Exploring Academic Access to Information

An Investigation of the Foundations and Limitations

In recent history, the textbook industry has prioritized income over education. According to a study conducted by the U.S. Public Interest Research Group [1, 2], the average student spends about $1,200 on textbooks every year and nearly half of them "said that the cost of textbooks impacted how many/which classes they took each semester." The same study [2] showed that 65% of surveyed students "said that they had decided against buying a textbook because it was too expensive." Yet, "94% of them were concerned that doing so would hurt their grade in a course." Due to the cost of textbooks, students must now either struggle with the information that they have already paid tuition to receive, or suffer an additional significant cost in order to attain it.

Since the introduction of eBooks and alternative sources of educational content, however, the focus of the textbook industry's business model has started to adjust to changing collegiate buying habits [3], [4]. In response to these changes, the goal of this capstone project is to understand the current effect of the implementation of pedagogical technologies into the classroom. This project represents a collaborative effort between University of Washington Undergraduate, Daniel Sandoval, and California State University Masters Candidate, Nathan Sandoval. In our research and ideation we aim to become aware of the current limitations of access to academic information in hopes that it will be distributed more evenly, in the future.

We will be focusing our research and ideation on the current issues in student, faculty, and bookstore use of textbooks in an academic environment. We will be attempting to answer the following preliminary questions:

- What information is accessible to undergraduates through physical and digital mediums?
- For what reasons has this information been made available in its provided form?

Project Milestones

Our research will follow a User Centered Design process, which includes an initial literature review, primary and secondary stakeholder research, and ideation. Our ideation process will consist of generating design scenarios and possible solutions to problems we discover through analysis of our research. Following the research and idea generation that I, Daniel Sandoval will conduct, we plan on generating a formative research paper. This paper will describe the current advantages and difficulties present in the relationship between academia and industry.

Milestone 0: Secondary User Research/Literature Review (Up to Week 2)

During this time, I will research related work including the study of digital technology – in particular eBooks as opposed to physical textbooks. I will use this knowledge to gain a better understanding of the historical effects of the textbook industry on access to academic information. The only deliverable for this milestone will be a set of notes, which will be added to throughout the course of the project.

Milestone 1: Student and Faculty Oriented Interviews (Weeks 2-5)

Interview questions will be generated from preliminary questions and findings from Milestone 0. In this milestone, I will develop a consumer-based understanding of the use of physical/digital textbooks. I plan on utilizing qualitative coding and concept mapping in order to thematically analyze my interview data. If time allows, I plan to conduct a campus-wide survey to confirm any preliminary conclusions. Meanwhile, I will continue to develop rapport with textbook manufacturers and bookstore(s) as I have previously met various gatekeepers in these domains.

Deliverable: Survey Results and Thematic Interview Analysis

Due April 29, 2015 (Week 5) – Available for feedback during Week 4/5 class time

Milestone 2: Bookstore and Textbook Industry Interviews (Weeks 5-8)

Interview questions will be generated from the preliminary questions and results of Student and Faculty oriented interviews. I will focus these interviews on current business models and how they have changed (or not) according to the introduction of digital technology as a gateway to academic information. As in the previous milestone, I will be using the concept mapping technique to generate a thematic understanding of my interview data. My goal for this milestone is to develop a business-oriented understanding of the industry in the context of providing the best academic experience to students and educators.

Deliverable: Flowchart Map of Textbook Industry and Thematic Interview Analysis

Due May 20, 2015 (Week 8) – Available for feedback during Week 7/8 class time

Milestone 3: Concept Mapping and Scenarios (Weeks 8-10)

Using concept mapping and scenarios as a basis for iteration, I would like to connect the goals of both business and academic stakeholders in order to understand the underlying motivations of both. From these, I will generate problem statements and possible solutions. I would like to bring these statements and solutions to my studied stakeholders to conduct a member check and gather feedback for additional design considerations. After multiple iterations of this process, our team should have enough information to provide a basis for our final deliverable. I plan to work on both the Final Poster and the Idea Book at this time in order to have the poster ready for the HCDE Open House on June 4th.

Deliverable: Design Scenario(s) and Idea/Iteration Book (shows process)

Due June 3, 2015 (Week 10) – Present in-class for feedback and credit

Final Deliverable: Evaluative Research Report (includes concepts generated from Milestone 3)

Due June 8, 2015 (Monday of Finals Week)

During this project, we will be keeping a private blog to post updates in the form of status reports visible to our classmates, mentors, and team. Upon completion of the capstone, we will publically publish this blog in order to protect our team's rapport and intellectual property for the duration of the project.

Every week, we will meet to discuss the project's status and current direction. These weekly updates will increase group accountability as well as provide a chance to ensure that the project course stays within the projected timeline. In Nathan's Masters work (which will continue beyond the scope of this project), he intends to understand and improve access to information by researching the interaction between students and digital technology in the classroom. Daniel's research will act as a foundational work for this study as it will contain a heuristic evaluation of textbook manufacturing and use as well as a review on current research of digital technology in the classroom.

Resources

Student/Faculty Interview Subjects	Provided by access to University of Washington faculty and staff. To ensure accountability, we will schedule interviews 2 weeks in advance.
Textbook/Bookstore Interview Subjects	Provided by access to our bookstores via personal and collegiate connections. We will continue to gain rapport with textbook manufacturers through faculty connections and current networks within the Seattle tech community.
Similar Work	Provided by access to both University of Washington and California State University library systems via team member affiliations.
Survey Design Software	Free utilities (like google forms) are available. We can also develop a custom website, if necessary.
Poster Design Software	Both team members have access to the Adobe Creative Suite.
Presentation Design Software	Microsoft Powerpoint provided with UW and CSU technology funding.
Qualitative Coding and Analysis Software	Atlas.ti provided at reduced cost due to student semester discount

References

[1] S. Baum, 'Trends in Higher Education 2013-14', *College Board*, 2014. [Online]. Available: http://trends.collegeboard.org/collegepricing/figures-tables/average-estimated-undergraduate-budgets-2013-14.

[2] U.S. Public Interest Research Group Education Fund & The Student PIRG, 'Fixing the Broken Textbook Market: How Students Respond to High Textbook Costs and Demand Alternatives', U.S. Public Interest Research Group Education Fund & The Student PIRG, pp. 11-12, 2015.

[3] J. Mitchell, 'A Tough Lesson for College Textbook Publishers', WSJ, 2014. [Online]. Available: http://www.wsj.com/articles/a-tough-lesson-for-college-textbook-publishers-1409182139. [Accessed: 13- Mar- 2015].

[4] I. Opidee, 'College textbook forecast: Radical change ahead', University Business Magazine, 2015. [Online]. Available: http://www.universitybusiness.com/article/college-textbook-forecast-radical-change-ahead. [Accessed: 13- Mar- 2015].