Incoming Dental Students’ Expectations and Acceptance of an Electronic Textbook Program


Abstract: Since 2005, the Louisiana State University Health Sciences Center School of Dentistry has required the VitalSource Technologies, Inc. Bookshelf as the textbook program for all dental students. In a 2008 survey, four classes of dental students expressed dissatisfaction with most features of the bookshelf. With the expectation that incoming students would be more accustomed and amenable to digital textbooks and to further determine student attitudes toward electronic textbooks, we developed two surveys for first-year dental students in the class of 2013. The sixty-five first-year students received a survey (S1) one week before they were introduced to the e-textbook program. Questions centered on their undergraduate experience with e-books and their expectations of studying with an electronic textbook collection. In the second survey (S2), sent nine months later, the questions focused on students’ opinion of the VitalSource Bookshelf. Forty-five students (69.2 percent) completed the S1 survey. Of those, thirty-six (80 percent) responded that they never used e-textbooks in college. Of the nine students who responded that they used e-books, only two liked them without reservations. The response rate to S2 increased to fifty students (77 percent). After using VitalSource for nine months, thirty-three students (66 percent) indicated a preference for reading print textbooks, compared to forty-seven students (57.3 percent) of the four classes surveyed in 2008. Although we expected incoming dental students to have had previous experience with e-textbooks, only nine students had used e-books in college courses. Few students indicated preference for e-textbooks, and over half of the group was undecided. After experience with VitalSource for first-year courses, students indicated that they like VitalSource for the ability to search for specific topics across the entire collection of dental books, but not for reading large amounts of text.

Digital textbooks in the VitalSource Bookshelf have been available to dental schools since 2000, and VitalSource has been the mandatory textbook program at the Louisiana State University Health Sciences Center School of Dentistry (LSUSD) since 2005. With the recent proliferation of electronic book readers such as Amazon’s Kindle and the Sony Reader, administrators at LSUSD expected students to be more accustomed to reading e-books for both leisure and academics. As members of the millennial generation, current dental students are more technology-savvy and connected than previous generations. These students, especially the younger members of the student group, are more engaged than older students with speaking on cell phones, texting, wireless Internet use, and social networking. The iPad, iTouch, and iPhone, the latest innovations from Apple, are platforms for e-books that should appeal to students, and various electronic textbook formats have been adapted in the classroom at all levels of education. Electronic books are often less expensive than print versions, and some publishers have developed digital textbook websites.

The VitalSource Bookshelf is a downloadable digital library with all titles on the same platform. Students require a network connection only when downloading new content or upgrading software. To increase accessibility, VitalSource recently implemented an online version and Bookshelf Noteview, an application for the iPhone. Bookshelf features include searching across all titles, highlighting and note-making, sharing notes and highlights, and copy-
The literature reports varying student attitudes toward electronic resources. Peterson et al. reported dental student preference for a digital interactive textbook over a traditional textbook. However, Shepard et al. found that 90 percent of the students in an introductory psychology course, who were given the choice of purchasing their textbook in print or electronic format, selected the print version even though the cost was twice that of the e-version. Additionally, none of the students who had used a digital text in a prior course bought the electronic book for this course. In their study, McCann et al. reported that over 60 percent of the students at Baylor College of Dentistry preferred printed textbooks over electronic books, but relied on e-resources to supplement traditional educational tools. At LSUSD, because all textbooks are electronic, student acceptance of this format is a significant factor in their educational experience. In a 2008 survey, four classes of LSUSD students expressed negative opinions about the Bookshelf and reading books online. To determine if the attitudes of younger dental students were beginning to shift in favor of e-textbooks, we surveyed a more recent class of students for this study.

**Methods**

In summer 2009, we designed a survey (S1) in SurveyMonkey and e-mailed a link to the class of sixty-five students one week before they were introduced to the e-textbook program. The survey questioned students about their attitudes and experience with digital textbooks in college. Forty-five students (69.2 percent) completed the nine-question survey. In spring 2010, we designed a second survey (S2) in SurveyMonkey and e-mailed a link to the same first-year students. The survey, consisting of seventeen questions, asked students about their use and opinion of the VitalSource digital library. The responses to S2 increased to fifty students (77 percent).

**Results**

**First Survey, July 2009**

Of the forty-five students who completed S1, thirty-six (80 percent) responded that they never used e-textbooks in college (Table 1). Nine students responded that they did use them and then answered the next five questions. Only three students indicated that the e-books were required by instructors; Internet access was the format used most often. Four students considered the e-books easy to read, while five considered the e-books difficult to read. Five students felt that the e-books were easy to search for specific topics, but four felt that searching was difficult. In response to the question “What problems did you encounter with the electronic textbooks?” five students replied that eyestrain was the predominant problem. Two students mentioned computer malfunctions, and two felt that requiring a computer was an inconvenience. Only two students liked e-books without reservations.

In response to the question “What is your opinion of using an electronic program for all textbooks?” twenty-six students (57.8 percent) were undecided, thirteen (28.9 percent) would prefer to buy printed books, and six (13.3 percent) said they were looking forward to using them. Two students commented that a combination of print and e-books would be optimal.

The last two questions asked students to list expected advantages and disadvantages of e-books. The main anticipated advantages were less weight to carry around, accessibility, less expensive, and easy searching for specific subjects (Figure 1). The main anticipated disadvantages were eyestrain and difficult to read, not being able to highlight and make notes, and fear of computer malfunctions (Figure 2).

**Second Survey, April 2010**

The response rate to S2 was slightly higher, with fifty students (77 percent) completing the questions (Table 2). For purposes of reporting the results from S2, “often” and “sometimes” were combined, as were “agree” with “strongly agree” and “disagree” with “strongly disagree.” Seventeen students (34 percent) reported using VitalSource during class lectures. Four students commented that they liked it as a reference tool, but two students said they never used the program in class because it tended to “freeze.” Twenty-six students (52 percent) responded that they used the Bookshelf to prepare for class lectures and to study for exams. Among the reasons that students gave for not using the Bookshelf were their preference for hard copy books, problems navigating the program, and eye fatigue from reading a computer screen. Forty-five students (90 percent) reported using the Bookshelf to
search for specific topics. Three students commented that they search in VitalSource only when they need references for a required assignment, but two students said that they loved the search feature.

Two questions addressed instructor integration of VitalSource into courses. Although forty-five students (90 percent) responded that instructors incorporated text and graphics into lectures or assigned readings from the digital textbooks, comments revealed that instructors in only one course actually integrated the Bookshelf into the course.

Thirty-three students (66 percent) said they preferred reading hard copy over electronic textbooks, yet only eight (16 percent) had printed out portions of the textbooks from VitalSource. One student commented that he only prints out his notes and highlights. Twenty students (40 percent) said they purchased hard copies of their textbooks.

Twenty-four students (48 percent) agreed that they had a more favorable view of VitalSource now than when they first used it; eighteen (36 percent) disagreed; and eight (16 percent) had no opinion. Three of the four comments expressed displeasure with technical shortcomings of the program. Similar responses were made to the question “Overall, I view using the Bookshelf as a positive experience.” Twenty-six students (52 percent) agreed that using VitalSource was a positive experience, while sixteen (32 percent) disagreed and eight (16 percent) had no opinion. Of the twelve comments, all indicated technical problems or dislike of reading text on the computer. In response to the statement “I need additional training to use the Bookshelf,” forty students (80 percent) answered negatively.

When asked what features of the Bookshelf they used, forty-one students (82 percent) said they searched for specific concepts, thirty-six (72 percent) highlighted text, twenty-seven (54 percent) used the page-layout feature, and twenty-six (52 percent) updated their licenses and downloaded new content. Only three (6 percent) said they shared notes and highlights, and only three viewed the tutorial.

When students were asked to list features that they like, the favorite by far was searching for specific concepts across all books in the collection. The next most popular feature was portability and accessibility followed by highlights and notes (Figure 3). Responses to the question “What features of the Bookshelf do you dislike?” echoed comments to earlier questions in this survey. As features they disliked, students listed reading on the computer, the unreliability and slowness of the program, and a weak search engine. Eight students had no complaints (Figure 4).

**Discussion**

With the rapid evolution of the electronic publishing world, readers have more choices of both content and devices. Due to the proliferation of electronic devices and compatibility of Kindle books with various devices, readers can now choose to read on an electronic book reader, a phone, an iPad, or a PC. As
Figure 1. Students’ anticipated advantages of using e-textbooks before introduction to e-book program, by number of students (N=45) responding to July 2009 survey.

Figure 2. Students’ anticipated disadvantages of using e-textbooks before introduction to e-book program, by number of students (N=45) responding to July 2009 survey.
an indication of the popularity of e-books, Amazon reported in July 2010 that sales of electronic books had surpassed hardcover book sales.\(^8\)

Students, who are now accustomed to using electronic devices, would be expected to embrace digital textbooks. Although we had expected incoming dental students to have had previous experience with e-textbooks, few students in our study indicated they used e-books in college courses. These same students have reservations about depending on the computer for access to all of their textbooks.

Responses from our incoming students mirror comments from dental students who had experienced VitalSource for one to four years, although an even larger percentage of the incoming students indicated a preference for hard copies of textbooks.\(^7\) The most common complaint was difficulty reading large amounts of text on the computer.

Although students do not enjoy reading large portions of text online, they do appreciate the search function of the Bookshelf. Electronic books on the Kindle or other devices are not searchable across titles as they are on the Bookshelf. The main advantage of the Bookshelf, then, lies in the ability to search terms across a large library of dental textbooks. Not being able to highlight and make notes, the second most prevalent concern of incoming students, is one of the stronger features of VitalSource. The program enables highlighting in numerous colors and categories as well as note-making in texts. Because students were not aware of this feature, VitalSource appears to be one of the first e-readers to offer highlighting and note-making. In S1, twenty-four students were concerned that they would not be able to highlight and make notes. In S2, only six students said the highlighting/note-making was a feature they liked in VitalSource, but four students said they still preferred to highlight and make notes in print rather than electronically.

In S1, most students thought that portability and accessibility would be the most attractive features of e-books. However, after using the program through most of their first year of dental school, student comments in S2 confirmed that the search function was their favorite feature by far. Fewer students complained in S2 than in S1 about eye fatigue although it was still the most disliked feature of digital books. In S1, nine students predicted technical problems and unreliability; in S2, nine students experienced technical problems and unreliability. The fact that twenty

| Table 2. First-year dental students’ (N=50) use of and opinions about VitalSource Bookshelf after nine months of use, by number and percentage of respondents to each question |
|--------------------------------------------------|-----------------|-----------------|-----------------|-----------------|
| 1. I use the Bookshelf during class lectures. | Often | Sometimes | Never |
| 2. I use the Bookshelf for class preparation. | Often | Sometimes | Never |
| 3. I use the Bookshelf to search for specific topics. | Often | Sometimes | Never |
| 4. I use the Bookshelf to study for quizzes and exams. | Often | Sometimes | Never |
| 5. My instructors incorporate Bookshelf references, graphics, and text into lecture presentations. | Often | Sometimes | Never |
| 6. My instructors assign readings in the Bookshelf. | Often | Sometimes | Never |
| 7. I print hard copies of assigned readings from the Bookshelf. | Often | Sometimes | Never |
| 8. I prefer reading hard copy to e-textbooks on the Bookshelf. | Strongly Agree | Agree | Disagree | Strongly Disagree | No Opinion |
| 9. I have a more favorable view of the Bookshelf now than when I first used it. | Strongly Agree | Agree | Disagree | Strongly Disagree | No Opinion |
| 10. Overall, I view using the Bookshelf as a positive experience. | Strongly Agree | Agree | Disagree | Strongly Disagree | No Opinion |

| 11. Did you purchase hard copies of any textbooks? | Yes | No |
| 12. I need additional training to use the Bookshelf. | Yes | No |
students purchased hard copies of textbooks already in the digital library suggests a strong preference for reading print texts.

VitalSource may be able to overcome student aversion to e-textbooks with a display similar to electronic book readers, such as the Kindle. Some students also indicated preference for a dual-screen device, allowing them to simultaneously view the book on one screen and a PowerPoint lecture on the other. A few students suggested returning to print books or allowing them to choose between print and digital. However, students with different textbook

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![Video](https://via.placeholder.com/150)

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Figure 3. Features of VitalSource e-books most liked by students after a year of use, by number of students (N=50) responding to April 2010 survey

Figure 4. Features of VitalSource e-books most disliked by students after a year of use, by number of students (N=50) responding to April 2010 survey
formats or without textbooks could create inconsistency in class. The pre-VitalSource experience at LSUSD proved that many students do not purchase most required textbooks.

Although LSUSD students appear to have adapted to VitalSource after experience with it for an entire academic year, numerous complaints still emerged in our study. Some shortcomings are specific to VitalSource, while others are characteristic of digital books in general. VitalSource users at other dental schools may have varying attitudes towards digital textbooks. A limitation of this study may be its focus on only one institution.

Conclusions

Despite the rapidly increasing popularity of electronic publications, exposure to electronic books is not as prevalent among undergraduate students as we had expected. Dental students who used the VitalSource Bookshelf, a digital textbook program, for nine months had mixed opinions about it. Improving the features of VitalSource and expanding delivery options could possibly lead to greater student satisfaction. Because electronic book readers are becoming more prevalent, more readable, and less expensive, VitalSource will surely adapt to evolving technology. It will be interesting to follow students through dental school to assess changes in their attitudes toward e-textbooks. Since the search function is the most popular feature, the Bookshelf may be an effective reference source for practicing dentists. Further investigation will determine if alumni who purchased the Bookshelf as dental students consider it a valuable tool for lifelong learning.

REFERENCES