# Acquisition, use and technical support of digital course materials at KU: A pilot study

Prepared by the Digital Course Materials Project Team

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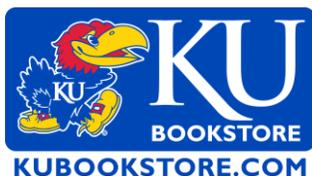
## *Executive Summary*

The intersection of higher education and technology continues to produce teaching and learning innovations. Electronic textbooks, also known as online textbooks, e-texts or digital course materials, are one example of an ed-tech innovation. Currently, the majority of instructors at the University of Kansas use traditional textbooks with their courses. Based on instructor requests to the KU Bookstore, an estimated 5 percent of course material being used at KU is digital.

To study the university's readiness to provide technology and acquisition support for digital learning materials, the KU Bookstore and KU Information Technology (KU IT) conducted a pilot study with four courses during the fall 2012 semester. The goal was not to research learning outcomes or scientifically compare the usability of digital vs. traditional textbooks. Instead, the goal was to gauge student and instructor satisfaction with the process of acquiring, accessing and using digital course materials, as well as the instructor's experience teaching with digital course materials at KU.

The project team contacted instructors who had used or were using digital course materials and selected four courses to participate in the fall pilot. Students in two of the courses received digital course materials at no cost. Students in the other two courses purchased electronic textbooks from the KU Bookstore. The project team surveyed students in all four classes at the beginning and end of the semester and surveyed faculty at the end of the semester. Because of the sample size and the non-probability sampling methods, the results cannot be used to project the perceptions and attitudes of the larger university population.

Student survey respondents had a high percentage of laptop ownership (95 percent) and home Internet access (97 percent). Of the respondents who had to purchase course materials, 62 percent said the process of purchasing the digital course materials was easy to follow and 24 percent were neutral. Through the implementation of the pilot, the project team found that KU's current environment adequately accommodates use of digital course materials and any technical implementation issues could be resolved with planning and communication with the publisher.

Based on observations from the pilot, the project team has four recommendations. First, the university should form a collaborative team to help shepherd faculty members who elect to use digital course materials through the processes of comparing, selecting, acquiring, integrating and implementing digital content. Next, KU should enlist participants to test and recommend accessible products and processes. The KU Bookstore and KU IT should also engage instructors and students regularly to ensure that any future

issues or concerns are monitored and addressed. Finally, KU can leverage collective purchasing power to negotiate content prices and options, to ensure digital content is affordable and accessible for all students.

## *Introduction*

At the University of Kansas, the adoption rate of digital course materials has had slow steady growth. Based on instructor requests to the KU Bookstore, an estimated 5 percent of adopted course materials at the KU Lawrence campus are digital. The combination of traditional printed texts combined with an enriched learning environment, such as McGraw Hill Connect, is growing on campus. Courses currently using digital course materials combine some form of the traditional printed book with an online component (e.g. Math 101 has a loose-leaf printed book bundled with Pearson MyMathLab software).

While the number of officially adopted digital course materials reflects only a small percentage, it is important to note that doesn't necessarily reflect sales of alternative digital options. Digital or e-book options are widespread and vary, as do technology platforms. Depending on instructor requirements, students are able to explore the open digital marketplace for their own preferences. For example, an English professor adopts use of *Great Expectations* in her course, and students have the option to purchase the digital version from iBooks, Amazon, etc.

In addition to general e-book providers, many companies provide digital course materials for higher education, including Pearson, McGraw-Hill, Cengage, CourseSmart, Nook, Kno and Inkling. With so many applications and digital content providers, instructors and students have many options.

In the past, the greatest technical challenges with academic use of digital course materials at KU have been ensuring the publisher's e-learning tools and materials are compatible with KU's learning management system—Blackboard. Some publishers have created the building blocks necessary for integration, but others have not. In all cases, the publishers require credentials (user codes or registration), which KU may not have. This makes testing and support difficult.

To be proactive in addressing the needs of instructors and students with regard to providing and supporting digital course materials and tools, KU Information Technology and the KU Bookstore conducted a pilot study of four courses during fall 2012. The project team's goals were to study the following:

1. Student satisfaction with the process of acquiring and accessing digital course materials at KU
2. Student satisfaction with use of digital course materials in comparison with traditional course materials at KU

3.  Instructor experience teaching with digital course materials at KU
4.  The university's readiness to provide both technology and acquisition support for digital learning materials

The goal of this pilot study *was not* to gauge learning outcomes. Furthermore, the pilot *was not* designed to scientifically measure conditions such as the readability of electronic textbooks versus traditional textbooks.

The ultimate goal of this study was to identify next steps and recommendations for the university to support faculty who choose to use more digital content in their classrooms and support students in those courses. This includes understanding how to integrate those products with KU's learning management system and supporting those departments on campus that assist faculty with course development and delivery (i.e. Center for Online and Distance Learning, Center for Teaching Excellence, etc.). The data gathered through this pilot project is intended to identify what works well, what does not, and what students and faculty would like to see provided or improved from a technology and acquisition perspective.

## *Pilot Methods*

The project team contacted faculty members at the Lawrence campus who had previously used or expressed interest in using digital course materials and invited them to participate in this pilot study. Four instructors expressed interest and were selected to participate.

Two courses were designed to be 100 percent digital and the students were provided their digital materials free of charge. A budget of $30,000 was provided by KU IT to cover licensing expenses of the other two courses, one required purchase of digital course material and the other had the option of purchasing the textbook or using a free digital copy. Three instructors used McGraw Hill digital course materials and one used Cengage.

## SURVEYS

The first student survey was taken at the beginning of the semester and was designed to assess student perceptions regarding ease of acquiring and accessing digital course materials. The second student survey was taken at the end of the semester and was designed to assess student satisfaction using the digital materials. In addition, the four faculty members were surveyed at the end of the pilot on their experience using digital course materials to conduct their classes.

## ACCESSIBILITY

As an institution, the University of Kansas is dedicated to accessibility for all students. Pilot students requesting alternative resources were referred to KU's Academic Achievement and Access Center for assistance. See "Recommendations" for more on accessibility.

## *Key Findings*

**Fall 2012 Pilot Courses:**

| Principles of Human Physiology (BIOL246) | |
|---|---|
| Instructor | Deborah Taylor |
| Enrollment | 23 Students |
| DCM Vendor | McGraw Hill |
| DCM Funding | Not provided |

| Personal & Community Health (HSES260) | |
|---|---|
| Instructor | Phil Lowcock |
| Enrollment | 321 Students |
| DCM Vendor | McGraw Hill |
| DCM Funding | Provided |

| Principles of Nutrition & Health (HSES330) | |
|---|---|
| Instructor | Marty Glenn |
| Enrollment | 262 Students |
| DCM Vendor | McGraw Hill |
| DCM Funding | Not provided |

| Introduction to Ethics (PHIL160) | |
|---|---|
| Instructor | Ben Eggleston |
| Enrollment | 239 Students |
| DCM Vendor | Cengage |
| DCM Funding | Provided |

Note: Because the pilot courses were selected using nonprobability sampling, the survey results are not accurately projectable to the overall campus environment. The complete survey results are available at technology.ku.edu/dcm-report.

Of the 845 students participating in the pilot, 300 students or 35 percent responded to the first survey and 147 students or 17.4 percent completed the second survey. These respondents were mostly freshmen, sophomores and juniors (figure 1.0). Most respondents reported majors related to health, medicine, exercise or sports.
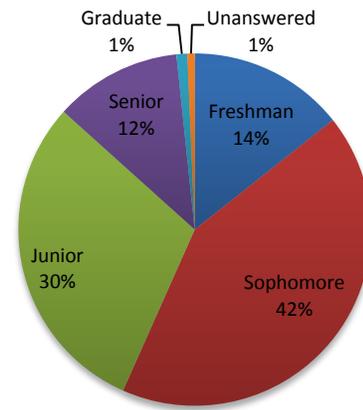
Figure 1.0 — Class standing

Of the respondents, 55 percent had used an e-book or e-textbook for a previous class.

## Student satisfaction with the ease of acquiring and accessing digital course materials

*Acquisition of course materials*

Of the 300 respondents, 157 students (52 percent) were in the courses with materials that were funded by the pilot. The remaining 143 students participated in courses where they had to purchase course materials. Of those 143 respondents who did not receive free materials, 82 percent actually purchased the digital course materials. A few of the remaining 18 percent of students said that they had not purchased the materials at the time of the survey, shared materials with a roommate or friend or received the materials through a grant.

When asked about satisfaction with the price of the digital textbook as compared to that of the printed

Figure 1.1 — Agreement with the statement,
"I was satisfied with the price of the digital
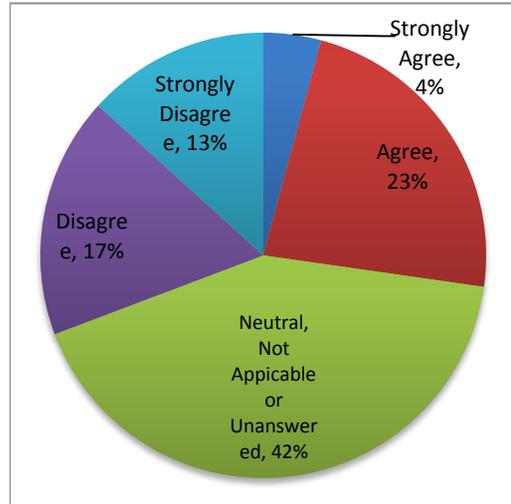textbook as compared to that of a printed
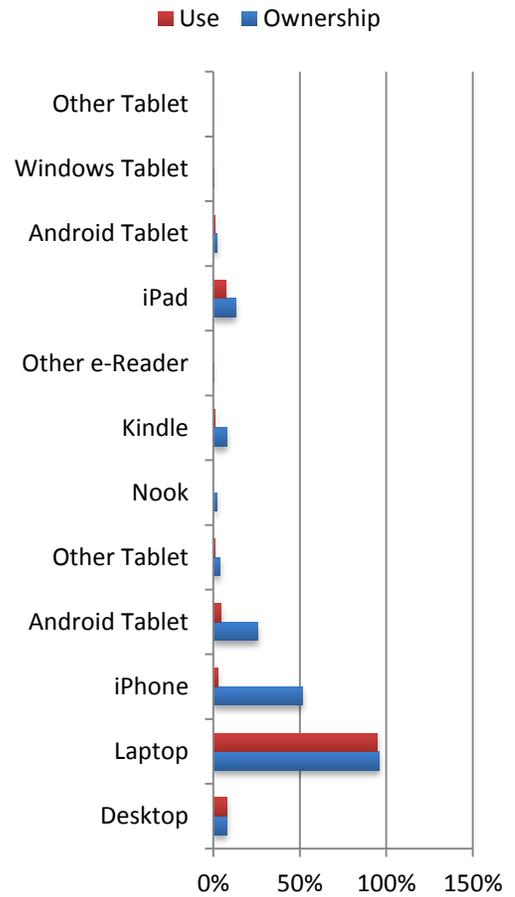textbook."



Figure 1.2 — Device ownership and use

textbook, 27 percent of the 143 respondents who had to purchase course materials agreed or strongly agreed that they were satisfied and 30 percent were not satisfied, saying they either disagreed or strongly disagreed (figure 1.1). The largest number of respondents (42 percent) was neutral, did not answer or said it was inapplicable.

Of the respondents who had to purchase course materials, 62 percent said the process of purchasing the digital course materials was easy to follow and 24 percent were neutral. Of the respondents who received course materials at no cost, all had positive or neutral responses about the process of purchasing materials.

*Access*
Students who answered the survey had a high rate of device ownership. Of the respondents, 95 percent of students owned a laptop and 7 percent owned a desktop. This means that a small percentage of students owned both a laptop and desktop and 97 percent of respondents had access to the Internet where they lived.

Of the respondents, 81 percent owned a smartphone, with the majority (52 percent) owning an iPhone. Tablet and e-reader ownership was considerably less, with 16 percent owning a tablet and 10 percent owning an
e-reader.

Although, the majority of respondents indicated that they owned a smartphone or tablet, almost 95 percent said that they used a laptop to read digital course materials. Only 8 percent of respondents used their smartphones to read course content, and 8 percent used their tablet to read course content.

When it came to general access of the course content, one student said, "It was convenient because I always have my computer on me, not always the case for textbooks." Of the respondents, 59 percent agreed or strongly agreed that the initial process of accessing the digital course material was easy to follow. However, another student said, "It makes me procrastinate more since getting to the website, logging in and getting to the text is not quite as easy as flipping open a book." Another student noted that the need to have Internet connectivity to access the material was somewhat prohibitive, especially during long road trips where he would normally do a lot of reading.

## Student satisfaction with use of digital course materials in comparison with traditional course materials

Regarding overall satisfaction with digital course materials, 65 percent of respondents agreed or strongly agreed that they were satisfied with the digital content used in the course. Also, the majority of students

(71 percent) agreed or strongly agreed that the course materials were easy to use. However, when asked if they would choose a class that required digital course materials, the responses were split: 50 percent were neutral, 25 percent would choose a class that required digital course materials and 25 percent would not.

More than 25 students provided positive comments related to the use of e-textbooks in the pilot courses. A few noted that they liked additional features such as online flashcards, audio summaries, practice quizzes and the ability to search for keywords. One student said, "I liked being able to take the quizzes at the end of the chapters over and over until I had the material down." Another said, "Being able to read the textbook on my iPad actually made me want to read the textbook, rather than just go to lectures and look at the lecture slides to study." However, not all students left positive feedback. A few students commented that the additional features were not of any use.

### Instructor's experience teaching with digital course materials at KU

At the end of the fall 2012 semester, the four instructors who participated in the pilot completed a survey. As with the student survey results, due to the size and sampling method, these results cannot be used to extrapolate to the larger faculty population at KU. The complete faculty survey with responses can be found at technology.ku.edu/dcm-report.

All faculty members agreed that they received information about e-textbook acquisition in a timely manner and understood the process well enough to assist students. Three of the four instructors were satisfied with how the digital content was delivered and found the process of initially accessing the digital course materials was easy.

All instructors either agreed or strongly agreed that they would use digital course materials in future sections of the course. However, all four classes were chosen because of previous use of digital course materials, so these faculty members may be more inclined to use them. One faculty member said, "The lower cost and ease of access were the strongest aspects. For students who like a hard copy of the text, e-text was a negative."

### Technology support for the pilot

Because of the wide variety of publishers, applications and solutions, KU's success in the past with the support and integration of e-textbooks has varied. In the 2012 fall pilot study, both McGraw-Hill and Cengage products worked as designed from a technical perspective. McGraw-Hill provided more accurate product information and support than did Cengage. The technical support team encountered fewer technical difficulties than expected and noted that most issues involved administrative tasks, such as

establishing accounts for testing the installation. The technical support team reported that organizing registration codes and user accounts and communicating with the publishers were the most difficult issues.

## *Conclusion and Recommendations*

### Collaboration to ensure integration and support

The fall 2012 pilot demonstrated that KU can provide an environment that allows students and faculty to be successful in accessing digital course materials, although the functionality and ease of use varies with each publisher's content. The KU Bookstore staff is capable of distributing and selling the required digital course materials and works with KU IT to provide student and faculty support as needed. As publishers enhance their digital products and add Blackboard integration, the use of digital course materials could continue to grow. It is critical that instructors consult KU IT and the KU Bookstore early in the process of selecting digital course materials so compatibility issues can be addressed, as some publishers currently have better integration with Blackboard than others.

Throughout this pilot we discovered there is collaboration and cooperation across campus departments on this subject. However, there is a clear opportunity for multiple campus departments, including the KU Bookstore, the Center for Online and Distance Learning, the Center for Teaching Excellence, KU Information Technology, the Academic Achievement and Access Center and others to formalize their roles in digital course materials and collaborate in providing resources and support and informing faculty of the available options. This collaborative team can help faculty find the right materials and tools for their classroom to integrate with the KU environment.

The first recommendation is for KU to formalize this collaboration and publicize it to the faculty, encouraging them to begin their digital teaching experience by contacting the collaborative group. The earlier faculty members involve the departments listed above, the better the outcome will be for functionality and experience.

### Resolve accessibility issues

Students who requested additional or alternative resources during the fall 2012 pilot were directed to KU's Academic Achievement and Access Center (AAAC). Although the goal was not to test reading ease, a few students commented in the second student survey that it was difficult or uncomfortable to read the digital text as opposed to traditional text. One student said, "I did not study from the e-book. The study guides were helpful, but those could be given without the e-book. The online book hurts my eyes to read due to my eye condition."

As previously mentioned, KU is dedicated to accessibility for all students. This commitment has been reinforced with the hiring of a director of Accessibility & ADA Education in March 2012. According to KU News, this position was created to assist in achieving the goals outlined in the report of KU's Americans with Disabilities Act task force and Goal 5: *Developing Excellence in People* of KU's Bold Aspirations strategic plan.

The second recommendation is to enlist the help of the KU Center for Educational Testing and Evaluation, the Academic Achievement and Access Center and the KU Office of Diversity and Equity to test and recommend online products based on compliance with accessibility requirements.

### Ensure we are meeting students wants and needs

Our third recommendation is for the KU Bookstore and KU IT to continue to interact with faculty to determine when digital content is of value to students from an acquisition and cost perspective and educate faculty on their pricing options.

The KU Bookstore and KU IT should schedule bi-yearly informational sessions in early March and October to discuss digital course material trends and options with faculty. KU IT and the KU Bookstore should also continue to monitor and address faculty and student wants and needs through surveys and other channels. The KU Bookstore should continue further collaboration with publishers and technology platform providers to identify solutions to meet the needs of students and faculty.

## *Appendix*

### Pilot Timeline

| Date | Task |
|------|------|
| April 2012 | Solicited faculty for participation and selected courses to participate |
| May 2012 | Determined which courses to fund |
| August 2012 | Established Blackboard integration with publishers |
| August 2012 | Notified students of pilot project |
| August 2012 | Reminded students of pilot project |
| August 20, 2012 | Team members attended first day of classes with instructors |
| August 2012 | Second reminder sent to students of pilot project |
| August 2012 | Prepared two student surveys |
| August 2012 | Created student surveys in Blackboard |
| Sept. 6, 2012 | First student survey distributed |
| Sept. 18, 2012 | Project team and faculty met to review first student survey results |
| Dec. 4, 2012 | Second student survey distributed |
| January 2013 | Compiled student survey results into a report |
| Feb. 11, 2013 | Project team met to review second survey results and began constructing project report outline |
| Mar. 5, 2013 | Faculty survey distributed |
| Mar. 14, 2013 | Project team met to review faculty survey results and finalized report |
| March 2013 | Report submitted to Bob Lim |

### Data

Visit the Digital Course Materials Pilot Web page to download the full survey results.