A Case Study of Faculty Attitudes Related to Electronic Texts and Course Content in Business School Classrooms

Eugene L. Seeley *
Woodbury School of Business
Utah Valley University, Orem, UT, USA
Email: eugene.seeley@uvu.edu
* Corresponding author

Jared R. Chapman
Woodbury School of Business
Utah Valley University, Orem, UT, USA

Lowell M. Glenn
Woodbury School of Business
Utah Valley University, Orem, UT, USA

Lynn L. Adams
Woodbury School of Business
Utah Valley University, Orem, UT, USA

Norman S. Wright
Woodbury School of Business
Utah Valley University, Orem, UT, USA

Abstract
This case study examines faculty attitudes related to using electronic texts in business classes. The following areas of faculty opinion were evaluated: comfort level when using the technology, content quality, technical ease of use, and value added to the classroom teaching experience. The research consisted of a focus group with seven faculty members that use electronic texts and followed up with a survey that was completed by 13 faculty members among 27 that taught using electronic textbooks for their classes. Correlation was used to identify variables with strong relationships. Multiple regression was used to identify which independent variables accounted for significant levels of variance in each dependent variable and by how much. The results of the research showed that high levels of perceived quality of the electronic materials combined with a perception of a system that is easy to use were linked to high levels of faculty satisfaction. The results also indicate a preference for electronic texts that suggests a positive shift in faculty attitudes. This research indicates that the improving quality of online texts will be key to greater faculty acceptance.

Keywords: e-text; electronic text; business education; faculty attitudes

JEL Classification: I20
PsycINFO Classification: 3530; 3920
FoR Code: 1301; 1503
ERA Journal ID#: 35696
Introduction

Although much research has been conducted into student attitudes toward electronic textbooks (Buzzetto-More, Sweat-Guy, and Elobaid, 2007; McFall, 2005) less has been done to analyze faculty perceptions to this new technology. Positive student attitudes toward the classroom environment are vital to the successful student, but faculty also play an important role in selecting good course materials and in modeling behavior for students to follow (McKeachie and Svinicki, 2011).

The use of digital course materials in higher education arguably began with the replacement of overhead transparencies by PowerPoint slides in the late 1990s and early 2000s. Since that time, usage has increased rapidly to the point of being almost ubiquitous. Going beyond the enhancement of auxiliary materials, most academic publishers now offer many titles in both print and electronic versions. While some electronic versions of a text are little more than a PDF file of the printed text, other e-texts include strong ancillary materials including adaptive software to guide students through learning. Faculty have not always embraced new technologies for their classes and understanding their attitudes to the emerging technology of e-texts will be helpful as institutions begin to adopt this technology. This research was undertaken to fathom the perception of faculty as they began to implement electronic textbooks in their courses with the hope of learning what elements could lead to improved faculty acceptance of electronic materials.

Review of Literature

A 2012 literature review by Blummer and Kenton noted that research on e-textbook acquisition was limited due to limited market availability among other reasons. As a result, it may be worthwhile to briefly look at a related literature with a slightly longer and more complete history, that of e-books in general. Research has addressed several issues including the awareness and adoption of e-books in higher education without necessarily having a direct focus on e-textbooks (Martin and Quan-Hase, 2013; Cassidy et. al., 2012; Staiger, 2012; Simon, 2011). These studies generally find that while libraries have been moving towards electronic books, awareness issues remain both among students and faculty (Martin and Quan-Haase, 2013).

While awareness remains an issue, several studies cite that e-books have advantages that faculty favor such as accessibility, portability, cost, and interactivity (Cassidy et. al., 2012) which should lead to greater awareness and adoption. Those same advantages are likely to accrue to e-textbooks as well. Despite these advantages faculty and students continue to express a preference for printed books (Foote and Rupp-Serrano, 2010; Shelburne, 2009).

A clue to the reason for the continued preference of printed materials despite e-book advantages may lie in the usage of e-books. Both the faculty and student experience indicate that adopters use e-books differently than they do paper books, opting for a more consultative, reference-book approach (Staiger, 2012; Nariani, 2009). This may relate to the difficulty of reading the text on-line that many professors and students cite (Borchert et. al., 2009). In a study of historians, Martin and Quan-Haase (2013) also note the concern that such a reading of e-texts may lead to a loss of the serendipity that so often plays a role in scholarly discovery.

Moving beyond e-books, the experience of faculty with e-textbooks is limited but has been projected to grow (Killingworth and Marlow, 2011) Interestingly, South Korean government officials announce in late 2011 a goal to be able to deliver all its text
materials in digital form by the year 2015 (Eason, 2011). The promise of e-textbooks is captured by Nicholas and Lewis (2010) who list a number of advantages of e-textbooks. These factors range from potentially lower cost (Elias et. al., 2012) to convenience factors such as the ability to increase font size for those with vision issues or even audio versions of the text for those with hearing problems (Dillon, 2001). Of course, disadvantages also exist such as the need for students to have a device to read the e-text and the problems of eyestrain associated with reading on a digital screen. Additionally, faculty simply seem to be moving through a learning curve, still finding e-books difficult to use (Jackson, 2008).

The faculty experience with e-texts has been mixed. An early study (Walton, 2008) found that 92% of faculty preferred printed textbooks. A later study in a pharmaceutical school making extensive use of e-texts found a similarly high preference among faculty for printed texts over e-texts (Elias, et. al., 2012). Other research regarding implantation, however, indicates successful use of e-texts in information technology coursework (Zaitseva and Bule, 2006).

Elias et. al. in a 2012 research study went beyond mere preferences and case studies of implementation to try to understand the factors important to faculty in the e-text adoption decision. They found that several factors including the ability to search within the text, the text’s readability, and its cost were important to a faculty member’s adoption decision. They also found several other decision drivers including eyestrain, accessibility, interactive features, use beyond the semester, and highlighting and note taking functions also mattered. In a study by Petrides et. al. (2011) regarding open-textbooks in a community college setting, many of these results are confirmed and supplemented by other factors including the quality of the e-textbook and the ability of the professor to match teaching approaches with the nature of the text.

Despite the findings listed above, research on the adoption and use of e-textbooks by faculty is in its infancy.

**Research Question**

The goal of this research is to investigate faculty attitudes and experiences related to the use of electronic texts and accompanying online learning materials in university courses. This is done with the intent of understanding how to improve faculty adoption of electronic textbooks. In particular, this study seeks to learn what factors have the greatest impact on faculty attitudes toward electronic texts.

One question this study seeks to answer is how tied to printed materials faculty are. If electronic texts have positive traits, such as good quality content and ease of use, and have some benefits over printed texts, is that enough for faculty to overcome the inertia of using printed materials and embrace a new platform for texts?

Regarding faculty attitudes, the following aspects were considered: the importance of low price, the importance of students keeping a copy after the semester ends, comfort level with using electronic resources, and preference for printed vs. electronic texts. In addition, the following aspects regarding faculty experiences with e-texts and electronic materials were considered: ease of use when creating and editing assignments, ease of use when managing the course to track grades and student information, how well faculty felt they used the materials, how often faculty assigned reading and homework, perceived quality, and how useful they felt the materials were. Finally, aspects regarding the faculty perception of the student experience were investigated including: perceived preparation of students, technical difficulties for students, effectiveness of
student training on how to use the materials, and their perception of how students felt about the effectiveness of the materials.

Methods

Participants

Participants in this case study were drawn from faculty in the Utah Valley University Woodbury School of Business who were teaching one or more of 50 courses that used electronic textbooks and/or electronic course materials during the Fall 2013 semester. Course subjects included Operations Management, Human Resources, Economics, Finance, Legal Studies, Organizational Behavior, and Quantitative Analysis. Course formats included eight courses conducted online and forty-two conducted in a traditional classroom face-to-face format. Twenty-seven faculty members were asked to respond to the survey for each course they taught that used e-texts and electronic materials. Thirteen faculty members responded to the survey for a 48% response rate. 91.7% of respondents were male and 8.3% were female. 8.3% were 36-40 years old, 25% were 41-50, and 66.7% were 51 or older. 27.3% were Adjunct Faculty, 18.2% were Assistant Professors, and 54.5% were Associate Professors.

Materials

A focus group was held with seven faculty to identify important e-text issues. The focus group was moderated by two student researchers while two faculty researchers observed. The student moderators used a focus-group format that began by asking a series of broad questions and then narrowed the discussion to specific areas of interest regarding e-texts using a series of open ended questions. All comments were documented by a transcriber and a content analysis was performed to identify common themes and areas of interest and concern for participants.

Focus-group results and questions posed by the research team were used to generate a survey investigating the faculty members’ experience and attitudes concerning e-texts and electronic materials used in their classes. Constructs investigated included frequency of online assignments, usefulness of materials, importance of low price, importance of students keeping the text, perceived quality of materials, comfort with technology, perceived effectiveness of materials, perceived effectiveness of their preparation and the preparation of the students, and ease of use of the e-text technology. The survey was administered online using Qualtrics, an online assessment tool. Participants were sent a link by email and given instructions to fill out the online version of the survey. The questions were presented on a five-point Likert-type scale, and these questions can be found in Appendix A. The Likert-type scale is a common tool used in research that makes use of questionnaires (Boone & Boone, 2012; McDonnell, 2014; Tomko, 2013).

Design

Independent variables included the frequency of technical issues, the importance of low price, quality, ease of use, ease of creating assignments, and whether or not faculty felt it was important for students to keep a copy of the book. Dependent variables included how useful faculty felt the e-text and materials were, how effective they felt they were, their perception of how effective students felt they were, how prepared they felt students were for class, how effective they felt they used the materials, how comfortable they were with using electronic materials, and their preference level for printed vs. electronic texts. Correlation was used to identify variables with strong
relationships. Multiple regression was used to identify which independent variables accounted for significant levels of variance in each dependent variable and by how much. This combination is often used to determine causal relations among variables. (Allison, 1999; McDonnall, 2014;)

**Findings**

**Faculty attitudes**

When asked if it was important to faculty members that the price of course materials and books be low, 84.6% of faculty responded that it was at least somewhat important. When asked whether it was important that students have an option to keep the book, the faculty response was fairly neutral with an average score of 3.33 out of 5 with 1 being not important and 5 being very important. All faculty participants rated their comfort level with using electronic resources between somewhat and very comfortable, a rating of three out of five with five being very comfortable. Finally, when asked if they would prefer printed or electronic materials in the future, 61.5% of respondents stated they would prefer electronic materials, 15.4% stated they would prefer printed materials, and 23.1% responded neutral.

**Faculty experience**

Faculty respondents rated the ease of making assignments on the e-text platform relatively high with 76.9% rating the process moderate to easy. One respondent commented, “Makes it very easy to make assignments and to grade them,” while another commented, “…being able to assign complex homework problems from algorithmically-generated questions was the best part of the system.” However, faculty experience of using the course management aspects of the system like the gradebook and accessing student information varied widely with an average of 3 out of 5 and a standard deviation of 1.41 (see Figure 1). Twelve out of thirteen respondents (92.3%) responded that the electronic course materials were useful. Eleven respondents rated the quality of the materials to be moderate to excellent, and ratings were consistent among classes. Materials used for one management class received consistently high quality ratings, while a specific finance class received consistently low quality ratings. In addition, all respondents felt they were effective in their use of the e-materials with an average score of 4.15.
Figure 1
Faculty experience with ‘the ease of use using course management tools like the gradebook and accessing student information’ varied widely

Facility perception of the student experience

Eleven of the thirteen respondents thought their students were more prepared using the electronic text and course materials than previous classes that used printed text. When asked what they liked most about the e-text and course materials, one respondent said, “Students came better prepared to class after doing LearnSmart assignments.” Regarding technical issues for students, 69.2% of faculty responded that students had technical difficulties less than once a week. Faculty regarded the materials provided to train students how to use the e-texts and electronic learning materials as neutral with an average score of 3.1 out of 5. Finally, faculty perception of how students viewed the effectiveness of the electronic materials was slightly positive with an average score of 3.58 out of 5.

Correlations

A number of strong correlations between variables were found (see Table 1). However, these relationships were typically intuitive and none were contrary to what one would expected to find. For example, ‘how useful the faculty thought the e-text and course materials were’ was highly correlated with ‘their future preference for printed or electronic materials’ (.714), ‘how effective they thought they used the materials’ (.645), ‘the quality of the materials’ (.852), ‘student preparedness’ (.663), and ‘student perception of e-text and course material effectiveness (.805). Another high correlation worth mentioning is between ‘the ease of making an assignment’ and ‘their future preference of printed or electronic materials’ (.609).
Table 1
Correlation matrix for study variables

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Printed Vs. Electronic</td>
<td>1.00</td>
<td>-0.71</td>
<td>-0.68</td>
<td>-0.55</td>
<td>-0.65</td>
<td>0.47</td>
</tr>
<tr>
<td>How Effective</td>
<td>-0.71</td>
<td>1.00</td>
<td>0.87</td>
<td>0.79</td>
<td>0.85</td>
<td>0.65</td>
</tr>
<tr>
<td>Technical Issues</td>
<td>-0.68</td>
<td>0.87</td>
<td>1.00</td>
<td>0.63</td>
<td>0.80</td>
<td>0.65</td>
</tr>
<tr>
<td>How Comfortable</td>
<td>-0.55</td>
<td>0.79</td>
<td>0.63</td>
<td>1.00</td>
<td>0.73</td>
<td>0.60</td>
</tr>
<tr>
<td>Quality</td>
<td>-0.65</td>
<td>0.85</td>
<td>0.80</td>
<td>1.00</td>
<td>0.73</td>
<td>0.60</td>
</tr>
<tr>
<td>How Easy Use</td>
<td>0.65</td>
<td>-0.67</td>
<td>-0.66</td>
<td>-0.49</td>
<td>-0.35</td>
<td>1.00</td>
</tr>
<tr>
<td>How Comfortable</td>
<td>-0.63</td>
<td>0.66</td>
<td>0.37</td>
<td>0.69</td>
<td>-0.58</td>
<td>0.64</td>
</tr>
<tr>
<td>Faculty Percept Effective</td>
<td>-0.75</td>
<td>0.65</td>
<td>0.47</td>
<td>0.60</td>
<td>0.55</td>
<td>0.65</td>
</tr>
<tr>
<td>Keep Book</td>
<td>0.48</td>
<td>-0.44</td>
<td>-0.74</td>
<td>-0.05</td>
<td>-0.42</td>
<td>0.38</td>
</tr>
<tr>
<td>Comfortable</td>
<td>-0.76</td>
<td>0.35</td>
<td>0.40</td>
<td>-0.01</td>
<td>0.27</td>
<td>-0.39</td>
</tr>
<tr>
<td>How Easy Assignment</td>
<td>0.61</td>
<td>-0.39</td>
<td>-0.54</td>
<td>-0.30</td>
<td>-0.40</td>
<td>0.43</td>
</tr>
<tr>
<td>Price</td>
<td>-0.21</td>
<td>0.07</td>
<td>0.41</td>
<td>-0.12</td>
<td>0.23</td>
<td>-0.34</td>
</tr>
<tr>
<td>How Often Math</td>
<td>0.47</td>
<td>-0.08</td>
<td>0.04</td>
<td>-0.33</td>
<td>-0.02</td>
<td>0.14</td>
</tr>
<tr>
<td>How Often EText</td>
<td>-0.37</td>
<td>0.17</td>
<td>0.00</td>
<td>-0.35</td>
<td>-0.21</td>
<td>-0.39</td>
</tr>
<tr>
<td>Gender</td>
<td>-0.25</td>
<td>0.08</td>
<td>-0.02</td>
<td>-0.23</td>
<td>0.08</td>
<td>0.20</td>
</tr>
<tr>
<td>Status</td>
<td>-0.23</td>
<td>0.27</td>
<td>0.18</td>
<td>0.18</td>
<td>0.06</td>
<td>-0.57</td>
</tr>
<tr>
<td>Age</td>
<td>0.14</td>
<td>0.03</td>
<td>-0.36</td>
<td>-0.36</td>
<td>0.04</td>
<td>0.29</td>
</tr>
</tbody>
</table>

Multiple regression

Six dependent variables were chosen: how useful faculty felt the e-text and materials, how effective they felt they were, their perception of how effective students felt the electronic materials were, how prepared they felt students were for class, how effective faculty felt they used the materials, how comfortable they were with using electronic materials, and their preference level for printed vs. electronic texts. It was felt that positive responses in these variables would indicate that the e-texts and electronic course materials were successful and worth pursuing. The following six independent variables were also selected: the frequency of technical issues, importance of low price, quality, ease of use, ease of creating assignments, and whether or not faculty felt it was important for students to keep a copy of the book. It was hoped that by analyzing the relationships between the dependent variables and independent variables, the researchers might identify the most effective independent variables for influencing the dependent variables, or positive outcomes of the e-text implementation. The significant results for a multiple regression for each dependent variable are summarized in Table 2. All of the dependent variables had a significant $R^2$ value except faculty perception of effectiveness. The independent variable ‘quality’ (quality) explained the most variability in dependent variables followed by ‘how easy were course management tools to use’ (howEasyUse). ‘How easy to create assignments’ (howEasyCreateAssignment) explained a significant amount of the variability in ‘how comfortable faculty were using electronic resources’ (comfortable) and ‘how important is it that students keep a copy of the textbook’ (keep book) explained a significant amount of the variability in ‘faculty’s perception of how prepared students were for class’. 
Table 2
Summary of multiple regression for study variables. Dependent variables are listed vertically, independent variables are listed horizontally.

<table>
<thead>
<tr>
<th></th>
<th>Quality</th>
<th>How Easy Use</th>
<th>How Easy to create assignment</th>
<th>Keep Book</th>
<th>Adj. R-Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>How Useful</td>
<td>0.71</td>
<td>-0.42</td>
<td></td>
<td></td>
<td>0.87</td>
</tr>
<tr>
<td>Student Preparation</td>
<td>0.52</td>
<td>-0.87</td>
<td>0.82</td>
<td>0.77</td>
<td></td>
</tr>
<tr>
<td>Printed vs. Electronic</td>
<td>-0.47</td>
<td>0.49</td>
<td></td>
<td>0.62</td>
<td></td>
</tr>
<tr>
<td>Student Perception Effective</td>
<td>0.87</td>
<td></td>
<td></td>
<td></td>
<td>0.73</td>
</tr>
<tr>
<td>Comfortable</td>
<td></td>
<td></td>
<td>-0.74</td>
<td>0.5</td>
<td></td>
</tr>
</tbody>
</table>

Discussion

One issue the study sought to assess was faculty view toward the electronic texts, which were introduced in their classes. The faculty perception of the usefulness and effectiveness of the electronic materials was largely positive, both receiving an average score of 4.15 out of 5, and they expressed a high degree of comfort with using the electronic materials, 4.53 out of 5. This finding together with the 61.5% indicating a preference for e-texts suggest a shift in faculty perception to be more positive toward e-texts than was indicated in the studies completed by Walton (2008) and Elias et. al. (2012), and may represent the dawn of electronic texts becoming the new norm for classrooms.

All other relevant variables averaged near neutral scores, with most scoring slightly above neutral. However, many variables included a large degree of variability. Frequently when some of the participants scored items very high, a roughly equal number of participants scored them very low. This variability in responses indicates that participants are having a wide range of experiences. In the future, care will need to be taken to understand what is causing negative experiences and ensure that steps are taken to prevent them.

In an applied case study like this one, one of the goals is to identify the overall success of the program and make actionable recommendations. In general, the overall outcome of the e-text implementation was mildly positive from the faculty point-of-view. Understanding which variables affect positive faculty perception is another important finding of this case study. Multiple regression results indicate that the most important factors for predicting positive e-text outcomes are 1) the perceived quality of the materials and 2) how easy it is to use the course system to both manage student data and create and edit assignments. This is important feedback to e-text publishers. This case study indicates that work publishers do to improve in these areas will directly
translate into improved faculty perceptions. It is hoped that improving in these areas will reduce the variability in faculty experiences and result in an overall more positive faculty experience.

Limitations

While a sample size of 13 is typically considered small, in this case study it represents nearly half of the population of one of the largest e-text implementations in the literature. 13 participating faculty may often exceed the typical number of e-text adoptions at many colleges and universities. For these reasons, we feel that our sample is useful for identifying trends in the feelings and perceptions of faculty. At the same time, the small number does allow for the potential for bias and future studies will need to be undertaken to confirm and extend our findings.

Conclusions

The use of electronic texts in the classroom has many potential benefits for both students and faculty, but study shows that it must be carefully planned and implemented. The study indicates that a key aspect of the implementation of electronic texts is setting aside sufficient time for proper training and preparation of faculty, so that they are comfortable using the electronic material. Their acceptance and mastery of the electronic materials will improve the successful implementation of e-texts in the classroom. It is also important to allow time for coordinating with various departments involved in the implementation process.

As programmers and engineers work to improve software that provides e-textbooks and the hardware used to view them, we expect to see many of the problems and concerns fade away. With greater experience with electronic media, faculty will likely become more comfortable with e-texts independent of their technical improvements. As the classroom experience improves and faculty become more comfortable using e-text and helping students, we will see their use expand until they become the norm in the classroom.
References


McFall, R. (2005). Electronic textbooks that transform how textbooks are used. The Electronic Library, 23 (1), 72-81.


Appendix A

Faculty survey questions asked to explore attitudes and experience with using e-text.

1. Choose the course you are responding about in this survey. Please submit a different survey for each course number you taught.
2. What was the format for this course? (Face-to-face, Hybrid, Online)
3. Which of the following electronic course materials did you assign for your class? (Select all that apply)
   a. Electronic text
   b. Pre-quizzes, flash cards, structured reading (LearnSmart)
   c. Math Tutor Software
4. How often did you assign reading from the electronic text?
5. How often did you assign learning activities from LearnSmart or the math tutor software?
6. How useful were the electronic course materials to your instruction for this course?
7. How important is it to you that the price of the student books be low?
8. How important is it to you that your students have an option to keep a copy of the textbook once the semester ends?
9. How would you rate the quality of the electronic materials?
10. How comfortable are you with using electronic resources in your class?
11. Given your experience this past semester, would you prefer electronic or printed textbooks in the future?
12. Compared to classes that use traditional paper textbooks, were your students better or worse prepared for class each week using the electronic text and course materials?
13. What is your age?
14. What is your faculty status?
15. What is your gender?
16. How effectively do you think you used the electronic textbook and course materials?
17. How effective do you think your students perceived the electronic textbook and course materials were?
18. How easy was it for you to use the publisher's system to manage the course (e.g., track grades and other student information)?
19. How often did students encounter technical issues with the online content?
20. How easy was it to create and grade assignments using the online system?
21. In your opinion, for students, how effective were the online training materials about how to use the course?
22. What did you like most about the electronic textbook and course materials?
23. What did you like least about the electronic textbook and course materials?
24. What suggestions do you have for improving the experience with these electronic materials?