Chapter 4
Indiana University's Faculty-Driven Inclusive Access E-Text Program

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Introduction

Electronic textbooks (also known as e-texts) have become a viable (and often more affordable) alternative to high-cost college textbooks, whose prices increased at a faster rate than any other educational resource in the last decade [6]. In response, many universities are trying to lower the cost of textbooks for students including Indiana University (IU). The IU e-text initiative is a university-wide faculty-driven inclusive access program: if a faculty chooses to use e-text for her class, all students in the class will get access to the course textbook on the first day of class, and they maintain access until they matriculate from IU. E-text adoption at IU has been growing strongly: in 2018 alone, 2382 faculty across the university adopted e-textbooks in 4185 sections, in which over 92,000 students read e-texts that resulted in $11.8 million savings in college cost.

Success of IU's e-text initiative is driven by several distinct components of the program, including publisher agreements leading to significant cost savings, a universal e-reader to streamline the access and experience, outreach efforts, and faculty and student support [2, 10]. Among these components, faculty adoption is the keystone of the program. Therefore, this case study presents IU's e-text implementation with a focus on how it supports faculty adoption, from outreach efforts and support for integration to faculty experience with adoption and use of e-texts. To get a broad perspective of faculty experience, we interviewed seven instructors with varying degrees of engagement with e-texts, asking about their initial motivations and intentions in the adoption of e-text, the drivers that led them to sustain their adoption, and

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the factors that contributed to faculty abandoning the use of e-text. We discuss the support mechanisms that university provides to sustain and grow the e-text program. We conclude with recommendations for developing a faculty-driven e-text program at the institution level.

Indiana University E-text Program

As a response to high cost of college education and textbook prices, higher education institutions across the United States are trying to lower the cost of textbooks for students. Indiana University (IU), as a large public research institution with over 110,000 students enrolled across eight campuses, launched an e-text initiative in 2009 with four primary goals:

1. Lower the cost of course materials for students
2. Provide high-quality materials of choice for faculty
3. Enable new tools for teaching and learning
4. Shape the terms of sustainable models that work for students, faculty, and authors

In this model, faculty decide if they want to use an e-text and choose their choice of publisher and the textbook, and each student in their courses gets a copy of the e-text and maintains their access until they matriculate from IU. This program started as a pilot but became a university-wide initiative in 2012. Since then, E-texts Program at IU has constantly grown, resulting in more than $48 million savings in textbook cost for students. Figure 4.1 provides a snapshot summary of IU's eTexts Program in terms of number of courses, unique textbook titles, and unique students it has reached as of summer 2019.

Description of the Success Drivers

IU's e-text program offers some distinct features that present the program as a model for e-text use in higher education.

- Faculty choice: Maybe the most critical factor behind IU's e-text model is that faculty have full control on their textbook selection. Adopting an e-text is an option, not a top-down strategy or a requirement. Instructors can choose to teach with an e-textbook, selecting from quality publisher-provided content while saving students significant cost. This was frequently communicated in all e-text communications.
- Publisher agreements: All Students Acquire (ASA) model offers significant cost savings for students while paying the content creators/authors and the publishers

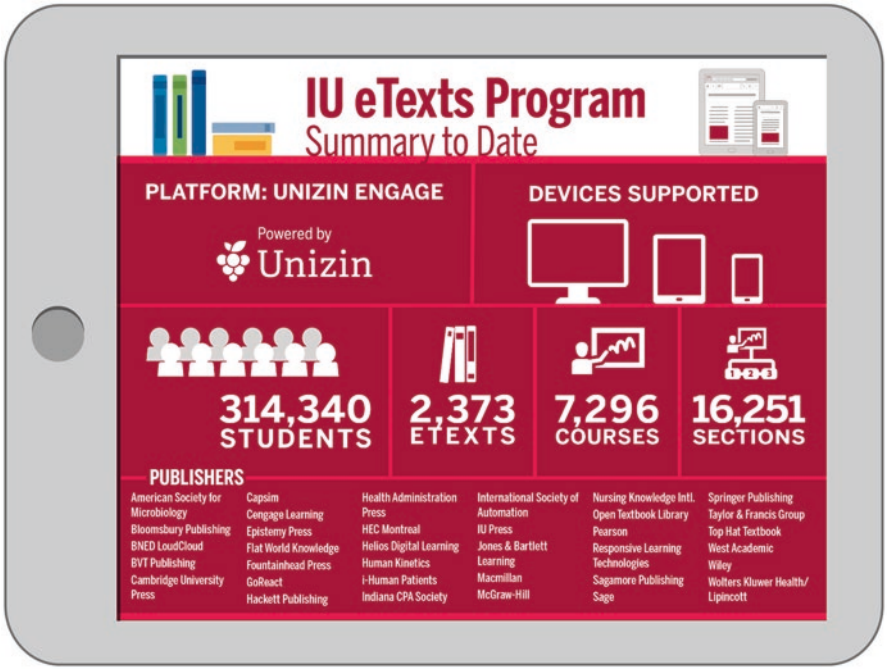

Fig. 4.1 Snapshot summary of IU E-Text program

fairly. With this model, IU negotiates with the textbook publishers directly or through Unizin Consortium, which handles negotiations for the consortium member institutions. Also known as *all-inclusive* or first-day access model, this agreement means the university volume purchases the selected e-textbook for each enrolled student in a course, which is then passed onto the students through Bursar billing. This allows IU to receive up to 65% discount on the list price of the textbooks. IU's agreement with publishers also enables students to maintain their access to the e-texts throughout their matriculation and print parts or the entire textbook without restrictions. More information on IU's publisher agreements is available in Wheeler [13].

- Universal e-reader platform: One single e-reader platform for all e-textbooks in the program, regardless of its publisher, lowers the resistance for e-textbook adoption and provides a streamlined and interactive experience for both faculty and students. Students do not need to create new or multiple accounts for multiple e-textbooks; they get to maintain access to their e-textbooks after any course as long as they are students at Indiana University. This reader also offers interactive features such as bookmarking, highlighting, and annotating, as well as ability to interact with classmates (through sharing notes) and the course instructor

(through question and answers). In addition, instructor bookmarks, highlights, and notes are automatically shared with students, which eliminate the need for another channel/medium (e.g., LMS message or announcement or discussion forum) to communicate textbook/content-related information.

- Outreach efforts: Communication with faculty on several fronts was paramount to adoption of e-text by the faculty. From the very beginning, the program leaders perceived the implementation of e-text initiative a cultural change, not just a new educational technology to adopt. Therefore, they followed an inclusive socialization process, in which they reach out to faculty frequently through multiple channels (e.g., emails, listservs, social media, and face-to-face in meetings and events) and by leaders who are empowered via their academic/university leadership positions. In this process, they solicited feedback from the faculty, answered questions, and eliminated the myths and rumors around the e-text program. Since its full implementation, IU's e-text program continues to outreach and engage with the faculty in order to increase adoption, support faculty use, and improve the program. To this end, dedicated staff for IU's e-text program serves as a central point of contact and liaison for all stakeholders, manages the operational functions of the program, and works with campus teaching centers to deliver workshops, webinars, and other instructional activities to promote the best-practice use of e-texts across all campuses of Indiana University. More information is available in Gosney and Morrone [14].
- Faculty and student support: Continued support for faculty and students is another key aspect for successful adoption and continued growth. Support for faculty starts with the ordering phase and continues throughout the use of e-text (from loading it to course LMS site and creating markups to monitoring student usage and transferring notes to another semester) through online and in-person means. As noted above, the dedicated e-text staff is the first line of support; however, staff in campus teaching centers are also equipped with the foundational knowledge to assist faculty for implementing the e-text into instructor's curriculum. Most of this information is also available on a project site on the University's LMS (Canvas), so that the instructors can access at any time. As of summer 2019, IU launched another Canvas site (Introduction to Using eTexts) for instructors with additional multimedia resources and best practices for teaching with e-texts. As created by university's instructional consultant team, this site provides video tutorials on Engage e-reader platform functions and features and offers instructional approaches to using e-text (and its features) effectively. Student support includes helping them with initial subscription (if they prefer a print copy or decide not to use e-text), offering training materials (online) on how to use the e-reader platform, and addressing any other technical issues they may encounter. Similar to the instructor support site, IU has a "Student Guide to IU eTexts" LMS site to offer anytime help and support for students. This site can also be integrated to any course LMS site as a module.

Adoption Versus Engagement: A Case Study

As we described above, faculty adoption is the keystone of IU's e-text program. Our previous research show that faculty also play a key role in how much students engage with e-textbooks [2, 3]. In a faculty-driven e-text program, understanding faculty's motivation for adoption and practices to use e-text becomes important for sustainability and growth of the program. Many studies with e-texts have tended to focus on student or faculty preferences and have been informed through voluntary survey methods (e.g., [1, 5, 7, 8]). While helpful in framing an understanding of e-text adoption within higher education, these investigations lack insight into the ways in which the varying factors of teaching and learning designs impact the implementation and application of any particular tool. As these factors have been highly supported in determining the efficacy of an educational tool for supporting teaching and learning, understanding the ways in which these aspects interact with the implementation of a tool is necessary for furthering the design, development, and implementation of educational technology across contexts. In order to understand the nuances of instructors' use of e-text and get a broad perspective of faculty experience, we adopted case study methodology [12] and interviewed seven instructors with varying degrees of engagement with e-texts, through a stratified sampling procedure. This procedure is outlined as follows:

- The log data of IU's e-texts from 2014 to 2018 was aggregated for instructors' and students' page views, highlights, notes, questions, and answers for each class. This resulted in 7470 courses, 1458 unique instructors, and 88,387 unique students that were within the scope of this analysis.
- From these descriptive summaries, it was determined that not all courses substantively used the annotation features (highlight, note, and question/answer) of the e-texts. Therefore, each class's median and instructor usage of page views and highlights was then compared with the grand median for all classes within that semester and for the specific campus within IU's system in which the class occurred.
- If an instructor's usage of the e-text was above the median instructor usage for that semester and campus, then the instructor was determined a "high" engager within the e-text; otherwise, the instructor was considered a "low" engager with the e-text. Similarly, classes whose students' median usage of page views and highlights was greater than the grand student median usage of page views and highlights were identified as a "high" level of student engagement with e-texts within the course; otherwise, the class was labeled as exhibiting a "low" level of student engagement with e-texts.
- From these classifications, stratified random sampling was used to select 20 potential courses for specific focus. Each of these instructors was contacted with a request for a brief, 30-min semi-structured interview wherein they could discuss the motivations, adoption, implementation, and application of e-text use in their courses.

Table 4.1 Course descriptions

Identifier	Subject/discipline	Level	Required in curriculum?	Delivery mode	Class size
Course 1	Anthropology	100	Yes	Face-to-face	35
Course 2	Philosophy	100	No	Online	33
Course 3	Political Science	100	Yes	Online	50
Course 4	Applied Sciences	200	Yes	Face-to-face	189
Course 5	Journalism	300	Yes	Face-to-face	24
Course 6	Public Health	300	No	Face-to-face	14
Course 7	Public and Environmental Affairs	400	No	Online	22

Of these 20, seven instructors agreed for an interview. These instructors also allowed their course e-text usage to be examined and provided a syllabus of their course. Course features and e-text usage by instructors and students are summarized in Tables 4.1 and 4.2, respectively.

Four out of seven courses were required in the respective curriculums. Except for Course 3, all instructors continue to use e-text in their courses. All but one instructor required students to complete the assigned readings (instructor in Course 6 did not require because he thought that it would not be fair to ask of students in an elective course). Except one instructor (Course 7), instructors made use of annotation features of e-texts, mainly using highlights and notes.

We analyzed the interview data according to "low" and "high" engagement classification, which was informed by the e-text usage data in Table 4.2. This enabled us to view instructor and student engagement in an engagement quadrant as depicted in Fig. 4.2.

Low Instructor Versus Low Student Engagement

- Instructor in Course 4 (2xx – Applied Science), who has been teaching at IU for 14 years and teaching with e-texts for the last 4 years, switched to e-text because she wanted everything to be online in a course she was going to teach online. Once switched, she also realized the cost savings for students; thus, she now uses the e-text for both her online and face-to-face courses. She also likes that first-day availability of the e-text relieves students from the excuse of not having the book. She uses e-text similar to a paper textbook as her use of annotation features is minimal (31 highlights). Moreover, she does not promote interaction through e-text for her students. In the past (one semester), she tried offering extra points for student markups, but it did not enhance student engagement. She also does not like the fact that the e-text platform does not send a notification (via email) if she gets a question through e-text. Instructor 4 also explains the low e-text engagement with the large size of her class as she noted "I don't know how much it serves as an interaction tool…it might be better in a smaller setting, like a small

Table 4.2 E-text usage by instructors and students

		Instructor usage				Student usage (average)			
Course	E-text Size(pgs)	Views	Highlights	Notes	Answers	Views	Highlights	Notes	Questions
Course 1	512	173	464	198	0	156	3	0	0
Course 2	475	110	93	8	0	222	54	0	0
Course 3	768	490	12	23	0	289	83	1	0
Course 4	568	42	31	1	0	50	6	0	0
Course 5	708	251	32	92	176	190	11	2	7
Course 6	704	1,113	8	101	0	176	102	2	0
Course 7	768	3	1	1	0	155	9	0	0

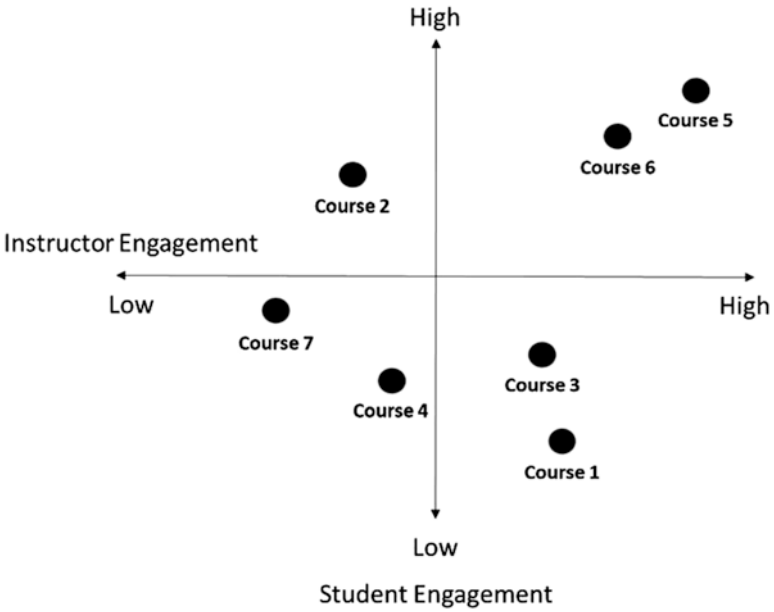

Fig. 4.2 Course distribution by instructor and student engagements with e-texts

class." She requires students to read the assigned chapters each week and assesses student reading through quizzes. She also monitors student reading activity in Engage Analytics interface, and she uses the reading analytics as a focal point in the office hours with struggling students.

- Instructor in Course 7 (4xx – Public and Environmental Affairs), who has been teaching at IU for 16 years and teaching with e-text for 3 years, started using e-texts mainly because of first-day availability and cost savings for students. She continues to use for these reasons. She has the lowest number of markups in e-text among the interviewed instructors, and she does not expect students to interact with e-text beyond weekly readings. She does not believe that using e-text creates a different experience for students; she argues that getting students to read the assigned text is a challenge (even for 20 min a week for her class). Thus, her class has weekly assessments that are directly tied to readings. Despite her low engagement with the e-text, instructor 7 often makes links and references in her online course site, such as links to the text in the discussion forum and case studies.

Low Instructor Versus High Student Engagement

- Instructor in Course 2 (1xx – Philosophy), who has been teaching at IU for nearly 20 years and has been teaching with e-text for 4 years, describes his motivation to switch as mainly cost advantage for students. While he still prefers paper text-

book, he acknowledges the benefits of e-texts such as sharing notes and highlights with students and being able to copy these annotations from semester to semester. "I like the idea of highlighting the text. I want to point out extremely important points to them [referring to notes and highlights]… so they wouldn't forget it…I haven't used much of answering student questions but I plan to use these features," he noted. As a result, he engages with the content and students through e-text. He does not promote student use of e-text markup features, but he noted that students had other means (i.e., email and discussion forum) to ask questions in his online class. Similar to Instructor 4 and 7, he assigns weekly quizzes, in which questions come directly from e-text. Students can take a quiz multiple times, but they need to answer 90% of the questions correctly to be able to move forward. It may be this requirement or because the e-textbook for this course has the lowest number of pages in this case study that students had the highest average reading percentage (47%), thus making it a high student engagement course.

High Instructor Versus Low Student Engagement

- Instructor in Course 1 (1xx – Anthropology), who has been teaching at IU for 18 years and teaching with e-text for 8 years, wanted to have an online textbook when she was asked to teach course online the first time. This e-text is now a department-wide textbook for both online and face-to-face courses. She describes the e-text and the course as being very dense such that her department considers splitting the course into two. In terms of her markup use within e-text, she has the highest number of highlights and notes among the studied courses. Her use of markups is intended to guide the students for quizzes and lab assignments, with notes such as *this is what you need to remember*. She transfers her markups to new semesters and updates them as needed. As she usually gets freshman students for this introductory course, she emphasizes how to use the e-text, Canvas (LMS), on the first day of class for her face-to-face class; she tries to do the same for online students through her "how to be successful in this class" notes. Despite her efforts to guide student attention in the e-text, her students are not as engaged with the e-text as she desires. She thinks that 60% of the students do not read the book, regardless of course or textbook being online. She believes that e-texts make it easier for students not to read.
- Instructor in Course 3 (1xx – Political Science), who has been teaching for 14 years and teaching with e-texts for 5 years, is one of the first adopters of e-texts at IU. His motivation to adopt an e-text was to make the course site (LMS) more "self-contained" providing the textbook content also online. However, he discontinued using e-text for this course due to the technical issues he encountered as well as not seeing students substantively engaging with the text. Even though he encouraged students to use the markups, particularly asking questions and sharing notes with other students within e-text, he did not receive any ques-

tions. He could see the use of markups through the analytics feature but could not see the content of the exchanged notes. He wished that analytics tool would allow instructors to do more analysis such as correlating grades to online reading or engagement.

High Instructor Versus High Student Engagement

- Instructor in Course 5 (3xx – Journalism), who has been teaching at IU for 7 years and teaching with e-texts for 5 years, was initially motivated by the cost advantage of e-texts. He later discovered some of the pedagogical affordances of the e-texts' interactive features such as questions and answers. Thus, he regularly uses markup features of the e-text in his courses. Particularly, he requires students to ask a question or express a thought through question feature within e-text every week. He then answers these questions before class time. Based on the questions he receives, he also plans the points of discussion as well as points for clarification during the class time. In addition, he makes updates to the textbook content as needed; content can change quickly, or an update to a particular case might be necessary due to the nature of course subject (i.e., Journalism). Instructor 5 is the only one in this study, and one of the few among all IU instructors, who utilizes question feature to enable student-instructor-content interaction through e-text. He believes that "it has an incredible impact on the quality of interaction between student and content." As he points out, though, it is difficult to attribute learning to this interaction. Nevertheless, he received positive student feedback in the end-of-course evaluations that the use of e-text enabled them to focus in this content-heavy course.
- Instructor in Course 6 (3xx – Public Health), who has been teaching at IU for only 1 year and teaching first time with e-text, adopted this format primarily due to the cost and availability reasons. He quickly recognized the additional advantages that markups can offer. As he noted, "I did try to mark some things that we would be focusing on. There were a few places I would use the markup feature to emphasize some places where something was the author's opinion or, frankly, if they got something wrong." His course is not a required one for any programs in the department; thus, he did not feel compelled to make the readings required. Similarly, he did not require students to use markups in the e-text. Unlike other courses in this analysis, the course did not have any assignment or quiz to assess student reading. Nevertheless, e-text usage statistics (Table 4.2) show that students were fairly engaged with the content. Self-selection of the course (elective compared to a required course) might be a factor in students' interest or engagement with the course content.

Discussion

Reasons for e-Text Adoption

Our interviews with instructors indicate that cost advantage of e-text, which is significantly higher in IU program compared to typical e-text options, is the primary reason for instructors to adopt. As in the case of Instructor 2, this might convince them against their preference for paper textbooks. This is not surprising, given that cost is the number one concern for the faculty while choosing educational materials, according to Allen and Seaman's report on faculty attitude toward open textbooks [4]. This report also highlights that cost issue is often contrasted with quality issue, which deters faculty from adopting an open textbook. IU's e-text model may be lowering faculty's adoption as faculty do not feel that they need to give up quality for affordable price. Another common reason for e-text adoption is to make their online courses completely online/digital. Once instructor makes the switch, it is common that they continue to use e-texts and adopt e-texts for their other courses. The only exception to sustained use was Instructor 3, who encountered technical difficulties with the particular e-text he used. There are many barriers to adopting an educational technology, including personal belief and attitudes, reliability of technology, or institutional/technical support [11]. These factors continue to play a role in sustaining the use of educational technology.

Engagement with e-Textbooks

As the e-text reading platform in IU's program offers interactive markup features such as shared instructor annotations, questions and answer features, and markup features for student use, we examined how instructors and students used these features in the courses we studied. Some of the instructor adopted e-text merely as a replacement to their paper counterparts, utilizing the markups minimally and not expecting the students to engage with the e-text beyond reading. On the other hand, potential benefits of the interactive markup tools attracted some other instructors. For example, *Instructor 1* used highlights and notes (shared with students) extensively to show where students need to pay attention for the course assignments in her content-heavy course. Despite her efforts, students' engagement with the e-text was low. In contrast, *Instructor 5* adapted his pedagogy around the question/answer feature in his course and required students to ask a question or express a thought through the e-text on a weekly basis. He then answered these questions and brought these points to the class discussion. This resulted in a high engagement and interaction between the instructor, students, and the content. These two examples suggest that when the technology affordances are coupled with the appropriate pedagogy, technology use may lend itself to better engagement and learning. Our data also show that student engagement, and engagement with course content in particular, is

also influenced by student factors. To illustrate, students in *Course 6* were highly engaged with the course content even though the readings were not required in this elective course. It is possible that students were self-motivated to read as they chose to take this course, as opposed to having to take a course to complete degree requirements.

Conclusion

Indiana University has a successful and growing university-wide, faculty-driven, all-students-acquire e-textbook program, which has saved its students over 14 million dollars in textbook cost since it started in 2012. We believe that success of this program lies in faculty interest and choice; all students acquire model negotiated with publishers, careful outreach and communication efforts adopted by program leaders and dedicated staff, and technical and pedagogical support for faculty and student users. Over 5 years into the full implementation of the program, our interviews with several instructors showed that adoption of e-text still stem primarily from cost savings. However, they also utilize markup features of the e-text platform to varying degrees. In comparison, student engagement with e-text might vary depending on instructor's pedagogical choices, student maturity in the program (freshman vs more senior students), or nature of the course (required vs elective).

IU's e-text program demonstrates that institutional adoption of e-textbooks can benefit students economically at a time when demand for college education is high and so is cost of attendance. However, it is not an easy undertaking and requires putting the faculty at the center of decision-making. As IU's program became successful, program leaders received inquiries from other higher education institutions that were considering similar solutions. To share IU's insights and lessons from the program with the higher education community, we published a free e-book, eTexts 101: A Practical Guide [10]. The book's first section relates the story of how IU developed and implemented its eTexts Program, the second offers perspectives from several publishers who have participated in the program, and the third provides reports from other universities on work they are doing to address the textbook issue.

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