An Experiment in Open-Access Textbook Publishing: Changing the World One Textbook at a Time

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The revolt against the ever-increasing costs of postsecondary texts has begun. No one can deny that reselling texts, sharing texts, e-book reserves, and free copies that are resold have forced the commercial publishers to take action. But at what cost to higher education? Just as the cable monopolies are beginning to lose ground to other delivery systems of broadcast content, so too are textbook companies losing ground to other forms of delivery. Most commercially developed e-textbooks are little more than enhanced print editions and have limited access and restrictions on printing and downloading the content. Open-access texts solve many of these problems, but, as many now realize, ‘open’ does not equal ‘no cost.’ This article will explore some of the forces that are driving the open-access phenomenon, and describes the joint effort by the University Press of Florida and the University of Florida Department of Mathematics project for open-access calculus texts.

Keywords: textbooks, open access, open-access repositories, e-textbooks, learning repository, university press, affordability, accessibility

THE RISE OF TEXTBOOK PRICES AND LEGISLATIVE REACTION

As of this moment, thirty-nine states have passed legislative actions that address the high cost of textbooks, most under the broad rubric of ‘textbook affordability.’ The purpose of these statutes is to provide students with more tools with which to locate the cheapest possible texts for their courses. Some of this legislation requires faculty to choose a text early enough so that the ISBN can be posted at least thirty days before the semester’s beginning to allow the students time for comparative shopping.
In Florida, the legislation includes language that requires that the department or instructor confirm that all assigned materials will be used, that there be policies in place that address the needs of students who cannot otherwise afford the costs of texts, and that the department or instructor confirm the extent to which a new edition differs from an earlier version and the value of changing to the newer edition. In 2009, the Florida legislature went one step further by directing the Florida Distance Learning Consortium (FDLC) to work with university and college systems to promote and increase the use of open-access textbooks.

As expected, entrepreneurs have stepped in to offer national textbook rental programs that allow the student to ‘rent’ the text for the semester at a reduced cost. This differs from the used book market in that the student never actually owns the text and must return the textbook in reusable condition. In the case of e-textbooks rentals, the textbook and all student notes are available for 180 days only through the company’s servers and may not be downloaded.

Sometimes, the final cost of a rented print textbook does not equal the rental fee if the returned text is too damaged to be reused. At one Florida institution, for example, if you spilled a cup of coffee on a rented print textbook, in addition to the cost of the rental, you would have to pay the price of a used textbook plus a 7.5 per cent fee. Some universities have even explored the idea of taking on book rental programs themselves, an idea that has roots in the early land-grant schools, Historically Black Colleges and Universities (HBCUs), and schools in rural and poverty prone areas like Appalachia. However, the capital investment is quite large. College textbook stores have offered a variety of incentives to help defray the costs, from frequent buyer plans to lowest price guarantees to student-to-student buy-back programs.

**WHAT STUDENTS WANT IN A TEXTBOOK**

In fall 2010, the FDLC conducted a survey of Florida university and college students, receiving answers from 14,221 respondents. What students want in a text is unlimited accessibility for multiple devices, an affordable print edition, self-print access to the entire book, and online study aids. Approximately 70 per cent of students still wanted the opportunity to buy a print edition, but reported that they buy them from non-campus stores, such as Amazon.com. When asked what other ways they try to reduce their textbook costs, 72 per cent of students reported buying...
used books from a source other than the campus bookstore, 64 per cent said they buy used books from the campus store, 58 per cent said they re-sell their texts, and a surprising 37 per cent said they do not bother to purchase the text. What is no surprise is that students are very resourceful when shopping for textbooks. Their methods include shopping around for the cheapest option. Over 23 per cent of the students responded that they had occasionally not registered for a particular course or section because of the high textbook costs. Sadly, 10.6 per cent had to withdraw from a course and 7.2 per cent reported that they failed courses frequently or occasionally because they could not afford to purchase a textbook. Only 83.6 per cent of students reported never failing a course due to the cost of required textbooks, and only 34.9 per cent of students reported that they always purchase the required course textbooks. As you can see, the cost of textbooks has a cumulative adverse academic impact that requires a solution.

The features of a digital book that are most important are searchability, printability, and unlimited accessibility; functions such as ‘copy and paste’ capability and highlighting not rated as highly but are still important. To be successful, students responded that online practice questions, PowerPoint files, demonstrations, interactive assessments, and video are all study aids that help them achieve a better grade.

THE CONCEPT OF OPEN-ACCESS TEXTBOOKS

Open Access (OA) has been a part of the academy for some time now, but the concept of open-access textbooks is still foreign. Many faculty see these ‘free’ texts as somehow second-rate or commercial house rejects, or think they are only long-out-of-print texts. Some of that is true and such books do reside in some open-access repositories. However, more and more the OA textbook market is taking on a vitality and energy that seems lacking in the commercial textbook world of focus groups, reviews that add more and more material, and ever-more-frequent revisions.

An open-access textbook empowers an author to craft a textbook that is adaptable, affordable, and very accessible. The word ‘craft’ is very appropriate, for the beauty of OA textbooks is that faculty do not always have to start from scratch and completely write an entire textbook. An author can revise an existing text already available under a Creative Commons license to meet his or her exact needs. Because it is for a specific use, the author determines when and if it is updated. The author decides
what works for his or her students. Entire texts can be pulled directly into a learning management system (LMS), where the author can add whatever other instructional resources—video, animation, photography, assessments—he or she knows will work with students. It is the ultimate customized text. So if you always teach statistics to business majors, you can craft the exercises and examples to that audience only.

An author’s work is shared throughout the OA universe, and this makes online teaching very interesting. The book can be designed to fit the course, not vice versa. It can be shared through the LMS and through other repositories. Because it is open access, the book can be used an infinite number of times, on an infinite number of devices, by an infinite number of people. Unlike some ‘free’ texts that can be seen and used only on the publisher’s website, an OA text can be completely downloaded any number of times to any number of devices for free. There are no time limits on access, and multiple versions of the same book can be saved in a repository. No matter how many times a single student downloads, accesses, prints, or engages with the OA text, they will never see ‘Do you want to pay with PayPal?’ Most OA repositories offer some form of the ‘buy-this-book’ option to let users order a printed version, but it is neither a requirement nor a necessity. In short, the author decides what material will be covered and the student decides in how many different ways they want to interact with the text. This versatility is a key feature of OA texts.

WHAT FACULTY KNOW ABOUT OA AND ENTICEMENTS FOR CREATION

Another survey of Florida faculty and administrators at both universities and colleges, conducted in 2009 with 2707 participants, indicated that the majority of textbook decisions are still made by an individual faculty member. Only 7 per cent of that group were ‘very familiar’ with open access textbooks, while 52 per cent were ‘not at all familiar’ with open-access textbooks, and only 12 per cent indicated they had used some other kind of open-access supplementary material.

It will come as no surprise that the same factors that drive a decision to adopt a print textbook will drive a decision to adopt an open-access textbook. The text must be of a high academic quality. The professor must have time to locate and review it before selection; plus, he or she will want some knowledge about the project or the author. Only then is
the desire to reduce the costs to students considered. While there is no statistical data to support the idea that commercial publishers have taken advantage of this disconnect between faculty and student needs by raising textbook costs, there is plenty of anecdotal evidence. It is true that a large majority of commercial publishers’ sales increases have come from their higher-education divisions and that textbook costs have risen at a rate much greater than inflation. Some professors are very aware of this, and many more are becoming aware of the price of the texts they assign, but price still does not factor prominently in the decision process for faculty. Why? The major barrier to open-access textbook development is that open-access materials, for the most part, are not taken into consideration by those making promotion and tenure decisions. This particular barrier may be breaking down as more promotion and tenure committees, deans, and provosts see peer-reviewed, open-access journal articles appearing on curricula vitae.

A population that constantly feels underserved, underfunded, and overwhelmed, faculty need and want incentives to add this extra load to their work. However, with a paradigm of affordability over commercial profitability, the OA textbook environment provides challenges to the traditional way textbook authorship is funded. A number of creative solutions were uncovered in Florida through research on open-access textbook use. A department chair offered monetary incentives of up to $1000 to faculty who could reduce the course costs to their students. The state of Ohio created challenge grants to award up to $50,000 to authors or author teams to create a textbook for open-access use. At the University of Florida (UF), the provost offered all deans up to $30,000 of seed money for faculty who wanted to write an OA text. Buying or offering release time, grants to create a text, and monetary incentives are the three most popular forms of incentives to date. This investment of faculty time proves that, except for the download, there is nothing ‘free’ about open access. The OA textbook adventure requires capital.

THE UNIVERSITY OF FLORIDA MATHEMATICS PROJECT
IN CALCULUS
In 2009, Orange Grove Text Plus (OGT+), an open-access textbook repository, was created by the FDLC’s learning repository, The Orange Grove, and the University Press of Florida (UPF). The idea was to meet the needs of both faculty and students by offering quality, peer-reviewed
textbooks for the basic general education curriculum. With The Orange Grove hosting the repository and all of the accompanying metadata, and the University Press of Florida offering quality peer-review, editorial, design, and distribution expertise, OGT+ found the formula that met almost everyone’s needs: accessibility, affordability, and adaptability at quality standards that would pass peer review. OGT+’s purpose remains simple: to offer at least one, decent, peer-reviewed open-access alternative for each course in a typical general education curriculum. OGT+ was not formed to change the world but to offer faculty and students good alternatives to high-priced texts.

The provost at the University of Florida, Dr Joseph Glover, saw an interesting experiment in OGT+ and offered seed money to the UF Department of Mathematics to create a calculus text. Having taught calculus himself, he knew that the basic concepts had not changed all that much since Newton and that UF Mathematics had the introductory courses tuned like a well-oiled machine. The money was split between two faculty members, Dr Sergei Shabanov and Dr Miklós Bóna, both of whom had received the UF Teacher of the Year awards. Frankly, the stars would not have aligned as they did without the enthusiasm of the department chair, Dr James Keeling, the introductory course coordinator, Dr Rick Smith, and these two authors, who were increasingly frustrated with their seemingly ever-changing-but-not-really-changing textbook and its price of $215. Using their lecture notes as the basis for the text and mining three different calculus books already in the Orange Grove Repository open-access textbook collection for their problems and examples, Shabanov and Bóna wrote the text during the summer of 2010. Once the text was written in LaTeX, a mathematics program, UPF hired a freelance service to edit and redesign the work. The beta version was available for class testing and peer review for Spring semester, 2010. While it was being class tested by the honours section and peer-reviewed by other university faculty in the state of Florida, UPF worked on in-house procedures to meet the deadline of full deployment for all sections in Fall semester, 2011.

Two partners became integral parts of this process. The first is WebAssign, an online homework and assessment service whose product UF Mathematics was already using in Calculus I with its commercial textbook. As WebAssign was seen as an essential part of the pedagogical program, UF Mathematics, UPF, and WebAssign worked to create a new
set of problems and exercises crafted especially for the UF beta textbook. Further, WebAssign agreed that the OA textbook was an interesting experiment in a world that was seeing increasing resistance to high textbook costs, so they lowered their usual subscription fee of $75 to $25 for the UF Calculus I textbook. In an interesting development, WebAssign contacted the authors of two other textbooks already in OGT+ but not developed by UPF, and created WebAssign products to go with those texts, all at this new lower price point. They now offer this service to any professors who want to add online assessment of any kind to their OA texts.

The other partner was Integrated Book Technologies (IBT), a large and growing digital printer in the United States with server capacity on six continents. IBT hosts the most recent PDF versions of OGT+ textbooks and credit card processing, thereby allowing OGT+ to add a ‘buy this book’ button right next to the download and WebAssign icons. The student places the order, paying with either PayPal or other forms of credit, and a professionally printed paperback book ships within twenty-four to forty-eight hours. Because UPF uses IBT for its monograph publishing as well, OGT+ textbooks are able to go out to regular distribution channels such as Amazon.com, BN.com, and brick-and-mortar bookstores. The final puzzle piece has fallen into place; students had their multiple options for interacting with and buying a text.

As of December 2011, UF Mathematics has written Calculus II and III, both to be beta-tested in the summer session. Working with the School of Engineering, they have added an engineering module to meet the needs of those majors. Through a series of talks and presentations throughout the state, OGT+ is gaining traction and acceptance. Introduction to Theatre Appreciation and American Government texts are in development for OGT+ open-access use next year. Seventeen university-press directors have contacted UPF to explore the idea of an OA textbook consortium. The times seem to be ‘a changing.’

**Meredith Morris-Babb**, Director of the University Press of Florida has been at UPF for fifteen years. Prior publishing experience includes an eight-year stint, in both sales and editorial, with a commercial textbook company.

**Susie Henderson**, Director of The Orange Grove Digital Repository, has been at the Florida Distance Learning Consortium for fourteen years as the Associate Executive Director of the Consortium and Director of The Orange Grove since 2004.
NOTES

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