Understanding What Higher Education Needs from E-Textbooks: An EDUCAUSE/Internet2 Pilot
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Citation


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Executive Summary and Key Findings

Pilot Structure

- Twenty-three colleges and universities collaborated with Internet2, EDUCAUSE, the publisher McGraw-Hill, and the e-textbook platform provider Courseload to deliver digital versions of textbooks to over 5,000 students and faculty in 393 undergraduate and graduate courses with a median class size of 28.
- Senior-most executives (CIOs, provosts, head librarians) sponsored the pilot in all but three institutions. Many different units helped to coordinate and execute the pilot, which required collaboration among IT (including academic computing), the bookstore, the library, disability services, enrollment management, and the general counsel.
- Pilot coordinators felt the pilot's strengths were (1) its structure (a relatively low-cost, research-based, controlled pilot), (2) Internet2's centralized and coordinated negotiating and demand aggregation, and (3) the cross-institutional collaboration and teamwork.

Pilot Outcomes

- Faculty and/or teaching assistants and students in every course viewed the e-textbooks. Students in almost all courses (96%) used at least one special feature (highlights, sticky notes annotations, or bookmarks); faculty and/or teaching assistants used at least one feature in 57% of courses. Each specific feature was used by faculty and/or teaching assistants in only 27–35% of courses.
- The majority of students reported that using e-textbooks did not change their reading habits or studying. Less than one-third of students felt that e-textbooks improved their studying, learning, or engagement in the course “quite a bit” or “a great deal.” At least 40% of students reported that e-textbooks had little or no effect on their studying, learning, or engagement.
- Faculty struggled to find the time and support to effectively adopt e-textbooks, and many expressed a lack of motivation to invest time in a pilot that they would lose access to after the pilot's end. In general, less than half the faculty incorporated the e-textbooks into their teaching, and only 40% of students reported receiving an in-class orientation.
- Instructors’ adoption of e-textbooks is a key influencer of students’ experiences. In courses where faculty engaged with the e-textbooks, more students reported positive learning outcomes.
- Faculty were critical of e-textbooks when their students experienced difficulties with them. Faculty who were supporters based their assessment of the e-textbook on their own experiences and its impact on their ability to teach more effectively.
Faculty and students were both clear and consistent in their criteria for adopting digital course materials. In order of decreasing importance, they are cost, availability, portability, functionality, and innovation.

Cost savings

- Institutional pilot coordinators were cautious about whether widespread implementation of this model of an independent e-reader platform solution delivering publisher content would generate savings for students.
- Institutional costs to implement this model were predicted to increase over current costs due to such factors as digital content subscriptions, the cost of changing institutional processes, and managing disability issues.

Students appreciated the greater portability of e-textbooks and the fact that their textbooks were more conveniently available. However, students’ frustrations using their devices to access e-textbooks outweighed their appreciation. The segregation of content in a textbook platform system from the learning management system as well as from students’ primary devices was inconvenient and frustrating to many students.

Recommendations

- Initiatives to bring e-textbooks to students must offer significantly lower costs than traditional textbooks, provide paper text options, and give access to the e-textbooks beyond the end of the course.
- In addition to focusing on reformulating an existing model of publisher-provided content for electronic media, higher education would be wise to expand explorations to new forms of content and new models of content delivery.
- Continued professional development is needed to help faculty explore new approaches to pedagogy through the use of e-textbooks with advanced functionality, such as collaborative tools or interactive or multimedia content.
- The usability of e-textbooks and associated technologies (such as delivery platforms and personal devices) should continue to evolve to meet the expectations of faculty and students.
- While IT clearly has a role to play to support, deliver, and help design new methods of providing digital course materials, it must collaborate and co-lead with many other groups. Each institution has a different culture and a different set of strategic priorities that will influence its e-materials strategy, projects, and services, but all will need to work across multiple areas.
- Any exploration in the area of digital course materials must not just involve faculty but also empower and incentivize them.
Introduction

Twenty-three colleges and universities collaborated with Internet2, EDUCAUSE, the publisher McGraw-Hill, and the e-textbook platform provider Courseload to deliver digital versions of textbooks to over 5,000 students and faculty in 393 undergraduate and graduate courses with a median class size of 28. The pilot shed light not just on the usability of McGraw-Hill textbooks in Courseload but more broadly on the value of digital materials in higher education at this time.

The pilot included two partially overlapping studies: a “baseline” study that focused broadly on usability, adoption, and impact, and a study whose specific target was the impact of e-textbooks on teaching and learning. Four institutions participated in both studies. In addition to the quantitative and qualitative data from the baseline and teaching and learning studies, student and faculty e-textbook usage data were provided by Courseload for each course. Table 1 summarizes the data sources.

Table 1. Data Sources

<table>
<thead>
<tr>
<th>Baseline Study</th>
<th>Teaching and Learning Study</th>
<th>Usage Data</th>
<th>Pilot Implementation Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>21 institutions</td>
<td>7 institutions</td>
<td>393 courses</td>
<td>17 institutions</td>
</tr>
<tr>
<td>5,388 students</td>
<td>1,752 students</td>
<td></td>
<td></td>
</tr>
<tr>
<td>~100 faculty</td>
<td>45 faculty surveyed plus additional faculty interviewed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student survey</td>
<td>Student survey</td>
<td>Counts of students’ page views and features used, by course</td>
<td>Pilot coordinator survey</td>
</tr>
<tr>
<td>Faculty survey or interviews or focus groups</td>
<td>Faculty survey (n = 45 from four institutions) or interviews or focus groups</td>
<td>Counts of faculty and teaching assistant (combined) page views and features used, by course</td>
<td></td>
</tr>
</tbody>
</table>
What Does It Take to Pilot E-Textbooks?

The Nature of the Pilot

The pilot involved benefits and limitations that would not apply to a more widespread adoption of e-textbooks. Each institution paid a fee to Internet2 to participate in the pilot, and each chose not to pass those costs on to students or faculty. In exchange for this fee, digital versions of McGraw-Hill textbooks were provided at no cost to all students, faculty, and teaching assistants in the 393 pilot courses. Also, access to the e-textbooks expired at the end of the pilot. By contrast, in a production e-textbook service, a sustainable funding model would almost certainly pass some fees on to students, and ideally both students and faculty would retain access to the texts after the course.

In other respects, though, the pilot illustrated the complexity of changing the textbook delivery and access model.

Many Stakeholders

The pilot institutions took this initiative seriously: Senior-most executives (CIOs, provosts, head librarians) sponsored the pilot in all but three institutions. The CIO was most often the sponsor, with the provost, head librarian, and lead for academic technologies equally often the second most common sponsors. Executives shared sponsorship at several institutions. The day-to-day manager of the pilot was an instructional designer/other academic technologies staff (at seven institutions), librarian (six), or the head of academic technologies (five). One pilot manager was from the institution’s project management office.

Many different units helped coordinate and execute the pilot (see Figure 1), which required collaboration among IT (including academic computing), the bookstore, the library, disability services, enrollment management, and the general counsel.
Students
[advisory committee]
Infrastructure
Communications, public relations office
Learning center
Institutional research
Registrar/enrollment management
Academic leadership
Administrative leadership
Instructional designers/
Educational technologies
Academic computing
General counsel
Bookstore
Disability services
IT support
Library

0% 25 50 75
PERCENTAGE

Source: Institutional survey, n = 17

Figure 1. Units Involved in the E-Textbook Pilot

Selecting Faculty

Selecting faculty to participate in the pilot was moderately challenging. Only those teaching with McGraw-Hill textbooks were eligible, which limited recruitment options. Institutions' other primary criteria tended to be faculty who were interested in emerging technologies in general and e-texts in particular and those who collectively constituted a blend of course types. Most institutions used multiple criteria (five on average) for selecting faculty (see Figure 2).
Figure 2. Criteria Used for Selecting Pilot Faculty

About half of institutions reported that it was generally easy to find interested faculty, but 38% had difficulty finding interested faculty. The main barriers were structural (the restriction of the pilot to McGraw-Hill textbooks, a balance of courses). Some invited faculty declined to participate for a variety of reasons:

- Doubt about e-text readiness (41%)
- Too busy (35%)
- Doubt about e-text usefulness (29%)
- Discomfort with technology (24%)
- Doubt this would apply to their course(s) (18%)
- Doubt that students would benefit (12%)
The Special Role of the Bookstore

Bookstores, the traditional purveyors of textbooks, played a crucial role in the pilot, which illustrates the ongoing role this important campus resource will play in the transition from paper to digital course materials. In the 76% of pilot institutions that involved their bookstores, the bookstore provided the following support:

- Was consulted about the evaluation .............................................................. 61%
- Managed implications for hardcover books (reduced inventory, backroom supply for students wishing to opt out, etc.) .............................................................. 61%
- Helped with faculty recruiting .............................................................. 44%
- Assisted with specific communications (e.g., signage on bookshelves for participating pilot classes notifying students of the free e-text) .............................................................. 39%
- Developed and honored a refund policy for students who had already purchased a textbook .............................................................. 33%
- Assisted with faculty and student awareness ........................................................ 28%
- Helped design/oversee the evaluation .............................................................. 11%
- Advised on how to make the e-text acquisition process easy for faculty and student participants .............................................................. 11%
- Managed logistics with publishers .............................................................. 6%
- Acquired e-text usage data .............................................................. 6%

Change Management 101

All the usual rules of successful change management applied to these pilots: Involve stakeholders, get executive support, provide ongoing communications and support to get buy-in, maintain momentum, and help constituents successfully navigate the change. Pilot institutions did all this and more. Communications plans included sharing information with pilot participants, the institutional community, and external audiences. Faculty received the most support and were generally relied on to support their students, although some institutions provided direct support to students.

Appendix A provides detailed information about the pilot institutions and courses and the structure of institutions’ pilots.
What Is the Value of E-Textbooks?

Faculty and students were both clear and consistent in their criteria for moving to digital course materials: Address the basics, and move up the value chain from there (see Figure 3).

Cost is the primary motivation for moving from paper textbooks to digital versions. It was faculty’s top reason for participating in the pilot and students’ top criterion for an e-textbook. The pilot was successful in part because it saved each participating student the cost of a textbook, or an average of $138.1

Figure 3. What Students and Faculty Value in E-Textbooks

Cost is the primary motivation for moving from paper textbooks to digital versions. It was faculty’s top reason for participating in the pilot and students’ top criterion for an e-textbook. The pilot was successful in part because it saved each participating student the cost of a textbook, or an average of $138.1.
Students’ Motivations for Adopting E-Textbooks

When asked in the baseline study to rate the importance of specific features in future decisions to purchase e-textbooks, cost was students’ top criterion, followed by portability and access to the text without an Internet connection (see Figure 4).

The e-textbook ...

<table>
<thead>
<tr>
<th>Feature</th>
<th>Percentage of students who responded “extremely” or “quite a bit”</th>
</tr>
</thead>
<tbody>
<tr>
<td>costs less than a used or rented traditional textbook</td>
<td>75%</td>
</tr>
<tr>
<td>is more portable than traditional textbooks</td>
<td>60%</td>
</tr>
<tr>
<td>is accessible without an Internet connection</td>
<td>55%</td>
</tr>
<tr>
<td>is more environmentally friendly than traditional textbooks</td>
<td>48%</td>
</tr>
<tr>
<td>is available for my entire academic career, not only for one semester</td>
<td>44%</td>
</tr>
<tr>
<td>is readable on tablets</td>
<td>45%</td>
</tr>
<tr>
<td>is readable on a handheld mobile devices</td>
<td>41%</td>
</tr>
<tr>
<td>includes bonus material</td>
<td>41%</td>
</tr>
<tr>
<td>permits me to share notes or questions with the professor and other students</td>
<td>38%</td>
</tr>
</tbody>
</table>

AVERAGE RATING

Source: Student survey, n = ~5,388

Figure 4. Importance of Specific E-Textbook Features for Purchasing Decisions

Many students and some faculty were also concerned about the costs to the environment. Environmental factors were students’ next most important motivator for purchasing e-textbooks, and a few faculty mentioned environmental concerns in faculty interviews.

A variety of compatibility issues came next. Students’ frame of reference for e-books comes from those available on their iPads and Kindles and, for some, smartphones. Even students who don’t own tablets or e-readers (the majority) take their cues from them and expect e-textbooks to conform. Content on e-readers and tablets is notable for its readability of text, searchability, permanent ownership, portability, availability without an Internet connection, and common interface for many kinds of content. Students’ other frame of reference is the paper book, with its readability, ability to view two pages at once, permanent ownership, and availability without an Internet connection.
Faculty Perspectives Mirror Those of Students

Faculty’s primary motivation for piloting e-textbooks was to help their students. Their secondary motivations were curiosity and the opportunity to innovate. Faculty interviewed in the baseline study most often said their initial motivation for participation was lowering students’ costs (44% of responses), with another 20% citing curiosity or the opportunity to innovate. Only 11% of comments indicated a hope that e-textbooks would improve their teaching outcomes. A few (4%) were motivated by environmental concerns.

Approximately 100 faculty were interviewed in the baseline study. They were asked to identify criteria for their institution’s e-textbook strategy from among three options:

1. Reducing the cost of textbooks by promoting adoption of e-textbooks and attaching a mandatory materials fee (to cover the cost of the digital text) to courses using e-textbooks
2. Promoting student choice and flexibility by encouraging instructors to offer a variety of digital and print options for acquiring learning materials
3. Exploring new approaches to pedagogy through the use of e-textbooks with advanced functionality, such as collaborative tools or interactive or multimedia content

They were evenly split in preferring the first two options three to one over the third option (see Figure 5). Some faculty qualified their preference for the first option due to concern about a new mandatory materials fee. Others observed that it is important to lower the barriers to student access to course materials; when they are expensive, students forego them. For now, at least, faculty most value e-textbooks as a way to help make higher education more affordable and convenient.

“Cost savings to students is the most important. The content of these textbooks they could get off Wikipedia. What they get for their money is not the content, but expert content organization and presentation. That still makes sense to do—but the information is out there. This means to me that something has to change in the pricing model. Students will stop buying the textbook.”

—Faculty member

Figure 5. Faculty Criteria for Their Institution’s E-Textbook Strategy
Students and Faculty E-Textbook Experiences

Use of E-Textbooks

Faculty and/or teaching assistants and students in every course viewed the e-textbooks. Very few e-textbook pages were viewed offline. According to the Courseload usage data, students viewed a median of 160 pages, and faculty or teaching assistants, 30 pages. The e-textbooks also enabled students and faculty to add bookmarks, highlights, sticky notes, and annotations. Students in almost all courses (96%) used at least one of these features; faculty, including teaching assistants, used at least one feature in 57% of courses. Each specific feature was used by faculty and/or teaching assistants in 27–35% of courses. Students were most likely to bookmark or highlight and least likely to annotate their e-textbooks (see Figure 6).

![Figure 6. E-Textbook Feature Usage by Course](image)

Impact on Studying and Learning

Almost half (48%) of students in the teaching and learning survey noticed no change in the amount they read. Although 16% of students reported that they read more with e-textbooks than paper textbooks, significantly more (37%) reported that they read less. Most students (71%) perceived no benefit of e-textbooks versus paper textbooks in making difficult concepts more understandable. Those who did perceive a benefit of one format over another were more likely to give the edge to e-textbooks (see Figure 7).
The baseline study showed that students’ prevalent positive impressions of e-textbooks were that Courseload was easy to use, that their instructors encouraged use of e-textbook special features, and that those special features were not distracting. Less than one-third of students felt that e-textbooks did “a great deal” or “quite a bit” (or “agreed” or “strongly agreed,” depending on the questions’ wording) to improve their studying, learning, or engagement in the course (see Figures 8–10).

Figure 7. Impact of E-Textbooks on Studying

Figure 8. Student Impressions of E-Textbooks
The instructor encouraged the use of the annotation, highlighting, and note-sharing features of the e-text(s) throughout the course.

Using e-text(s) has become part of my learning routine.

Using the e-text(s) the first few times was difficult for me.

The annotation/collaborative features in the e-text(s) were distracting.

I learned more from using the e-text(s) with highlighting and/or annotations (mine and others’) compared to what I normally learn from paper textbooks.

I read more of the assigned material than I would have if it were a paper textbook.

I highlighted and/or annotated more than I normally do with paper textbooks.

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**Figure 9. Student Experiences with E-Textbooks**

**Figure 10. Usefulness to Students of E-Textbook Features**
At least 40% of students reported that e-textbooks made little or no improvements in their studying, learning, or engagement in the course. Due to the wording of the rating scales, it was difficult to gauge whether those students felt neutral or felt negatively about e-textbooks. To gain insight into their feelings about e-textbooks, we examined their patterns of comments, classifying comments as positive, negative, or neither. Following are two examples of positive comments:

- I definitely enjoy using the e-text, and would highly recommend it over a regular printed textbook. It’s overall easier to work with and nice to take with me (much more portable than a heavy book) on my iPad or laptop.
- It is ok to use this e-text. I like it.

Negative items included comments such as these:

- Personally, the e-text didn't benefit me at all. I found it difficult to study and read.
- It's annoying. I find myself NOT doing the reading because of how long it takes to pull it up on the slow Internet here. Flipping through pages is extremely distracting, as I have to wait for a page to load. Sometimes the figures referenced are on a different page than the text, so flipping between the two gets extremely frustrating. I prefer real books, but if the navigation issues could be fixed, and the book could be downloaded to escape the Internet dependency, then maybe I could learn to appreciate an e-text.

If the 40% or more of students using the “a little” or “not at all” ratings were neutral, they would likely not make a great deal of negative comments. We found that 86% of the comments made by students using the “a little” or “not at all” ratings were negative, and their rate of positive comments was one-third that of students using “quite a bit” or “a great deal” ratings (see Table 2).

Table 2. Relationship between Comments and Ratings

<table>
<thead>
<tr>
<th>Ratings of “not at all” or “a little” (40% or more of ratings)</th>
<th>Percentage of comments that were negative</th>
<th>Percentage of comments that were positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>86%</td>
<td>14%</td>
<td></td>
</tr>
<tr>
<td>Ratings of “a great deal/extremely” or “quite a bit” (33% or less of ratings)</td>
<td>54%</td>
<td>46%</td>
</tr>
<tr>
<td>All ratings</td>
<td>75%</td>
<td>25%</td>
</tr>
</tbody>
</table>
Adherents and Detractors

Individual students were classified as negative, neutral, or positive about e-textbooks based on their patterns of responses to 11 baseline survey questions about the impact of e-textbooks. The three groups had equal numbers of students (see Figure 11).

We don’t know whether these students had previous e-text experiences that might have influenced or prepared them, but adherents were more likely to plan to purchase e-texts over paper texts in the future.

Adherents were also more likely to have found the instructor’s highlights, annotations, and other additions to the e-text useful. They also had less initial trouble using the e-textbook (see Figure 12).

Figure 11. E-Textbook Adherents and Detractors

Figure 12. Differences between E-Textbook Adherents and Detractors
If adherents have more positive experiences with e-textbooks, and those experiences include finding instructors’ contributions more useful and having little difficulty using Courseload or the e-textbooks, it is possible that instructors were influencing students’ experiences. We found that some courses had more than their share of adherents and some had more than their share of detractors (see Figure 13), suggesting that instructors’ adoption of e-textbooks is a key influencer of students’ experiences.

Reinforcing these findings, students in the baseline study who found their instructors’ annotations, highlights, and added e-text materials useful or whose instructors encouraged use of the e-textbooks were significantly more likely to report that the e-textbooks helped them better understand the course ideas and concepts, allowed them to better organize and structure their learning, increased their engagement with course content, and made their study time more efficient. They also reported that using e-textbooks had become part of their learning routine, that they learned more from using the e-textbooks than from paper textbooks, and that they planned to purchase e-textbooks over traditional textbooks in the future.

Figure 13. Distribution of Detractors and Adherents in Pilot Courses
Impact on Teaching

Faculty Use of Technology Matters

According to the 2012 ECAR study of undergraduate students and technology, two-thirds of students believe that technology in general elevates the level of teaching. The same proportion also reported that most or all of their instructors have adequate technology skills, have used technology to aid understanding of course materials, use the “right kinds” of technology, and use technology effectively. Faculty are key to the meaningful use of technology in higher education.

Faculty Introductions to E-Textbooks Differed

According to the teaching and learning study, most faculty provided some sort of introduction to the e-textbook. That introduction varied, with 40% of students in the teaching and learning study receiving an in-class orientation. About half the students reported that their instructors posted an introduction to the e-textbook in the LMS or posted assigned e-textbook readings in the syllabus. Seven percent indicated in write-in responses that the instructor suggested they use the online e-textbook tutorials (see Figure 14).

Sources: Faculty (n = 45) and student (n = ~1,752) teaching and learning surveys

Figure 14. How Instructors Helped Students Use E-Textbooks
Faculty Use of E-Textbooks Varied

Adoption of the pilot e-textbooks had consequences: The majority of faculty and students (~70%) in the teaching and learning study agreed that reading the textbook was important to successful completion of the course. However, in general less than half the faculty incorporated the e-textbooks into their teaching (see Figure 15). This finding most likely mirrors how textbooks are often used (i.e., as material that faculty expect students to independently read prior to class) and not as a result of difficulties experienced in using the e-textbook interface: Most faculty found the e-textbooks easy to learn and use. Only 11% had complaints; many of the complaints were about needing to change course materials or having insufficient time to prepare.

Only about 40% of instructors in the teaching and learning study reported adding annotations or highlights to the e-textbook or encouraging their students to use those or note-sharing features of the e-text. Therefore it’s not surprising that students’ ratings of the usefulness of their instructors’ highlights or annotations (31%) and the material the instructor added to the e-text (30%) mirror the engagement of faculty with the e-textbook. In fact, if all instructors had themselves used annotations and/or highlights, it is possible that almost three-quarters of students might have found them useful.

“I always annotate and highlight important sections of the text. Students respond well to guidance. It virtually eliminates the possibility that the student will study the wrong material.”
—Faculty member

“I didn’t use these features: (1) I don’t want to have to check the book for questions from students; (2) book is a resource—class not taught right from the text; (3) I did not like the sharing of annotations between students—one student could do much of the study guide and make it available to the whole class, decreasing effort/learning of others.”
—Faculty member

Figure 15. How Instructors Used E-Textbooks
About half the instructors incorporated the e-textbooks into assignments, projects, or class discussions and less than 20% into group or team activities, but it’s unknown how many of the courses had group or team activities.

When faculty were asked to describe how they changed their teaching as a result of using an e-textbook, they mentioned having more time to discuss different approaches to the material or emphasize the most salient parts of the text. Some were pleased to assume that all students now had access to their textbooks because many had previously opted not to purchase costly paper textbooks. Others experienced e-textbooks as a complication because students disliked using them or were less likely to have the text in class.

Supporters and Critics

Based on their comments, we were able to rate 36 faculty teaching and learning survey respondents’ attitudes toward e-textbooks as critical, neutral, or supportive. Almost half the faculty were supportive (44%), one-third critical (33%), and the remainder (22%) neutral.

Supportive faculty made such comments as:

• I liked that the students could search for terms in an e-text (rather than scour the text/index), and I encouraged them to use the search box.
• I love having the option of offering it.
• I enjoyed very much and I would like to see it implemented in many more courses at the university.
• I hope that this program continues to be integrated with our courses.
• Including online code/activities in online text was wonderful.
• I plan to use annotations much more next time around.
• I think it was an interesting start. I would use it again, but try to integrate it into teaching more effectively.
• It was extremely helpful for me to have the readings accessible via the web. I had the material wherever I was working. It saved me time, and I could more easily draw the readings into the class.

Faculty critics’ comments included:

• I find that many of my students are reading the text less than before—or perhaps it is just that I know this now, because I can see it on the stats. A number of my students seem to have trouble accessing the text for various reasons: [The LMS] is down, access to Internet is problematic or nonexistent, etc. They know they can purchase a paper copy, but few if any of them do. I must say that I don’t especially like using the e-text in my course.

“My class is delivered using a recording feature, which shows not only webcams, but also screen captures. I did not need the annotation or note sharing features, simply because I could pull up the e-text, point at things with the mouse, and expand on the materials as part of the lecture. A picture is worth a thousand words, but a video is worth a thousand pictures.”

—Faculty member
• My students did not like the e-text because they felt it was more inconvenient to use, for example, to flip back to examples when doing homework. I used my hard copy more than the e-text. I did use the e-text in class.
• Severe technical difficulties…. Students did not like it despite the “savings.”
• I would hope that they [would] just have the textbook, which is interactive, rather than “Let’s learn this app and that app and the other.” Two sections, one loved it and the other got tired of looking at the screen. Even younger students got tired of the screen. Kindle has spoiled us, and these were not like Kindle.
• I suspect that the e-text in the pilot program wasn’t free, and that [our institution] took money out of other coffers to pay the publisher. Second, I see no advantage for [our institution] to push a top-down initiative for e-text adoption (if that was one of your goals for this pilot). Many faculty write their own lectures, and wouldn’t use the “e-features” in class that come with e-texts. If publishers have both hard and e- copies of books, I just tell students to obtain either one, as long as they read the assigned chapters.
• The interface was so clunky that no one used it. I quickly provided a hard copy of my own e-text, which most students used exclusively. Almost no one used the optional e-text, even though the same text had been quite popular when it was in hard copy.
• Students were not happy with being forced into the e-text and let me know about it…. Oh well, I tried. Once was enough for me.

Based on the instructors’ comments, faculty were more critical of e-textbooks when their students experienced difficulties. Faculty who were supporters either did not have students who experienced difficulties or did not notice those who did, and they were able to base their assessment of the e-textbook on their own experience and its impact on their ability to teach more effectively.
Will the Piloted Model Deliver the Value Students and Faculty Need?

Cost: The Primary Requirement

Individual students probably saved around $138, the average textbook cost. An undetermined number of students also chose to buy the paper text in addition to using the e-text, which would have eroded savings.

We examined students’ savings at an institutional level, by deducting institutions’ pilot participation fee from the aggregate student savings. The more students, the more savings, in general. One institution’s net savings were negative, due to fewer students (less than 300) and relatively inexpensive textbooks ($65.20 on average). With just 50 more students, their net savings would have been positive. In general, the break-even point was about 300 students (see Figure 16).

“"There are still a number of faculty on our campus who question what we are doing to our students. [They think that if they are] not going to get the campus experience, they aren’t going to get the interaction they used to get."

—CIO
What are your predictions for student savings in three to five years?

- E-texts are a vehicle that could result in significant savings for students, making students and parents (and therefore institutions) happy.
- Students should benefit the most from the adoption of e-content and I hope that their savings continue to mount, especially as the cost of their education continues to increase.
- Yes [due to] open content.
- This is primary motivation.
- My hope is that it will increase.
- Uncertain, but hoping would reduce costs.
- I hope this will increase—less optimistic that it will make an impact.
- We will continue to see conflicting data.
- At most 50%, probably less, for publisher e-texts.
- Difficult to predict. As the shackles of the print media are released, it is possible we’ll see more resources wrapped into e-content. If this is true, then student savings will be negligible—and e-content cost could conceivably go up.
- Minimal.
- Impacted by leasing models, resale of print versions, popularity of open educational resource texts
- Limited until students adapt to or prefer e-texts.
- Not sure if students will save that much—publishers seem determined to keep digital prices high and don’t appear to be offering substantial discounts for digital versions.
- Not as dramatic as I would like to see.

Impact on Institutions

In addition to the participation fee ($20,000 or $35,000, depending on the type of institution), each institution also invested considerable staff resources in the project. Several institutions commented on the significant time this project required. However, others observed that Internet2 and EDUCAUSE resources saved them additional time and made piloting this service feasible.

Predictions for Future Savings

Institutional pilot coordinators were cautious about whether widespread implementation of this model of a publisher-proprietary platform solution would generate savings for students.

Institutional costs to implement this model are also predicted to increase over current costs. Institutional coordinators mentioned such cost drivers as digital content subscriptions, the cost of changing institutional processes, and managing disability issues. IT, the bookstore, disability services, and the learning center were predicted to incur the greatest additional costs (see Figure 17).
Availability, Portability, and Functionality

Based on the teaching and learning study, print remains students’ top choice for reading, outnumbering all the other options combined by a factor of three to one (see Figure 18). With the other choices, students’ preferences are not so clear, because device ownership rates vary.
Although students’ preferred platform for reading is print, e-textbooks are digital and thus designed to be read on a screen. Using the results of the ECAR 2012 undergraduate students and technology study and reports from the e-textbook pilot, we estimate that every student who owned a desktop, laptop, or tablet used those devices to read e-textbooks and only about one-quarter of smartphone owners tried to read the e-textbooks on their smartphones. Most reading (72%) was done on laptops, and desktops and tablets each accounted for about one-third of reading time for those who used them (see Figure 19).

**Figure 19. How Students Read E-Textbooks**

Students appreciated the greater portability of e-textbooks and the fact that their textbooks were more conveniently available. However, students expressed frustration about the segregation of content in a textbook platform system from the learning management system. Students also found accessing the text from their primary devices inconvenient.

Common complaints included:

- Lack of offline access to the e-textbooks
- Difficulty using the e-textbook on a variety of tablets
- Severe limitations to smartphone access, including the inability to zoom the text
- Unavailability of the e-textbook on e-readers*
- Slow page loading and other Internet browser issues
- Poor functionality compared with contemporary standards set by e-readers and smartphone and tablet e-books
- Difficulty reading text on screens and preferences for print

“Overall, felt like I was navigating a cumbersome paper textbook on a computer. Fell well short of taking advantage of the fact it is an electronic text. Could have been a lot better.”

—Student

“Navigation within the textbook was difficult at times. I mainly just used a hard copy of the textbook that I bought. Also I would have zero interest in purchasing an e-text if I wouldn’t have access to it after the semester is over. I almost always keep books after the semester rather than selling them. Also I find paper books much easier to use, so the main reason to purchase an e-text for me would be cost, and if I couldn’t have access to the book after the semester was over, that would be wasted money. With paper books there is the possibility of selling them, and therefore regaining most of the cost of the book.”

—Student
Effect on Teaching and Learning

More students reported that e-textbooks had a negative effect on their learning than a positive one. Somewhat more faculty liked than disliked e-textbooks, but the pilot faculty were in part selected for their interest in innovation; thus, they probably reported a higher rate of support for e-texts than would the overall faculty population at their institutions. Faculty struggled to find the time and support to effectively adopt e-textbooks, and many expressed a lack of motivation to invest time in a pilot to which they would lose access after the pilot's end. The pilot provided clear evidence that it is faculty who will help students derive significant value from e-textbooks. In courses where faculty engaged with the e-textbooks, more students reported positive learning outcomes.

Overall Impact

Perhaps the clearest indication of students’ feelings about e-textbooks is their response to the question of whether they plan to purchase e-textbooks in the future. Twenty-six percent of students agreed with the statement that they plan to purchase e-textbooks over traditional textbooks in the future, 32% were neutral, and 42% disagreed (see Figure 20).

“I was not able to read the e-text on my Kindle Fire. Had I been able to, I would have used the e-text much more and would not have bought a paper copy. I like the idea, but my laptop is not very portable when it comes to needing it just to read a book. If the e-texts become more compatible with my Kindle Fire, I will definitely sign up for more e-text courses.”
—Student

“My favorite things: not carrying a heavy textbook around, and it always remembering my place/easy to skip to correct place.”
—Student

Figure 20. Student Plans to Purchase E-Textbooks over Traditional Textbooks in the Future
Focus on Accessibility

Fourteen percent of students reported having web accessibility problems with the e-textbooks, such as difficulty accessing web content due to visual, auditory, cognitive, and/or speech disabilities. This percentage was similar to the levels faculty reported about their students. Most problems were related to visual disabilities. Many students encountered problems with e-textbook readability and eye strain, whether they had disabilities or not.

Most participating institutions (76%) involved their Accessibility/Disability Services unit in the pilot. The roles such units played included:

- Ensuring that students with disabilities had the necessary accommodations
- Assisting in evaluating ADA compliance and alternate solutions for students with disabilities
- Reviewing e-text reader software
- Supporting committee members, especially in relation to technology
- Testing and evaluating the e-text interfaces
- Contacting students in e-text sections who were registered with their office
- Supporting the pilot and communicating information about it to other campuses
- Serving on the advisory committee
Effectiveness of the Pilot’s Approach

When asked whether the approach to piloting e-textbooks taken by Internet2 and EDUCAUSE was a good model for future e-services and content explorations, most pilot coordinators believed it was, and many said they would do this again for future services (see Figure 21).

Is this Internet2/EDUCAUSE approach a good model for future e-services and content explorations?

| Somewhat | 6% | 24% | 71% |
| No | Yes |

Would you do this again for future services?

| Probably not | Probably |
| 14% | 29% | 29% | 35% |

Almost certainly

Figure 21. Evaluation of the Pilot’s Approach

Pilot coordinators felt the pilot’s strengths were

- its structure (a relatively low-cost, research-based, controlled pilot),
- Internet2’s centralized and coordinated negotiating and demand aggregation, and
- the cross-institutional collaboration and teamwork.

The pilot approach itself was also seen as a major limitation because it deterred faculty and because the publisher and vendor options were limiting. Additional limitations included communications and support issues with the vendor and publisher, current technological limitations of e-texts, timing issues with the pilot, and the complexity of coordinating within and across institutions.
**Moving Beyond Pilot to Implementation: The Indiana University E-Texts Initiative**

*Anastasia Morrone, Indiana University*

In the article “Shaping the Path to Digital: The Indiana University eTexts Initiative,” Brad Wheeler, vice president for information technology and chief information officer for Indiana University (IU), and Nik Osborne, former chief of staff in the Office of the Vice President for Information Technology at IU, describe the implementation of an e-text pilot at Indiana University. The two-year pilot (2009–11) demonstrated that utilization of e-texts in a large, multicampus institution like IU was not just a viable alternative to the rising costs of textbooks but also offered significant pedagogical advantages through the use of technology.

Reducing the costs of course-related materials for students, providing faculty with the high-quality materials they desire, enabling adaptive learning platforms and new tools for teaching and learning, and developing a sustainable model that works for all stakeholders (faculty, students, authors, and publishers) were the key objectives of the pilot, which has now moved to the implementation phase using the following model:

- Faculty autonomy plays a key role in textbook selection, and it is equally important in the selection of e-texts.
- Students retain access to their e-texts for as long as they attend the university.
- Students are able to print as many pages as they want from an e-text and may also request a print-on-demand version of the textbook for an additional fee.
- The agreements with Courseload (the e-text reader application used at IU) and the publishers allow users to access the e-texts via multiple devices (laptop, tablets, smartphones, etc.) both online and offline.
- Courseload provides a uniform platform to access, read, and annotate all e-texts from within Oncourse, IU’s learning management system.

With the spring 2013 semester, the IU eTexts Initiative is now in its third full semester of production. Since its production launch in the spring 2012 semester, e-text utilization at IU has gone from 131 course sections and 4,800 students to, as of spring 2013, 237 course sections and over 9,000 students.

Summary and Conclusions

The pilot shows the path forward: Address faculty's and students' fundamental motivations.

- They overwhelmingly believe today's course materials are too expensive and both want those costs lowered. They also consider the environment in their cost calculations.
- They want choice: choice of platform (including print), choice of place of access (including offline), choice of sourcing their textbooks.
- They see digital course materials as the way of the future. They expect those materials to be available on contemporary and emergent devices and interfaces. Their requirements are shaped by their experiences as consumers at least as much as by their experiences using institutional applications.
- They are here to teach and learn, and, with varying degrees of enthusiasm, most welcome opportunities to be more effective. They need support, though, to do this.
How did the pilot fare with these criteria? Students’ and faculty’s biggest motivations are also seen as the biggest barriers to widespread adoption (see Figure 22).

Cost, the biggest driver of value for students and faculty, was not an issue in the pilot because the pilot was intentionally structured to provide students with e-textbooks at no cost to them. Pilot participants, however, were uncertain about the ability of the current model to deliver ongoing savings to students or to institutions. Students were ambivalent about the hypothetical future prospect of being assessed a mandatory materials fee: 33% of baseline study students said they would enroll in a course that had a mandatory e-text charge, 24% said they would not, and 43% said maybe. In written comments, students wrote that if fees were to be charged, they wanted to be able to opt out of them and find alternative sources. Faculty and administrators expressed uncertainty about whether the current publisher-driven model would ever yield significant savings. Without cost savings, students would continue to incur high expenses for course materials or to forego them entirely (as many do currently with expensive paper textbooks) in an effort to economize.

The pilot identified challenges in the areas of availability, portability, and functionality that need to be addressed. The transient nature of the pilot deterred many faculty from dedicating appreciable effort to the e-textbooks.

![Figure 22. Biggest Barriers for Future Widespread Deployment of E-Texts Using a Collaborative Course-by-Course Model](source: Institutional survey, n = 17)
**Who’s in Charge?**

This pilot involved many stakeholders, from IT to the library to the bookstore to disability services. In all but 2 of the 17 baseline study pilot institutions, IT was at least one of the executive sponsors of the pilot. While IT clearly has a role to play to support, deliver, and help design new methods of providing digital course materials, it must collaborate and co-lead with many other groups. Each institution has a different culture and a different set of strategic priorities that will influence its e-materials strategy, projects, and services, but all will need to work across multiple areas.

The most important stakeholder was arguably underrepresented: the faculty. Their motivations—to reduce students’ costs, expand students’ choices, and improve their teaching—were always in their students’ best interests. Students had more positive experiences in courses whose faculty enthusiastically adopted the e-textbooks. One of the biggest barriers to faculty support of the pilot was their limited access to the e-textbooks, which didn't begin until the course started and lasted only during the course. The prospect of investing in e-textbook annotations and other markups only to lose them at the end of the course deterred many faculty. Any explorations in the area of digital course materials must not just involve faculty but also empower and incentivize them. All the usual challenges of innovation and change apply: The early adopters and evangelists lead the way, the recalcitrant resist at every step, and the majority can be brought along with assistance, compelling use cases, incentives, and time.

**Beyond E-Textbooks**

E-textbooks are part of a larger environment of digital course materials that includes open educational resources (OERs), MOOCs, and other potential resources. These materials have their own challenges and limitations, but they may at least contribute to a future of lower-cost course materials with the features and conveniences of digital resources.

This is a period of rapid development and intense experimentation in digital course materials. In addition to focusing on reformulating an existing model of publisher-provided content for electronic media, we might be wise to expand our explorations to new forms of content and new models of content delivery. The world of scholarly content is unsettled. Many of today’s stakeholders are scrambling to gain or retain position. Academia can leverage this disorder to drive out costs and challenges of today or simply remake the future in the image of the past.

The 2012 ECAR study of undergraduate students and technology suggests that OERs currently appeal more to students than e-textbooks: 47% of students wished their instructors used e-textbooks more (up from 32% in 2011), while just 18% wished they used them less. That is a positive sign for e-textbooks, but the trend

“Textbooks [are] one of the last areas of publishing to undergo significant technology-driven change. But a move from print to online does not guarantee lower costs for consumers—witness what happened with scholarly journals. This is our opportunity to help ensure that the transition to e-textbooks results in genuine savings for all those involved in purchasing them—students, parents, instructors, and the overall institutions of higher learning.”

—Pilot coordinator
is even stronger for OERs: 57% of students wish instructors used OERs more (up from 19% in 2011), and only 10% wished they used OERs less. The rapid year-over-year change in students’ preferences is itself a warning that the resources and the market are still evolving.

If this environment is still unsettled, much of the settling needs to happen in the marketplace. Students want the portability of smartphones and tablets, the availability of the Internet, the convenience of offline storage, the features of apps and e-readers, and the readability and interoperability of paper—all on their own personally preferred platform. Each year provides new advances in the marketplace, and those advances shape expectations, stimulate demand, and create new possibilities for further innovation and improvement in educational course materials. Moving beyond consumer devices and applications, a great deal of development and innovation needs to occur in the delivery of scholarly materials and services. In that space, academic institutions and faculty are major stakeholders and have both significant interest and value in contributing to solution development. Leaving them out of the equation will lead to less useful solutions, more design dead ends, and lower adoption.

Cost, availability, and portability—these are the factors that most concern faculty and students about course materials. This is what we should strive to provide them. Functionality and innovation matter, but only when these three more-basic requirements have been met.
Acknowledgments

This research would not have been possible without the dedicated and sustained support of people from the 23 participating colleges and universities: Sandy Bennett, Debbie McMahon (Baylor University); Susan Reese (California State Polytechnic University, Pomona); Jeff Bullington, Christopher Sugnet (Colorado State University); Eric Sakai (Community College of Vermont and Castleton State College); Clare van den Blink (Cornell University); Barbara Knauff (Dartmouth College); Anastasia Morrone (Indiana University); Lesya Hassall, Allan Schmidt, Jim Twetten, Michael Wilson (Iowa State University); Andrea Deau, Jennie May (Madison Area Technical College); Linda Sabatelli, Rob Withers (Miami University of Ohio); Colleen Hyslop, Heidi Schroeder (Michigan State University); Terry Simpkins (Middlebury College); Matthew Schmitz (Southern Illinois University–Edwardsville); Charles Lyons (University at Buffalo); Sarah Frick, Jennifer McKay (University of Alaska, Anchorage); Caroline Sinkinson, Mark Werner (University of Colorado–Boulder); Kimberly Nakano (University of Hawaii at Manoa); Virginia Lacefield (University of Kentucky); Monica Metz-Wiseman, Alexander Neff (University of South Florida); Karen Inkelas (University of Virginia); Tanya Joosten (University of Wisconsin–Milwaukee); Mark Porcaro (Wichita State University). They helped with the pilot's design, execution, and coordination at and beyond their institutions and made numerous logistical, strategic, and substantive contributions. Tom Malek and Irene McGuinness of McGraw-Hill and Mickey Levitan and Michael Burton of Courseload generously participated in the pilot and were responsive to our requests for additional information. Shel Waggener of Internet2 provided leadership and vision to initiate this pilot and champion it throughout our community. Dana Voss, also of Internet2, has been the pilot's primary coordinator, spending endless hours capably organizing the many players. Joanna Grama of EDUCAUSE helped facilitate the analysis and data gathering and in many other ways made these efforts significantly easier and better. Tyson Anderson of EDUCAUSE created all the graphics and charts in this report and is the reason they are both legible and lovely. Gregory Dobbin of EDUCAUSE provided his usual meticulous and wise review of the report.
Appendix A

Details of the Pilot

Participating Institutions

<table>
<thead>
<tr>
<th>Institution</th>
<th>Baseline Study</th>
<th>Teaching and Learning Study</th>
<th>Pilot Implementation Survey</th>
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<tbody>
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<td>Wichita State University</td>
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Executive Leadership/Sponsors

- Senior-most area executive (CIO, provost, etc.) in all but three institutions
- Most often CIO (12), equally often provost, head librarian, and lead for academic technologies (5 each).
- IT was not the executive sponsor in two institutions
Piloting E-Texts in Higher Education

**Pilot Leader, Day-to-Day**

Leader of the pilot on a day-to-day basis was librarian (six), head of academic technologies (five), or instructional designer/other academic technologies staff (seven). One leader was from the PMO.

<table>
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<th>Percentage of Institutions</th>
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<tbody>
<tr>
<td>Pilot had a project manager and it was the same person as the day-to-day leader</td>
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<tr>
<td>Pilot had a project manager and it was a different person</td>
</tr>
<tr>
<td>Pilot did not have a project manager</td>
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**Unit Contributions**

The pilot required coordinated involvement of many units. The lists below show both the percentage of institutions that involved each unit and contributions each unit made in one or more of the institutions where they were involved.

**Learning/course management system support (100% of institutions)**

- Faculty support
- LMS-Courseload integration
- Supported LMS deployment for pilot
- System support
- Liaised with Courseload representative; referred questions to appropriate support services
- Project team member
- Consultation and testing in early stages of pilot

**Library (89% of institutions)**

- Faculty recommendations
- Project leadership
- Project management
- Implementation
- Training
- Planning
- Provided funding
- Assessment/research
- Advisory committee
- Student and faculty support
IT support (72% of institutions)

- Supported enrollment management in pilot courses
- Escalated support inquiries but did not support directly
- Faculty and student support
- Managed the pilot

Disability services (72% of institutions)

- Ensured that students with disabilities had the necessary accommodations
- Assisted in evaluating ADA compliance and alternative solutions for students with disabilities
- Reviewed e-text reader software
- Committee member and technology support
- Interface testing and evaluation
- Contacted students in e-text sections who were registered with their office
- Supported pilot; communicated information about pilot to other campuses
- Advisory committee

Academic computing (67% of institutions)

- Led project
- Managed project
- LMS integration, setup, and support
- Supported the faculty
- Assessment/research
- Help desk support
- Consultation on project

General counsel (67% of institutions)

- Contract review
- Liability assessment
- General awareness and interest
- Provided advice regarding accessibility issues
- Helped to work through bookstore waiver
- Advisory committee
Instructional designers/educational technologies (56% of institutions)

- Led project
- Identify faculty
- Communications
- Project team member
- Faculty and student support
- Training and communications
- Assisted with the design and alteration of the courses to include the e-textbook
- LMS-Courseload integration

Administrative leadership (50% of institutions)

- Approved project
- Contract management
- Support, discussion, and planning with academic governance groups
- Provided funding
- Provided general support
- Worked to ensure bookstore granted a waiver that would allow the pilot to proceed
- Advisory committee

Academic leadership (50% of institutions)

- Approved project
- Faculty recommendations
- Endorsed project
- Managed project
- Provided funding
- Worked to ensure bookstore granted a waiver that would allow the pilot to proceed
- Advisory committee

Registrar/enrollment management (39% of institutions)

- Supplied textbook data to help find potential pilot participants
- Provided course and enrollment information
- Enrolled students in D2L courses
- Assisted with distributing information to students enrolled in pilot courses
Institutional research (39% of institutions)
- Provided data such as overall GPA and standardized test scores
- Conducted survey planning
- Approved research
- Helped evaluate the results of the pilot

Learning center/center for excellence in learning and teaching (33% of institutions)
- Led project
- Managed project
- Committee/team member
- Training and communications
- Help desk support
- Assessment/research
- LMS-Courseload integration

Communications, public relations office (28% of institutions)
- Marketing
- Internal communications
- PR and press interaction
- Published article about the pilot in university daily newsletter

Infrastructure (22% of institutions)
- Ensured wireless access points in classrooms for participating pilot
- LMS integration
- Help with FERPA compliance, data security issues

Students (6% of institutions)
- Advisory committee

Other (please specify) (33% of institutions)
- Faculty Center for Professional Development: submitted IRB for approval, assisted in the evaluation of the data, assisted in project management of the pilot
- Bookstore: communication with students regarding the courses involved in the pilot
- Libraries Distance Learning Services: help desk served as the 24/7 e-text help desk
- Bookstore: generated lists of faculty using McGraw-Hill books, indicated e-textbook availability in their online store catalog
- One researcher provided a FAQ [http://bit.ly/eTexts](http://bit.ly/eTexts) to help faculty and students with questions
- Media Resources Center Executive Director: consultation and support
Approach to Disability Issues

Please describe your approach to accessibility issues. What approach did you take? How did you design it? What issues did you encounter? What would you do differently about managing accessibility based on what you learned?

• No Accessibility Issues

  ▶ We did check with our office of accessibility and learning accommodation to see if we had any students who need consolidation. If that had been an issue we would have taken appropriate steps to ensure that students had the necessary materials.
  ▶ Provided directions for requesting assistance as needed.
  ▶ In previous courses using e-texts, we arranged for publisher to provide screen-reader-friendly PDF copies of e-texts.
  ▶ We consulted with our accessibility office before the pilot began.
  ▶ We did not do anything special about accessibility issues.
  ▶ We worked closely with our accessibility office in preparation for the pilot. Together, we tested the e-textbooks for accessibility and developed a plan to ensure equal access to the educational benefits and opportunities for all students in the pilot. We were ready to provide, upon request, accessible versions of any of the e-textbooks included in our pilot. We were also committed to purchasing print materials on behalf of any students registered with the accessibility office who could not reasonably access an accessible version of their e-textbook. We also consulted with our legal department to assess the risk of participating in the pilot.
  ▶ Participating instructors and students were contacted in advance and at the beginning of the pilot semester and encouraged to let us know if any accommodations were needed. We also provided instructors and the Disability Resource Center with information about accessibility features of the e-reader, as provided to us by Courseload.
  ▶ Communicated with the director of student disabilities. Met with faculty participating in pilot and informed them of our strategy that the library would run interference for the faculty member.
  ▶ We gave access to Disability Services to test Courseload for accessibility. We also gave them a list of all of the courses involved to check for students with registered disabilities to ensure that we could provide them with alternatives, if necessary.
• We provided e-text in CourseLoad for all students registered with our DRC. All students were told this and if they let the DRC know they were taking an e-text course, they were given a free code that gave them access to the CourseLoad book in screen-readable format.

• One student used a screen reader and created a workaround herself. Student Disability Resources acquired the textbook and converted it for her. Providers should test accessibility for common screen readers such as Jaws, Kurzweil, and Read and Write Gold.

• Learning Needs Center provided accommodations upon request.

• Informed Accessibility Office of program and had process in place should need for access arise.

• Students in need of an accommodation contact the Student Accessibility Center.

Selecting Faculty to Participate

Criteria used to select faculty and courses (most schools used multiple criteria, five on average)

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Percentage of Institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interest in emerging technologies/e-texts</td>
<td>76%</td>
</tr>
<tr>
<td>Current use of textbook that was included in pilot</td>
<td>71%</td>
</tr>
<tr>
<td>Issued a call for volunteers</td>
<td>71%</td>
</tr>
<tr>
<td>Interest in e-texts and using enhanced functionality of e-texts</td>
<td>59%</td>
</tr>
<tr>
<td>Active LMS user</td>
<td>53%</td>
</tr>
<tr>
<td>Type of course taught (format, enrollment size)</td>
<td>53%</td>
</tr>
<tr>
<td>Type of course taught (discipline)</td>
<td>47%</td>
</tr>
<tr>
<td>Willingness to meet rapid deadlines and collaborate on the research</td>
<td>35%</td>
</tr>
<tr>
<td>Ability of publisher to convert book to e-format</td>
<td>29%</td>
</tr>
<tr>
<td>Teaching excellence</td>
<td>18%</td>
</tr>
<tr>
<td>Course uses a relatively expensive textbook</td>
<td>18%</td>
</tr>
<tr>
<td>Previous e-text users</td>
<td>12%</td>
</tr>
</tbody>
</table>
Comments and Details

- We were especially interested in use of e-texts by online faculty. Nine of 10 e-texts pilot courses were online. All four CSC courses were on-ground.
- The most important factor for us was use of a McGraw-Hill textbook—and we found not many faculty who did. So we did not run as many pilot courses as we contractually could have.
- Sent out an announcement to our faulty Listserv. Took all that volunteered that were logistically able to participate based on McGraw-Hill’s digital rights. A few had to be dropped because McGraw-Hill did not have logistics in place for faculty that were using the “MH Connect” features.
- For the fall pilot, the pilot team gathered a list of high-enrollment courses from the registrar, then hand selected instructors to invite based on previous experience with the instructor or other knowledge of the instructor’s interest and abilities. Current use/availability of textbook was another important consideration. Since fall 2012 was the first time we participated in this pilot, we felt it would be easiest to manage and evaluate if we had a small number of high-enrollment courses. We ended up with three 100-level courses in the natural sciences, one online, which offered some extra diversity of experience.
- Issued a request for proposals—made it competitive and included a stipend. We were VERY unhappy with McGraw-Hill disallowing half of our faculty because their book “was not included in the pilot.”
- The first faculty to be approached about participating were those that [had] gone through a week-long training workshop for teaching online. In their invitation they were told that McGraw-Hill would be the only publisher participating, so they either needed to already be using a McGraw-Hill text or be willing to adopt one for the pilot. Out of this group of about 80 individuals about 10 expressed interest. There were about six faculty members that were not already using McGraw-Hill who weren’t able to find a text suitable for adoption. This left us with about five members of the original group, four that already used McGraw-Hill, and one that would adopt a text. After checking enrollments, I determined that my small-enrollment course could also be included since we were already using a McGraw-Hill text. The second group of faculty we approached were those already using McGraw-Hill texts on campus. However, even after contacting all of the faculty currently using McGraw-Hill texts for their courses, the only faculty that were willing to participate in the pilot were those in the first group. The list of about six faculty members was sent to the CIO and at seeing that we were a little below capacity at that point, he decided he wanted his class to be a part of the pilot too. Three weeks into the semester, we had a small, unexpected wrinkle when one of the faculty participants quit, leaving two class sections to two other professors. One complication that kept them from proceeding seamlessly was that as a part of the pilot the former
professor adopted a new textbook. Because the class was already in session the new professors decided that they would keep the text. However, one of the two replacement professors wanted to use the previous text more, he decided to keep the e-textbook only as supplementary material.

Reasons Faculty Declined

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percentage of Institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doubt about e-text readiness</td>
<td>41%</td>
</tr>
<tr>
<td>Too busy</td>
<td>35%</td>
</tr>
<tr>
<td>Doubt about e-text usefulness</td>
<td>29%</td>
</tr>
<tr>
<td>Discomfort with technology</td>
<td>24%</td>
</tr>
<tr>
<td>Doubt this would apply to their course(s)</td>
<td>18%</td>
</tr>
<tr>
<td>Doubt that students would benefit</td>
<td>12%</td>
</tr>
</tbody>
</table>

Comments and Details

- We could not obtain publisher permissions for some courses/texts initially identified for pilot participation given pre-existing contracts with bookstore for special/customized text options.
- Didn't use McGraw-Hill textbooks; or needed to use an older edition of a given text.
- Concern about portability—language courses use same text over three or four semesters, longer than the one semester pilot; concern about faculty “control” over classroom activities; a letter from faculty council to institution administration said “the adoption of electronic textbooks is likely to radically undermine what we have come to understand as the [institution name] brand of teaching.”
- The institution paid for the e-textbooks—so there was little doubt that some portion of the students would participate and benefit (economically, at least).
- The doubt centered on the availability of color printing and a desire for students to maintain access to core texts relevant to their field after the pilot.
- Lack of response to initial communication and confusion about why they would want to participate, even if they were using McGraw-Hill texts already.

Characteristics of Faculty Most Comfortable with the Pilot

Comfortable with technology, early adopters

- Faculty members who are comfortable with technology, like to try new approaches, comfortable with uncertainty, accepting of technology gotchas and flexible
- Familiarity with technology, actively engaged with technology, open to doing things differently, willing to partner, open to the social nature of learning
- Early adopters of technology. Participated in technology training on campus. Taught online.
- Most are early adopters and comfortable with technology.
- The faculty who had interest in student interactivity with e-texts
- Willingness to try new things; comfortable with technology
- Energetic (initially) and excited to be pioneers in the incorporation of e-textbooks into their courses.
- Already have interest in learning technologies.
- (2) Technologically comfortable. (3) Open to trying something new. (4) Willing to invest time in the pilot. (5) Patient when things went awry.
- Enthusiastic about teaching with technology tools and interested in trying new ones.
- They were engaged with the e-text.
- Open to exploring e-texts; interest in pursuing lower-cost models.
- At least moderate comfort level with technology
- Faculty who teach online and comfortable with technology, especially the LMS

Motivated to lower students’ costs
- Thoughtful of their students—one instructor joined because it gave his students an opportunity to use a textbook without concern about the cost.
- Liked providing a free text to their students.
- Interested in helping students, particularly with saving students money.
- Interested in investigating ways to save money for students.
- All were motivated by textbook prices.
- Interested in lowering costs for students; fed up with high costs of textbooks.
- Faculty concerned with textbook cost.

Other
- Used McGraw-Hill texts.
- Not members of a language department
- Engineering faculty with computer background
- While comfort and prior experience with using technology in their teaching was very important, the most successful faculty in the pilot were the ones who probably would have been the most engaged with their students regardless of the format of the textbook being used in the class.
Communications Mechanisms

Mechanisms to communicate with faculty (most institutions used multiple, five on average)

<table>
<thead>
<tr>
<th>Mechanism</th>
<th>Percentage of Institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-mail</td>
<td>100%</td>
</tr>
<tr>
<td>Phone</td>
<td>82%</td>
</tr>
<tr>
<td>Face-to-face</td>
<td>76%</td>
</tr>
<tr>
<td>Learning/course management system</td>
<td>53%</td>
</tr>
<tr>
<td>Regular updates</td>
<td>53%</td>
</tr>
<tr>
<td>Web pages/documents (e.g., FAQ, guide, etc.)</td>
<td>47%</td>
</tr>
<tr>
<td>Website</td>
<td>35%</td>
</tr>
<tr>
<td>Collaborative workspace/site for interproject communications</td>
<td>35%</td>
</tr>
<tr>
<td>Bookstore</td>
<td>18%</td>
</tr>
<tr>
<td>Wiki</td>
<td>12%</td>
</tr>
<tr>
<td>LISTSERV</td>
<td>6%</td>
</tr>
<tr>
<td>Newsletter</td>
<td>6%</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td></td>
</tr>
<tr>
<td>• Consulted with Academic Affairs group; they sent an initial e-mail to faculty.</td>
<td>12%</td>
</tr>
<tr>
<td>• Set up an e-text space in our LMS for announcements, e-mail, and discussion board.</td>
<td></td>
</tr>
</tbody>
</table>

Mechanisms to communicate with students (most institutions used multiple, three on average)

<table>
<thead>
<tr>
<th>Mechanism</th>
<th>Percentage of Institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty</td>
<td>71%</td>
</tr>
<tr>
<td>E-mail</td>
<td>65%</td>
</tr>
<tr>
<td>Learning/course management system</td>
<td>53%</td>
</tr>
<tr>
<td>Web pages/documents (e.g., FAQ, guide, etc.)</td>
<td>35%</td>
</tr>
<tr>
<td>Bookstore</td>
<td>29%</td>
</tr>
<tr>
<td>Face-to-face</td>
<td>24%</td>
</tr>
<tr>
<td>Phone</td>
<td>12%</td>
</tr>
<tr>
<td>Website</td>
<td>6%</td>
</tr>
<tr>
<td>Regular updates</td>
<td>6%</td>
</tr>
<tr>
<td>Enrollment office/registrar</td>
<td>6%</td>
</tr>
<tr>
<td>Other</td>
<td></td>
</tr>
<tr>
<td>• Interview(s) in campus newspapers</td>
<td>6%</td>
</tr>
</tbody>
</table>
Mechanisms to communicate with institutional community (most institutions used multiple, three on average)

<table>
<thead>
<tr>
<th>Mechanism</th>
<th>Percentage of Institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-mail</td>
<td>59%</td>
</tr>
<tr>
<td>Face-to-face</td>
<td>41%</td>
</tr>
<tr>
<td>Website</td>
<td>35%</td>
</tr>
<tr>
<td>Web pages/documents (e.g., FAQ, guide, etc.)</td>
<td>35%</td>
</tr>
<tr>
<td>Presentations to existing committees, forums, departments</td>
<td>35%</td>
</tr>
<tr>
<td>Phone</td>
<td>24%</td>
</tr>
<tr>
<td>Newsletters</td>
<td>18%</td>
</tr>
<tr>
<td>Regular updates</td>
<td>18%</td>
</tr>
<tr>
<td>Bookstore</td>
<td>18%</td>
</tr>
<tr>
<td>Listserv</td>
<td>12%</td>
</tr>
<tr>
<td>Special F2F forum for campus community</td>
<td>12%</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td></td>
</tr>
<tr>
<td>• Academic Technology blog</td>
<td></td>
</tr>
<tr>
<td>• We are planning to give a public presentation on the results of the first semester pilot later this spring.</td>
<td>18%</td>
</tr>
<tr>
<td>• None until findings are done and strategic vision, next steps, are in place.</td>
<td></td>
</tr>
</tbody>
</table>

Mechanisms to communicate with the public

<table>
<thead>
<tr>
<th>Mechanism</th>
<th>Percentage of Institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>41%</td>
</tr>
<tr>
<td>Web site</td>
<td>29%</td>
</tr>
<tr>
<td>External news outlets and publications (local and national)</td>
<td>29%</td>
</tr>
<tr>
<td>Web pages/documents</td>
<td>18%</td>
</tr>
<tr>
<td>Newsletters</td>
<td>12%</td>
</tr>
<tr>
<td>Phone</td>
<td>6%</td>
</tr>
<tr>
<td>Face-to-face</td>
<td>6%</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>0%</td>
</tr>
</tbody>
</table>
Faculty Support

Support options

<table>
<thead>
<tr>
<th>Support Option</th>
<th>Percentage of Institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-mail</td>
<td>94%</td>
</tr>
<tr>
<td>Project team members’ contact information</td>
<td>94%</td>
</tr>
<tr>
<td>Online support (e.g., course in learning management system to support the pilot)</td>
<td>76%</td>
</tr>
<tr>
<td>One-on-one consultation with project team</td>
<td>71%</td>
</tr>
<tr>
<td>F2F training</td>
<td>65%</td>
</tr>
<tr>
<td>Training webinars</td>
<td>59%</td>
</tr>
<tr>
<td>IT help desk support</td>
<td>47%</td>
</tr>
<tr>
<td>In-class demos</td>
<td>24%</td>
</tr>
<tr>
<td>Regular meetings with faculty</td>
<td>12%</td>
</tr>
</tbody>
</table>

What did you do to help faculty get started, oriented, up to speed?

- We held F2F information and orientation sessions. We also sent them links to online training materials.
- Courseload offered a WebEx to teach them to use the e-text software.
- Set up face-to-face training sessions for the faculty and involved staff (LMS, help desk).
- Courseload training webinar for faculty; individual assistance to faculty for LMS course development, deployment of e-text link.
- Face-to-face session to orient them to the e-reader platform
- Provided documentation, individual meetings with instructors, course in our LMS, provided orientation material to give to students.
- Webinar training; website; e-mail; tech support; F2F meetings
- Through face-to-face orientations and with supplementary materials provided via the LMS, the Courseload site, and e-mail
- I met with each faculty member one-on-one to provide an overview and training. There was much back and forth via e-mail and phone as well. Support documentation was created by the library and provided by Courseload as well.
- Set up training with Courseload reps.
- We developed an FAQ and help documentation which were shared with faculty via e-mail. Faculty were invited to request one-on-one assistance from the academic technology consultants. All but one participant took part in one-on-one consultations.
- Webinar with Courseload. Clear instructions
• We provided links to tutorial videos, instructions, and other reference materials and notified instructors about live web training provided by Courseload. We also offered face-to-face training with a member of IT upon request.

• In-person training, creation of web pages

• Orientation session

• We conducted faculty development workshop on technical how-to and pedagogical best practices.

• Offered them hands-on training, follow-up e-mails, and documentation provided by Courseload for further assistance.

**Student Support**

Support options

<table>
<thead>
<tr>
<th>Support Options</th>
<th>Percentage of Institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online support (e.g., course in learning management system to support the pilot)</td>
<td>82%</td>
</tr>
<tr>
<td>IT help desk support</td>
<td>71%</td>
</tr>
<tr>
<td>E-mail</td>
<td>65%</td>
</tr>
<tr>
<td>In-class demos</td>
<td>29%</td>
</tr>
<tr>
<td>FAQ</td>
<td>29%</td>
</tr>
<tr>
<td>Project team members’ contact information</td>
<td>18%</td>
</tr>
<tr>
<td>One-on-one consultation with project team</td>
<td>18%</td>
</tr>
<tr>
<td>Training webinars</td>
<td>6%</td>
</tr>
<tr>
<td>F2F training</td>
<td>6%</td>
</tr>
<tr>
<td>Other</td>
<td></td>
</tr>
<tr>
<td>• Website with links to self-help</td>
<td>12%</td>
</tr>
<tr>
<td>• Faculty assistance</td>
<td></td>
</tr>
</tbody>
</table>

What did you do to help students get started, oriented, up to speed?

• When invited we meet with students in their classes, held open drop-in orientation sessions, included links to online training materials in their courses.

• Courseload provided links to online tutorials.

• Prepared short information sheet to hand out in first class meeting, directing to more support information on LMS and Courseload class pages.

• Informed faculty of how students access online help on Courseload platform.

• We left this to faculty and self-help.

• Provided documentation, provided support for faculty.

• Website; tech support

• Through orientation resources provided via the LMS
• I gave an overview and training session during the first week of the semester in each of the classes (during regularly scheduled class time). Documentation was provided via e-mail, on the Libraries web page, and in the LMS course site. Follow-up and one-on-one sessions were offered.

• Faculty provided training materials to students in Blackboard shells.

• We offered classroom visits by academic technology consultants. A few classes took advantage of this service. The faculty were asked to e-mail students the FAQ. Help within Courseload pointing to help documents and referring students to the call center. The call center was ready and prepared to answer student and faculty calls.

• None—provided wording for faculty to use within the learning management system.

• We provided links to tutorial videos, instructions, and other reference materials.

• Created documentation for faculty; created web page.

• FAQ

• Student documentation and help sheet—then up to faculty

• Provided faculty with documentation provided by Courseload to include in course materials.

**Faculty and Students: Most-Successful Support Options**

**One-on-one with faculty**

• Training links and F2F sessions for the faculty were very successful.

• One-on-one sessions with faculty were effective but do not scale well.

• Face-to-face training and consultations. E-mail support. Face-to-face orientations for faculty extremely useful and productive.

• One-on-one consultations

• Face-to-face trainings for faculty were effective.

• The face-to-face training seemed popular.

• Face-to-face training and support.

• For faculty: in-person training

• One-on-one faculty training

**In-class demos with students**

• For the students the in-class demos were most effective. The classes where we meet with the students at the start of semester were more successful and satisfied.

• Also critical is getting into the class during the first week of the semester.

• F2F demos in some classes
Online support integrated into tool

- Help resources in Courseload platform seemed adequate, though additional training for both faculty and students would have helped.
- Online support. Easy integration option with LMS. I would definitely recommend this to future participants.
- Since the e-textbooks were accessed via the LMS, placing support documentation, including contact information, directly in the LMS is critical.
- We set up an LMS shell for faculty support. The Courseload webinars helped tremendously.
- Online support
- A FAQ in LMS

Webinars

- WebEx training of the faculty
- The live webinar options seemed popular.

E-mail

- E-mail support
- Faculty prefer e-mail.
- Assigned a support team member to each faculty.
- All seemed useful.

For students: Support by faculty

- For students: information provided by faculty
- Students usually e-mailed faculty.
- FAQ
- Faculty members requested future help options such as semester launch and meetings about how to apply features to teaching and learning strategies.
- Online support within the learning management system
- The LMS course we set up to enable the instructors and IT support staff to interact was barely used.
- For faculty: web pages
- Students seemed comfortable with training materials provided and access to support via our central help desk.
Participating Institutions

Advice for institutions considering deploying e-texts via a collaborative course-by-course model:

- Be careful of faculty perceptions about staff injecting themselves into classroom/pedagogical issues.
- Take time to plan and make sure to have faculty and student buy-in prior to implementation. The biggest mistake made by our faculty is their unwillingness to inform the students that they would be using an e-textbook prior to the first day of class. In some courses, this had disastrous results.
- Put extra effort into finding instructors who are interested, enthusiastic, comfortable with technology, and willing to put some extra effort into exploring e-textbooks.
- Help faculty to understand the advantages and potential of enhanced features.
- Build on successes: strengthen relationships with instructors who effectively use e-textbooks and ask them to help spread the word about e-textbooks (both informally to colleagues and more formally through presentations on campus).
- Faculty should be clear with students about the advantage of the e-text, rationale for use, and how they may leverage the tool to enhance learning.
- Foster a community or sharing tool with which faculty may develop pedagogical applications, design, and adaptations.
- Let students and instructor drive demand.
- Let faculty make their own decisions about content.
- Consider collaborating with instructors on a research project (perhaps grant-funded) to explore e-textbook integration in the class.
- Remember that this a time for experimentation—learn from mistakes, create best practices as you go, try new things (platforms, business models, types of e-textbooks).
- Communicate. Overcommunicate.
- Don't forget open textbooks, especially when funding is tight (always!).
- Do a needs assessment and get the students’ feedback on features. Make sure that the platform you are using adheres to the students’ needs/wants.
- Make sure accessibility is a key feature.
- While students appreciate “free,” they are still used to hard copy and many opted for print.
- Get the funding model straightened out in advance, especially if you have any sort of limited contract with your bookstore or restrictions on charging course fees. Those kinds of administrative barriers can be much harder to overcome than any technological or faculty adoption issues.
• Be prepared to take on a second job or lots of work. :-) Have a passion for the project; it will help when obstacles get in the way.
• Provide rich open textbooks if concerned about access.
• Focus on interactive pedagogy rather than e-text delivery of text/images.
• Overall, an e-text product should allow the students the most freedom in format (print and e-text), as well as be mobile, should not require an Internet connection for access, and is less expensive than the print option.

Appendix B

Full Summary of Baseline and Teaching and Learning Study Results

Notes

1. Textbook prices were calculated by averaging the cost of new and least expensive used versions of textbooks for each course.

2. A 2011 survey by the U.S. Public Interest Research Group found that 7 in 10 college students said they had not purchased one or more textbooks because the cost was too high.

3. The questions were: Compared to paper textbooks, e-textbooks: (1) Helped me to better understand the ideas and concepts taught in this course, (2) Allowed me to better organize and structure my learning, (3) Increased engagement with course content, (4) Offered greater flexibility to learn the way I want, (5) Helped me interact and collaborate more with classmates, (6) Made my study time more efficient, and (7) Allowed me to interact more with my professor. (8) Using e-texts has become part of my learning routine. (9) I read more of the assigned material than I would have if it were a paper textbook. (10) I highlighted and/or annotated more than I normally do with paper textbooks. (11) I learned more from using the e-text with highlighting and/or annotations (mine and others’) compared to what I normally learn from paper textbooks.

4. E-textbook orientation and support was provided largely by faculty in most pilot courses.

5. Sixty-four percent of faculty respondents to the teaching and learning survey reported providing an in-class orientation. This discrepancy could be the results of a perhaps more interested subset of all pilot faculty, or perhaps faculty teaching larger classes were less likely to provide an in-class orientation.

6. Seventeen percent of faculty reported that they assign readings from the text primarily as supplemental material that students can use if they are struggling with the course content.

7. This savings obviously varied depending on whether students would have purchased used textbooks or new ones. Textbook costs were estimated by averaging the cost of new and used textbooks, most often estimated using Amazon.com's prices for used textbooks.

8. Twelve percent of undergraduate students own e-readers, according to the ECAR 2012 undergraduate students and technology study.

9. The article was published as part of Game Changers: Education and Information Technologies (Diana Oblinger, editor), a free e-book published by EDUCAUSE. The text can be read online/downloaded for free at http://www.educause.edu/research-publications/books/game-changers-education-and-information-technologies.