Chapter 7

Water on a Hot Skillet

Textbooks, Open Educational Resources, and the Role of the Library

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Abstract

The rise of emerging technologies and the evolving needs of scholars have emboldened libraries to experiment more directly with digital scholarship. This chapter of The No Shelf Required Guide to E-book Purchasing *examines the problems associated with print textbooks and how electronic textbooks, although still an emerging technology, provide a viable future alternative.*

Overview and Context for Action

To promote change in the economics and publishing of scholarly information, libraries have well-established roles as advocates and educators about the nature of the scholarly communication cycle. Libraries can move adeptly to gather and present information about important scholarly communication issues, such as the National Institutes of Health (NIH) mandate for dissemination of funded research, and position themselves as expert advocates in support of positions such as authors' rights and copyright.[1] This advocacy role has largely been determined by the historic role of the library in the scholarly communication cycle—one of collecting, preserving, and brokering access to large quantities of scholarly information on behalf of an academic community. While not contributing as direct actors in producing or publishing scholarship, the traditional library role in impacting scholarly communication practices has logically centered around purchasing and advocacy. Change in scholarly publishing has been painfully slow and remains largely in the hands of scholars. The interdependency in the cycle of scholarly communication of libraries and scholars and the complicated relationship of academic publishing to promotion and tenure have made the possibility of libraries taking more direct action difficult.

Recently, however, the rise of emerging technologies and the evolving needs of scholars have emboldened libraries to experiment more directly with digital scholarship. While scholars remain largely focused on established channels for publishing scholarly information, many libraries have shifted their focus to scholarship that lacks established distribution and publishing channels or scholarship that is not integrated so closely with promotion and tenure. One such type of scholarship is the textbook market. Library experimentation in the textbook area is a logical outgrowth of technological developments in textbook publishing and libraries. As technology continues to broaden access to knowledge, traditional textbook publishing models increasingly stand in the way of progressive innovation. Textbooks, specifically the emerging digital textbook models, are a quickly evolving form of scholarship that presents both challenges and opportunities for libraries.

Although the North Carolina State University (NCSU) Libraries' initial steps in the textbook environment began in the traditional scholarly communication roles as advocates and information providers, we quickly realized that we could be direct actors and effect more change by experimenting and promoting new textbook models as part of our overall curricular resource strategy. Over the past few years, we've seen a growing interest in electronic educational resources and a move toward digital textbooks as a way to help financially distressed students. Burdensome textbook

prices cause students to share, pirate, and even do without required course texts. Indeed, textbook prices and fees have recently been cited as one of the top two factors in students not completing college.[2]

In contrast, new, affordable digital textbook solutions are emerging, including innovative models of open textbooks that leverage online access and low-cost alternative formats to enhance accessibility. The NCSU Libraries has experimented with both print and digital textbook models to introduce new, innovative textbook publishers to our campus, to engage our students and faculty in investigating potential textbook models, and to work with students directly on tackling the issue of textbook affordability.

Starting as Advocates

The textbook initiative at the NCSU Libraries evolved to meet a clear and growing need on our campus. The University of North Carolina (UNC) system, to which we belong, issued a resolution in 2006 calling on its universities, bookstores, and faculty to consider new strategies to aid in lowering textbook costs for our students.[3] The resolution required that all system universities gather information on textbook costs on their respective campuses and propose strategies by which they could reduce student expenditures on textbooks. The universities responded by launching rental programs, forming a consortium for bulk purchasing of textbooks, encouraging instructors to retain textbooks for multiyear class sequences, and implementing guaranteed buy-back programs, all in an effort to lower costs and reduce the likelihood of students getting stuck with books that have little or no resale value.[4]

In the NCSU Libraries, we heard the call and immediately recognized the problem as a familiar scholarly communications issue. As experienced advocates and professionals who were well-versed in the trials and tribulations of the inelastic scholarly publishing marketplace, we felt we were well-positioned to take a leadership role in the textbook initiatives on our campus.

Our first step was to launch a website to promote awareness of rising textbook costs and open textbook models (see figure 7.1). We conceived the site to be a clearinghouse for practical, viable solutions to the textbook problem. The site launched in 2008 and examines the textbook market from the affordability perspective and presents arguments in favor of open textbooks and new textbook models. Our initial progress was aided by the work of Jordan Frith, PhD student in communications, rhetoric, and digital media. Frith authored a white paper on open textbooks, which we made available for downloading on the site.[5]

At the same time, we sought opportunities for collaboration with the NCSU student body. The NCSU student government had begun holding open meetings to discuss the issues surrounding textbooks from the student perspective. We sent senior library staff to these meetings and encouraged the students to consider the library as a partner in the fight against high textbook costs. These meetings with student representatives led to the establishment of a textbook reserve collection at the NCSU Libraries.

The NCSU Libraries' foray into directly impacting textbook options and affordability for students first came in the form of a print collection of textbooks on reserve (see sidebar), but quickly grew to encompass experiments in digital textbooks as part of a growing curricular resource strategy. The libraries agreed to purchase and provide at least one copy of every required textbook for fall and spring semester classes. The libraries currently make over 4,500 required texts available on reserve each year. These volumes are offered for short-term checkout to ensure availability to as many students as possible. Although the purchase costs were substantial, the potential cost savings for the campus easily recoups the expenditure. Assuming a relatively modest cost per volume of $50 and that a low-ball estimate of five students using each book in the collection, this textbook reserve program saves NCSU students more than $1 million per year.

Following the successful textbook affordability advocacy work and the provision of required print course books on reserve, the NCSU Libraries plunged into more direct experimentation in the textbook arena in partnership with the physics department. The head of the physics department contacted us

Course Books on Print Reserve

Based on student feedback in Fall 2008, the NCSU Libraries implemented a comprehensive program in Spring 2009 to acquire at least one copy of every required textbook—2,400 in all—and place them on Reserve for students. The University Bookstores provides the list of all the textbook adoptions from faculty on campus. The Libraries then identifies what is already in the stacks, on Reserve, and what needs to be purchased. The purchase requests are sent to the Bookstores, where they are ordered and shipped to the Libraries in time for the start of the semester. Use has steadily increased from 10,315 circulations in Spring 2009 to 24,700 circulations in Fall 2010. Costs have dropped accordingly from the initial investment of $89,951 in Spring 2009 to $16,097 in Fall 2010. These somewhat surprising results—heavy use with stabilizing costs—lead us to conclude, at least for the near and medium term where print textbooks remain strong in the marketplace, this type of program is a reasonable part of any library's curricular resource strategy.

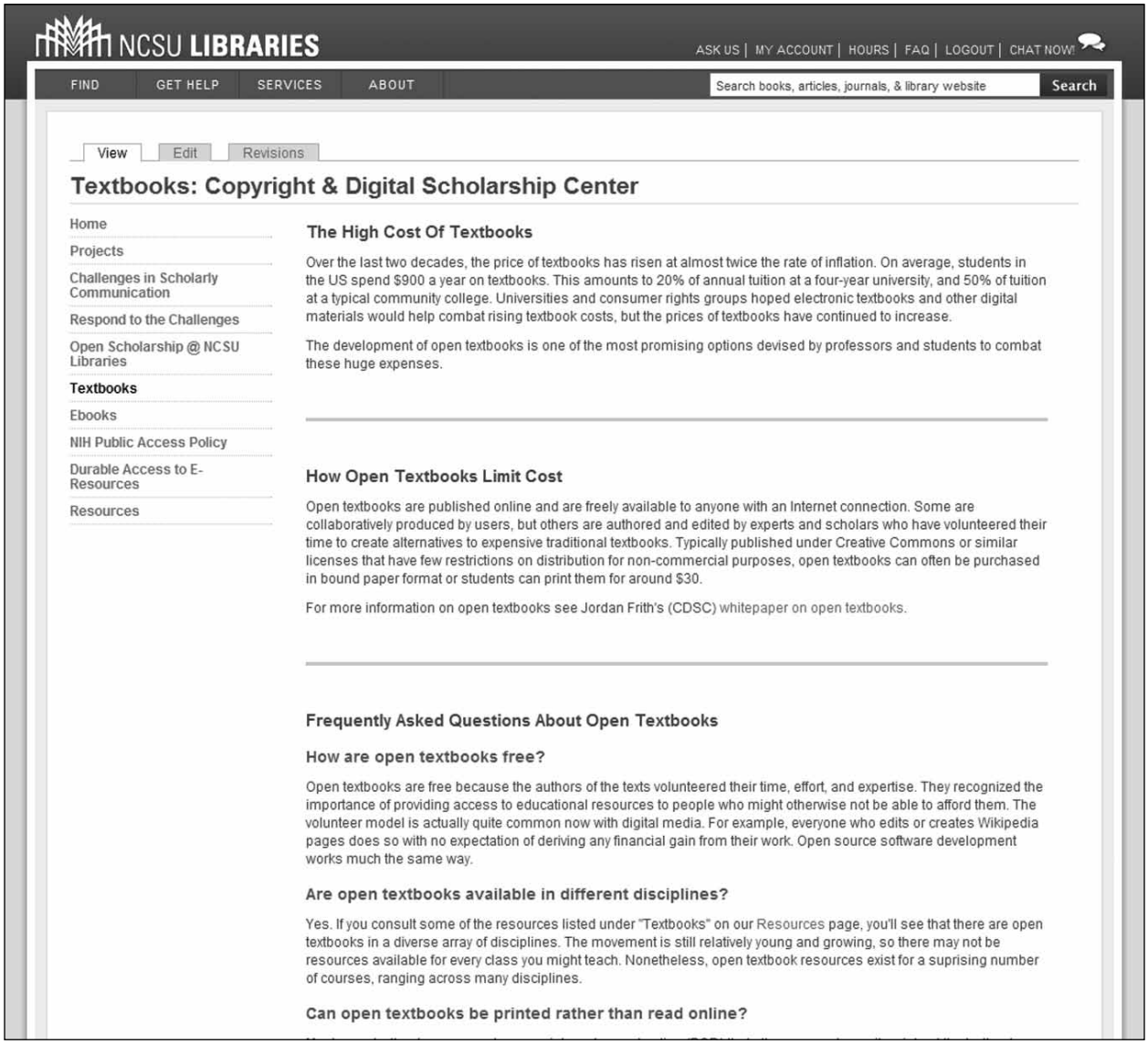

Figure 7.1
Screenshot of NCSU Libraries' textbook site.

about purchasing and hosting a digital textbook for its required introductory physics courses. His department had been concerned about the escalating costs of textbooks for some time. He had read the open and alternative textbook advocacy website material from the libraries and had finally identified a suitable, alternative electronic textbook for the department's use. It selected *Physics Fundamentals* by Dr. Vincent Colletta, which was released by an experimental publisher, Physics Curriculum and Instruction.[6]

Encouraged by the physics department's desire to break the textbook mold and excited by the chance to directly promote a more sustainable and cost-effective textbook model, we negotiated a deal with the publisher to purchase a site license for all NCSU students, faculty, and staff. Nearly 1,300 students take the introductory physics courses in an average year. A traditional physics textbook typically sells for $150–$190 each; the costs for traditional texts for this course alone would be well over a quarter of a million dollars. In contrast, *Physics Fundamentals* was made available online through the libraries' website for a negotiated $1,500 site license.

We released publicity about the collaborative effort between the libraries, the alternative publisher, and the physics department. The response was immediate. Positive stories appeared in local and national news: the *Technician*—the NCSU student newspaper, the *Raleigh News and Observer*, and the *Chronicle of Higher Education*.[7]

> Dr. Michael Paesler, head of the Department of Physics, said rising textbook costs prompted the department to look for a more sustainable and cost-effective way to provide quality, peer-reviewed textbooks to their students.
>
> "We've been talking about this for at least 5 years. This was the first time we felt there was a real option, and a quality option that would indeed save students money," Dr. Paesler said.[8]

While pleased with the publicity, we struggled to understand why this effort, among the many innovative ideas we incubate and attempt, gained this level of attention. When a colleague remarked that textbook costs and affordability are like "water on a hot skillet—anything new and interesting sizzles and gains attention," we began to grasp the scope of possibilities in directly experimenting with alternative textbook models.

Interest among faculty in other alternative publishers, like FlatWorld Knowledge, soon followed. The adoption rates of licensed electronic book content from commercial publishers like Springer and Morgan and Claypool for use as textbooks grew quickly. Electronic books offered from the library had entered into the pedagogical thinking of a small but influential group of faculty who began to leverage these licensed materials and learning technology tools offered by the university and the libraries in an effort to move away from traditional textbooks and save money for students. A dozen or so faculty dropped textbook requirements altogether in favor of a mix of licensed electronic books, licensed electronic journals, and open educational resources.

There are a number of ingredients that enabled the success of the NCSU Libraries' engagement and experimentation with new textbook models and licensed electronic book content:

- **Advocacy and awareness.** Advocacy initiatives helped educate stakeholders and provide the interested faculty with alternatives and reliable information about potential options for making changes in their course book selections.
- **Dissatisfied stakeholders.** Widespread dissatisfaction had spread among the many stakeholders in the textbook marketplace—including students, parents, administrators, librarians, scholarly communication and open access advocates, and a growing contingent of faculty. The dissatisfaction is primarily driven by cost increases that significantly outpace the rate of inflation, but also comes from a growing awareness among academics of the potential to mix and customize electronic content with learning technologies to meet specific pedagogical purposes. The combination of pressure from the university administration, parents, and students to reduce costs and the faculty's willingness to experiment creates great opportunities for new alternative textbook publishers that offer more flexible and cost-effective models.[9]
- **A widespread willingness among faculty in an academic department to change their pedagogical approach** to incorporate new model electronic texts and work to save student costs.
- **Dysfunctional marketplace and new technologies.** Increased digital publishing capabilities of alternative textbook publishers such as Physics and Curriculum, Morgan and Claypool, and Flat World Knowledge have taken advantage of the dysfunctional textbook marketplace and the cost efficiencies of digital publishing. These publishers' products have attractive economies of scale when compared to traditional publishers' textbook options, which come with significantly higher prices.
- **Flexible licensing terms.** The digital textbook adopted by the physics department allows students to use the content in the format that best suits their needs and preferences. *Physics Fundamentals* is available online as a PDF, but can be copied by students to digital devices for their personal use, printed in its entirety on demand from the NCSU Bookstore and Kinko's for $40, or printed in segments as needed. When surveyed at the end of the first semester of the textbook's use, just over 60 percent of the students reported choosing to acquire a print copy and over 80 percent reported printing at least a portion of the electronic book. These findings seem to reinforce recent studies indicating the preference among students for the functionality and interaction currently offered by print versions of textbooks.[10]
- **Expertise in creating and hosting digital collections.** The NCSU Libraries' initiatives to create reusable and scalable digital collections and a repository infrastructure enabled us to quickly host and serve up electronic textbooks where appropriate.
- **Robust electronic book programs.** Electronic books are a well-established part of the libraries' collections and the culture of scholarship among NCSU users. The libraries' expertise in search and discovery, established advocacy programs in digital scholarship, and advanced collecting in electronic books helps to make content such as *Physics Fundamentals* and Morgan and Claypool titles discoverable, visible, and readily available to our community.
- **Integrative tools.** The NCSU Libraries has made several learning technologies available, such as Library Course Tools, which facilitate embedding electronic books in learning management systems. Library Course Tools is an application that dynamically generates student-centric views of available library resources and tools that correspond to

each course taught at NCSU. Library Course Tools is easily linked to by library systems and campus learning management systems.[11] ReservesDirect, another tool, is an open source reserves management system that enables users to upload files and link directly to online materials, and developers to embed reserves information in other applications.

Keeping the Sizzle—Hosting Faculty-Authored Content

The second opportunity for the NCSU Libraries to directly effect change and experiment with hosted textbooks also came in collaboration with the physics department. Faculty-authored textbook content—both short and long form—is now hosted in the NCSU Libraries digital collections for use by the entire NCSU community. Encouraged by the success of the licensed electronic textbook content, other physics faculty members who had been considering self-publishing textbooks were now willing to push those textbooks to completion. The ability to combine digital dissemination with growing print-on-demand capability at very moderate costs aided the adoption of the self-published textbooks. And for the students, the flexibility in formats (print or digital) was an attractive feature.

The incentive layer, always a critical piece to any evolution of scholarly communication practice, provided a number of positive inputs to encourage experimentation and alternative models. First, a great deal of the initial motivation to make a change to digital textbooks came from faculty's increased concerns over the rising costs of traditional textbooks and worries over continuing to pass those costs on to students and their families. Some of the dysfunctional elements of the academic journal marketplace, where the faculty are typically unaware of the costs of scholarly journals, are mitigated in the textbook market by the faculty's direct exposure to the cost of the textbook during the adoption process. Second, both pressure and rewards were applied to the faculty by the UNC system and NCSU to take steps to control textbook costs. The system provided funding and reward incentives to faculty applying alternative approaches but has yet to offer funding to libraries or institutions to experiment with centralized purchasing. Finally, the limited functionality of traditional textbooks motivated the physics department, a technologically sophisticated group of faculty, to look at alternative publishing models to leverage both technology and format flexibility in delivering course content to students. Partnership with the libraries provided a scalable and accessible distribution mechanism for the faculty-authored content. The combination of incentives and reduced barriers to dissemination provided the right mix to facilitate experimentation and innovation.

Inherent Challenges

While digital textbooks and open educational resources present significant opportunities for experimentation, inherent challenges remain for any library moving into the digital textbook arena. Traditional reserve models serve only one user at a time and fail to leverage many of the benefits of digital content. No digital models, even emerging offerings from new market entrants, come close to scaling in the context of existing library budgets and structures. Significant additional funding would need to be provided for any type of large-scale experimentation with digital textbooks in libraries.

Economic transference, from highly distributed and decentralized models with individual students and families funding their personal textbook needs to centralized models with a library or other organization providing funding, presents a number of challenges. Student fees or related models of creating a central funding pool are highly political and likely to create tension among portions of the student body. Centralized adoption and institutional licensing challenge independent pedagogical practices and instructor control over the selection of texts. As the larger commercial market for e-readers, tablets, and e-books emerges, textbooks will inevitably evolve to take advantage of device momentum to disseminate content. Personal, device-driven applications cater to the distributed, individual purchase model that now dominates the textbook marketplace. However, centralized licensing presents significant opportunity to move aggressively into new models, substantively reduce per student costs, and facilitate student choice among formats with print-on-demand, digital, and audio availability.[12] As libraries further integrate into learning technologies and course systems, their ability to leverage existing e-resource delivery infrastructure for digital textbooks increases. In short, the technological and licensing models to facilitate centralized approaches are emerging if the political and economic challenges can be overcome.

Conclusion

The textbook market is ripe for economically and technologically disruptive models. Despite there still being a strong preference among students for the *functionality* provided by print textbooks,[13] dysfunctional textbook economics, flexible format delivery, integrative course content delivery options, and the growing availability of new technologies associated with electronic textbooks can provide significant opportunities for innovators in the textbook marketplace, including libraries. New market entrants such as Flat World Knowledge, and Inkling and traditional textbook publisher models such as CourseSmart are just the

beginning. By leveraging a growing capacity to curate and disseminate digital collections, our knowledge and skills in advocacy for alternative textbook models, a faculty willing to experiment, and the collaborative imperative that drives innovative collections efforts, the NCSU Libraries has been able to directly impact the delivery of electronic textbooks to faculty and students. Our willingness to experiment combined with incentives from our institutions and a market-based trend towards alternative textbook options laid the groundwork. In scholarly publishing, culture almost always trumps technology. In the case of textbook models at NCSU, both culture and technology are working to enable experimentation with alternative digital models.

Notes

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13. Allen, High-Tech Textbooks.