages in total?
   a. None, because I chose not to
   b. None, because the application did not allow printing
   c. 1-10 pages
   d. 11-20 pages
   e. 20-50 pages
   f. The whole book

11. If you printed portions of the eTextbook, why did you do it? Check all that apply.
   a. Easier to read/see on print
   b. Easier to study from print
   c. Easier to take notes on print
   d. My instructor told me to
   e. Other (Please specify)
   f. I did not print any pages from the eTextbook

12. Did you take any handwritten notes on paper while using the eTextbook?
   a. Yes
   b. No
   c. I never accessed the eTextbook

13. Did you type any notes in a word processor (like MS Word) while using the eTextbook?
   a. Yes
   b. No
   c. I never accessed the eTextbook

14. Did you use any features of the eTextbook application? If so, how often?

<table>
<thead>
<tr>
<th>Feature</th>
<th>Used Often</th>
<th>Used Sometimes</th>
<th>Used Rarely</th>
<th>Used Never</th>
<th>Didn’t Know About It</th>
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15. How well did you like using the following features of the eTextbook?

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<tr>
<th>Feature</th>
<th>Strongly Liked</th>
<th>Liked</th>
<th>Disliked</th>
<th>Strongly Disliked</th>
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18. Did you use any features of the eTextbook application? If so, how often?

<table>
<thead>
<tr>
<th>Feature</th>
<th>Used Often</th>
<th>Used Sometimes</th>
<th>Used Rarely</th>
<th>Used Never</th>
<th>Didn’t Know About It</th>
</tr>
</thead>
<tbody>
<tr>
<td>Text resizing / Zoom</td>
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<tr>
<td>Read Aloud</td>
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</tbody>
</table>

19. How well did you like using the following features of the eTextbook?

<table>
<thead>
<tr>
<th>Feature</th>
<th>Strongly Liked</th>
<th>Liked</th>
<th>Disliked</th>
<th>Strongly Disliked</th>
<th>Didn’t Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Text resizing/Zoom</td>
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<tr>
<td>Read Aloud</td>
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</tr>
</tbody>
</table>

20. Please share more details about your eTextbook experience to further explain your ratings/responses above. [Open-ended text box]

21. Overall, do you prefer print or digital formats for your textbooks?
   a. Print
   b. Digital
   c. No preference

22. I remember information from my textbooks best when I read them from printed pages.
   a. Strongly Agree
   b. Agree
   c. Neither agree nor disagree
   d. Disagree
   e. Strongly Disagree

23. I can focus on material better when I read it electronically.
   a. Strongly Agree
   b. Agree
   c. Neither agree nor disagree
   d. Disagree
   e. Strongly Disagree

24. I prefer to read my textbooks electronically.
   a. Strongly Agree
   b. Agree
   c. Neither agree nor disagree
   d. Disagree
   e. Strongly Disagree
25. I prefer to have my textbooks in print format.
   a. Strongly Agree
   b. Agree
   c. Neither agree nor disagree
   d. Disagree
   e. Strongly Disagree

26. I can focus on material better when I read it in print.
   a. Strongly Agree
   b. Agree
   c. Neither agree nor disagree
   d. Disagree
   e. Strongly Disagree

27. I remember information from my textbooks best when I read them electronically.
   a. Strongly Agree
   b. Agree
   c. Neither agree nor disagree
   d. Disagree
   e. Strongly Disagree

28. What is your major?
   a. Biological Sciences
   b. Business Administration
   c. Computational Biology
   d. Computer Science
   e. Information Systems
   f. Other (Please specify)

29. What is your class year?
   a. Freshman
   b. Sophomore
   c. Junior
   d. Senior
   e. Other (Please specify)

30. What is your university affiliation?
   a. CMU-Q
   b. Cross-registered from HBKU
   c. Cross-registered from another EC institution
   d. Other (Please specify)

31. What is your gender?
   a. Male
   b. Female
   c. Prefer not to answer

32. What is your nationality?
   a. Qatari
   b. Non-Qatari
   c. Prefer not to answer

33. If you would like to receive Library-branded swag for completing this survey, please copy/paste the following URL into a new browser window: [URL redacted]

   Don’t forget to complete this survey—just tick one more box, then click DONE
   a. Will do.
   b. Just did it.
   c. No, I do not want any swag.
Notes


8. Singer and Alexander, "Reading on Paper."


15. Mangen, and Schilhab, "An Embodied View."

16. Li, Gwo-Dong, and Yang, "Construction of Cognitive Maps’; Hou, Rashid, and Lee, "Cognitive Map or Medium."

17. Wästlund, "Experimental Studies."


20. McGinley, "Bookworms Return."


23. National Association of College Stores, "Highlights from Student Watch.”


25. McKenzie, "Are ETextbooks Affordable.”


