Chapter 6

Digital Textbooks

A State-Level Perspective on Affordability and Improved Learning Outcomes

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Abstract

This chapter of The No Shelf Required Guide to E-book Purchasing *examines the impact of textbook costs on students in higher education. The author reviews digital textbook market trends, examines their impact on libraries and students in Ohio, and offers proposed solutions.*

Author's Note

This chapter on digital textbooks and their increasing adoption is written in three major sections: where we've come from, where we are, and where we're going. Reading habits and resultant author strategies have changed, and therefore readers don't need to read this chapter in a linear manner. For an immediate scan of state of Ohio projects, jump to the second section: Where We Are. These initiatives were crafted with collaboration and input from the multiple players involved in the high-stakes, but broken textbook market: bookstores, publishers, libraries, faculty, students, our state policy-makers, open educational resources providers, and disability services offices. For the principles that drive these undertakings, start at the third section: Where We're Going. Articulate and follow your own principles for introducing digital materials into your learning environment; this will protect your strategic planning process from the transient bling in the marketplace. If you prefer a traditional narrative structure, just read on.

While the ideas and policies described in this chapter emerged from many spirited interactions with other policy makers and educators, the opinions and expressions are those solely of the author.

A State-Level Context

We seem to have been on the cusp of a digital textbook "revolution" since at least 2005, and many would argue from even earlier. This chapter explores where the market stands in this transformation and the markers that will determine our progress going forward. The presentation is from the perspective of Ohio's statewide system of thirteen public university campuses, one medical college, twenty-four regional branch campuses, and twenty-three community colleges, as well as adult literacy and adult workforce centers. In addressing new learning opportunities from a state perspective, one size does not fit all, so this diversity is served through a variety of pilot projects.

Higher education systems and the states in which they operate have a challenge and a problem. The challenge is how to graduate and retrain more of their citizenry to meet the economic and social needs of their states. For example, the state of Ohio's ten-year strategic plan calls for enrolling 230,000 new individuals by 2017 and increasing graduation rates an additional 20 percent.[1]

The ever-rising cost of education is the single biggest problem that must be faced to meet these goals. Since 1978, after adjusting for inflation, the cost of higher education has tripled and student surveys report that cost is the single greatest reason that makes them consider dropping-out or delaying their education

(Anonymous, *Chronicle of Higher Education*; April 20, 2011).[2] Adding to pricing concerns, the cost of new textbooks has risen to more than $1,000 per year for most students, and in the last several years textbook cost increases have exceeded 10 percent. The Government Accountability Office presents the data this way:

> College textbook prices have risen at twice the rate of annual inflation over the last two decades, following close behind annual increases in tuition and fees at postsecondary institutions. Rising at an average of 6 percent each year since academic year 1987–1988, compared with overall average price increases of 3 percent per year, college textbook prices trailed tuition and fee increases, which averaged 7 percent per year. Since December of 1986, textbook prices have nearly tripled, increasing by 186 percent, while tuition and fees increased by 240 percent and overall prices grew by 72 percent.[3]

Public institutions face growing pressure from legislators, and all colleges and universities hear vociferous complaints from parents and students regarding educational costs. Faced with reducing either the rate of internal cost increases—tuition and fees—or exogenous costs associated with textbooks, schools and systems will push for textbook affordability first and only then tackle their internal costs and cost structure issues.

From the textbook publishers' perspective, the price of textbooks as part of the escalating cost of higher education can be addressed through an information fee paid by all students for universal access to learning materials. Commercial publishers cite the precedent of an institutional technology fee, a bundled cost of education used to rapidly introduce learning technologies on campuses in the 1990s. These publishers promise very significant per-student discounts in exchange for universal class adoption of their learning materials. This approach would also benefit faculty, since all students would have no-excuse access to assigned learning materials. However, for many reasons—increased cost, faculty members who run their courses without using the required textbook, the inconvenience of low-bandwidth access to the Internet-—not all students would be well served by a mandatory information fee. Currently, 15 percent of students purchase no textbook.[4] We may be better served through a mass-customization strategy,[5] where individual students find cost-reducing solutions from a variety of alternatives we can present to them.

Further, to follow the publisher recommendations for an information fee is politically sensitive since the increased fees would be immediately apparent, while the benefits of universal access to the learning materials would necessarily lag. In addition, faculty members fear an assault on their academic freedom and autonomy as textbook selectors—would there be pressure to select the lowest cost content rather than the content best fitted to the instructor's teaching approach? And from the perspective of improving learning outcomes, does an information fee leverage the projected benefits of a digital revolution that may be achievable?

After a brief history of textbook pricing and digital market development, this chapter presents a series of strategies the state of Ohio has identified to address the escalating costs borne by students. At the heart of the question for a state system seeking to improve graduation rates by 20 percent is whether improved learning outcomes can accompany lowered textbook costs, thereby compounding a reduction in the per-unit cost of instruction. State systems can commit to textbook affordability agendas only if student learning also improves, as evidenced by increased persistence, retention, and graduation rates.

Where We've Come From

Until the mid-1980s, the textbook market was relatively placid. Textbooks were updated every three to four years, and annual price increases were not a topic of public outrage or systemwide debate. The book distribution chain was simple—author to publisher to bookstore to student—and the modestly sized used book market was handled at the bookstore, typically university-owned or independently owned in a mutually supportive relationship with the university. Bookstores served a student-support role and had characteristics of a cost center (like a library or advising unit), rather than as a profit center that contributed to the coffers of the university.

The bookstore existed to help students acquire the books they would need, based on faculty requests, that were ordered, delivered, exchanged, and often returned at the end of the academic term. The bookstore and the financial aid office had even worked out a relationship that allowed a student to purchase textbooks on credit until the student's loan grant had been processed. The unintended consequence of this once student-friendly relationship is that today's students using financial aid aren't able to purchase lower-cost textbooks if offered by Internet-based services such as Amazon, Half.com, or Chegg. More attractive pricing on textbooks and other learning materials often can be found online.

The 1980s—A Time of Ferment

Many things happened simultaneously in the textbook market during the 1980s that set in motion the slow-building transformation from print to digital. Independent bookstores became affiliates of national chains—notably Barnes and Noble and Follett—gaining

market expertise and also a mandate for greater profitability—jointly preferred by the bookstore operator and the university. These university-owned bookstores absorbed a shift in values and tried to balance a legacy focus on providing student services with a need to extract additional revenue from students. If this new dual mission couldn't be met, the campus bookstore was defenseless against the university outsourcing the bookstore to private enterprise.

By around 2005, approximately half of the bookstores in Ohio were managed by either Barnes and Noble or Follett. As this new business realignment occurred, the used book market became more concentrated and rationalized. Campus stores and independent book buyers funneled excess used book inventories to members of the Used Textbook Association. Founded in 2006, this association brought together Nebraska Book Company, MBS Textbook Exchange, and other wholesalers. The association helped promote used book sales by matching buy-back inventories with book lists across multiple universities.[6] Since the profit margin on used books exceeds that on new books, the used book market flourished at the expense of the new book market. The devil's dance picked up pace—the lower cost of used books, typically saving a student at least 25 percent off the new print list, became the first sale of interest to the student and to the bookstore. The publisher, faced with fewer new book sales (the major source of its revenue), responded by steadily increasing the price of the next edition of its textbook. Publishers also shortened the revision cycle to kill the used book market for the outdated edition. Although this pricing and editorial policy was a perfectly rational business response, its undesired consequence was increased upward pressure on the price of the next generation of the textbook. As the price of the new textbook increased, the price of used textbooks, set at approximately 75 percent of the price of the new textbook, moved in lockstep with the new textbook price, further disadvantaging students.

This shift in the textbook market structure paralleled the textbook industry becoming increasingly oligopolistic in its structure. Whereas it was once the purview of editorial teams fashioned around particular disciplines, large publishers swallowed smaller publishers and assumed the posture of publicly traded corporations legally responsible to maximize return on investment for stockholders. As textbook development philosophies aligned and as new content delivery projects grew in size, an appetite for risk and a distortion, though not departure from, the original impulse for innovation fled the publishing market. This conservative new bent in textbooks was exacerbated by the consolidation of the trade book market as the large superstores from Borders, Barnes and Noble, Waldenbooks, and Little Professor encouraged greater investment in high profile authors, fewer low-volume titles, and less reliance on publisher backlists for revenue.[7] Today, Pearson Education, McGraw-Hill, and Cengage Learning control a majority of the textbook market.

Things haven't been quiet in the academy either. Committees increasingly managed the introductory courses that enroll large numbers of students, and the committee's "all-or-none" adoption decision created a higher-stakes game for publishers. Publisher marketing expenses went up, often dramatically, as more and more representatives were deployed to demonstrate and sell textbooks that covered essentially identical content differentiated mainly by the author's style and tone. State systems contributed to this hyperfocus by establishing transfer and assurance guidelines that normalized required course learning objectives. These transfer assurance guidelines allowed students to move more easily among schools, but also funneled textbook content into specific and overlapping content areas.

In this same mid-1980s timeframe, colleges and universities began to change hiring practices, shifting their faculty profile toward adjuncts as replacements for more expensive tenure-track, full-time teachers. To serve an unsettled and less experienced faculty, along with a healthy dose of ever-new graduate student teaching assistants, the textbook maintained its role as a "disciplinary canon" that clearly explained the foundations of the subject. This diverse faculty profile further encouraged curriculum committees to recommend textbooks as the common resource for large undergraduate courses.

Wrapped within the major social changes introduced by the Internet, course (learning) management systems (LMSs) began a migration to digital learning environments. One milestone in this digital transformation of instruction was the emergence of MadDuck's Course-in-a-Box (1998). Course-in-a-Box is now most remembered as the first acquisition in 2000 by Blackboard, a fledgling competitor at the time. In the next ten years, Blackboard acquired other early competitors, including WebCT and ANGEL, and in 2010 claimed nearly 60 percent of the LMS market.[8] In the same timeframe, Desire2Learn, a Canadian-based company, rose to prominence. However, the growth in LMS has been fractious and expensive, and new open source systems, notably Sakai and Moodle, have emerged.

As more and more faculty and students became comfortable in a learning environment supported by technology, the seeds were being sown for a more rapid introduction of digital content. With the rapid growth of distance education, another vehicle that requires familiarity and the convenience of digital, additional opportunities for digital content have emerged. In the 2010 Campus Computing Survey, nearly 80 percent of IT leaders indicated "eBook readers will be important platforms for instructional content in five years."[9]

As often is the case at transition points, things in the digital content world have gotten worse before

they will get better. Increased investment in digital delivery (formatting concerns, reliability concerns, distribution dynamics) have increased costs, screen resolutions and contrast ratios that create eyestrain and fatigue weakened the monitor as a reading surface, and inaccessible digital "shovel ware" that didn't take advantage of digital benefits resulted in a backlash rather than a springboard for a transition from digital to print. As recently as 2010, the National Association of College Stores found that students preferred print to digital by a ratio of three to one.[10] Institutions often preferred their students to have print as well—print textbooks reduce demands on faculty to improve their own digital literacy, on libraries to convert e-reserves from print to digital, and on the campus IT organizations to establish single signon procedures to make the far-flung digital environment an easier learningscape to traverse for the campus community. At the same time, publishers began marketing their own learning management systems and web portals. For example, Pearson bought eCollege and rebranded it as Pearson LearningStudio. Not surprisingly, these vertical integrations optimized the use of the publisher's own content catalogs. The campus environment, seen from afar, has become a Tower of Babel, many different technology platforms that create suboptimized confusion in the digital learning space.

To address this confusion, at least two substantial efforts have emerged to rationalize the textbook environment. First, a limited liability corporation named CourseSmart was founded in 2007. CourseSmart is owned by Cengage, McGraw-Hill, Pearson, Bedford, Freeman and Worth (Macmillan), and John Wiley and Sons. CourseSmart offers around 90 percent of new textbook titles from these and several other publishers in digital format at less than 50 percent of the cost of a new print textbook and provides "page faithful" renditions of the print textbook. Although CourseSmart's one-stop shop simplifies selection and purchasing for both students and faculty, the digital price point is only marginally better than that achieved with the common student practice of buying a used print book and then selling it back to the bookstore at the end of the term. In defense of the CourseSmart business model, digital licensing (as well as the recently emerging textbook rental model) does help a student predict the true cost-of-use and avoids students being blindsided by an edition change in the middle of the academic term.

The other major stabilizing influence on the textbook market was the passage of the 2008 Higher Education Opportunity Act (HEOA, 2008). [11] This federal legislation required publishers to expose the wholesale costs of their learning materials, unbundle the main textbook from ancillary materials such as DVDs and problem-solution manuals, and make this information available in a timely manner so that instructors can include cost considerations in their textbook selection process. The legislation further requires colleges and universities to publish a net-cost calculator by October 2011 to help students determine their costs of learning materials. The thrust of this legislation is admirable, but our lack of experience with the information adds to the complexity of textbook marketing.

Students Speak

In 2004, the state Public Interest Research Groups (PIRGs) produced a seminal student perspective on textbook affordability in a report titled *Ripoff 101: How the Current Practices of the Textbook Industry Drive Up the Cost of College Textbooks.*[12] To emphasize another of their study's themes, the publishing industry's rapid turnover of editions without fundamental changes, *Ripoff 101, 2nd Edition,* was issued just one year later.[13] Both reports gained a great deal of mainstream media attention, and their polemic nature was eminently quotable: "Three-fourths (76 percent) of the faculty surveyed in our 2004 report said that they found new editions justified only half the time."[14] The PIRG's Make Textbooks Affordable campaign continues to advocate strongly for textbook market reform. One of the principal solutions to expensive textbooks championed by the PIRGs is textbooks published as open educational resources, the focus of the next section.

Make Textbooks Affordable
www.studentpirgs.org/textbooks/research

The Rise of Open Educational Resources

For as long as faculty have taught, they have assembled learning materials to augment the textbooks they have selected for their classes. As long as this cottage industry practice only offered companion compilations to textbooks, the publishing industry generally overlooked the copyright violations that were occurring. Then, during this same 1980s period of ferment, course packs began to replace, rather than simply supplement, the textbook in classrooms. This shift resulted in windfall profits for copy centers and growing loss of revenue for publishers. The practice was remedied by the 1991 court case between Basic Books and Kinko's Graphics.[15] As a result of the court settlement, much more rigorous and complex copyright clearance procedures replaced the a-wink-and-a-nod faculty guarantee that course materials were reproduced with permission.

The Copyright Clearance Center emerged as the marketplace solution for purchasing chapters and other small units of copyrighted content. However, the clearance procedures were time-consuming, based on unpredictable cost expectations, and from the perspective of a faculty member trying to get a reading list or

syllabus together at the last minute, provided a solution that was not really very workable. Despite these practical limitations, the Copyright Clearance Center did offer a method for protecting the intellectual property of the copyright holder and therefore was supported by institutional and state policy for supplementing textbooks and creating course packs.

Copyright Clearance Center
www.copyright.com

The new hassles faced by faculty wishing to customize their course learning materials had interesting unanticipated consequences. What would happen if those who created content (copyright holders by the act of their content creation) were motivated by noneconomic incentives? What if the licensing procedures that should be followed to use copyrighted materials were relaxed, greatly reducing complexity, time pressures, and use conditions? A desire for "openness" of practices and procedures that others should follow to use the work of a copyright owner spawned the open educational resources (OER) movement. In short order, OER advocates evolved the Creative Commons licenses that became the standard by which copyright holders seek flexible ways to encourage use (but not transfer ownership) of their original creations. The process is remarkably simple and requires the copyright holder to answer two basic questions in establishing the use license: Can others use the work in a for-profit environment? Can users of the work modify it in any of a number of ways (the 4 *R*s—remix, reuse, revise, and reproduce)?

Creative Commons licenses
http://creativecommons.org/licenses

David Wiley and others argue that open licensing is a core value of education, and that educators are driven to share knowledge without limit as part of their profession.[16] Many in the OER movement agree with this altruistic, mission-driven perspective and invest much time and energy crafting high-quality content to be used under Creative Commons licenses. Other authors invest less time and energy in creating their expressions, and further don't expect their work to have much, if any, economic value. Since neither the altruist nor the unconcerned content contributor is operating within a traditional publishing model that reviews, revises, and checks for accuracy, the quality of the OER materials varies widely, and content users need methods to evaluate the quality of the OER content.

The star rating system used by The Orange Grove and MERLOT, two repository/referatories of open content, is one notable model of quality assurance. Disciplinary community members evaluate the work and assign it one to five stars. If the community rates a resource highly, future adopters have insight into the quality of the work. Connexions, a third OER repository, uses a similar user evaluation system called "lenses." Since the OER materials can be edited or abandoned at less cost than a commercial adoption, faculty risk less when experimenting with vetted OER learning materials.

The Orange Grove
www.theorangegrove.org

MERLOT
www.merlot.org

Connexions
http://cnx.org

Revisioning the Library

Libraries have thrived following Chris Anderson's long-tail business model—aggregate highly specialized research materials and serve the collective faculty/student population with "deep" individualized resources.[17] Like other service providers, however, library organizations still conform to the 80/20 rule—80 percent of their patrons' needs are satisfied by 20 percent of their collection,[18] which raises recurring issues for those charged with selecting library resources. Today's budgetary environment encourages a modification of the long-tail model; it may be better to also serve the high-demand needs of users and preserve the surplus value created to invest in the traditional long-tail demands of library patrons.

An argument can be made that library collections should expand to better serve the very-high-demand textbook-usage needs. Students line up to take advantage of two-hour windows of reserve room checkout and grow especially frustrated during exam periods when the materials aren't available. Meeting this demand by purchasing additional print textbooks and warehousing them behind reference desks is a losing strategy, with ever-escalating demands that are hard to estimate. Contracting with publishers for key licenses, or seats, for simultaneous user access is a preferred approach. Allocating digital textbook seats would permit a set number of students to use the textbooks for variable periods of time determined by policy established through experimentation and usage logs. A patron acquisition model would further maintain costs for libraries willing to move into this escalated level of user service.

How should this expansion in service be paid for while remaining faithful to the needs of research

communities? James Neal reissues the call for a National Digital Library.[19] If specialized, and seldom used, resources can be offered through a multi-institutional referatory system, scarce collection dollars could be allocated to textbook purchases and offer libraries justification for securing additional operational funding. Neal characterizes academics library as (paradoxically) an "information poor profession" and calls for a network of libraries for experimentation to move ideas quickly from concept to market.[20]

OhioLINK, the Ohio Library and Information Network, is a consortium of eighty-eight Ohio college and university libraries and the State Library of Ohio that, in some important respects, models a National Digital Library on the state level. The consortium members work together to provide Ohio students, faculty, and researchers resources, both digital and print, for teaching and research. OhioLINK's membership includes sixteen public/research universities, twenty-three community/technical colleges, forty-nine private colleges, and the State Library of Ohio, which together serve more than 600,000 Ohio students.[21] OhioLINK is Ohio's contribution to a rapid iteration learning environment that can help move library ideas from concept to market. OhioLINK serves as an important implementation environment for University System of Ohio policy in the area of digital textbooks. Several of OhioLINK's experiments will be detailed in the Where We Are section of this chapter.

OhioLINK
www.ohiolink.edu/about

Universal Access Is Key

For ethical, legal, and practical reasons, it is imperative to have a comprehensive and inclusive strategy for textbook affordability. For example, in the state of Ohio, the Rehabilitation Services Commission spends in excess of $1.3 million on textbooks needed by its clientele.[22] This allocation does not include the budgets and work efforts of Disability Services Offices that serve students on each of Ohio's campuses. As one point of reference, the Ohio State University Disability Services Office invests on average eighteen hours of staff time to make one textbook accessible, in Braille or digital formats, to a student with print disabilities,[23] and up to 300 texts annually are prepared by this one university alone.[24]

Students with print disabilities must declare their disability to the disability services office prior to receiving accessible textbooks. If the procedures for converting the textbook aren't started until the beginning of the academic term, students can expect to wait up to three weeks before a usable version of their textbook is available. Without a textbook, students fall behind, their learning outcomes are compromised, and the likelihood of their not successfully completing the course is increased. To address this concern, OhioLINK has partnered with five accessibility centers/disability services offices with expertise in providing these services. The partnership addresses ways to accelerate distribution of digital learning materials that work on mobile devices and that are "born digital" to serve the immediate needs of students with print disabilities. Materials being evaluated are provided by the AccessText Network, a service organization founded by the American Association of Publishers and headquartered at the Alternative Media Access Center on the Georgia Tech campus.[25]

Where We Are

Given the many crosscurrents in the arena of affordable textbooks and the goal of improving student learning outcomes, the University System of Ohio (USO) established the Ohio Digital Bookshelf (ODB) project within OhioLINK in 2008. Although many arms of the USO focus on aspects of affordable, high-quality education and improving student learning, the ODB was conceived as a vehicle for experimentation and community awareness, piloting promising initiatives and sharing outcomes with Ohio colleges and universities as well as the national academic community. This section briefly presents the current range of ODB projects underway.

The Buyer's Co-op—Faculty Autonomy and Student Choice

The Buyer's Co-op was the initial project of the ODB. It began with a survey of Ohio faculty to determine introductory psychology textbooks in use in Ohio. Introduction to psychology is the largest single course offered at Ohio's public institutions, with more than 70,000 students taking the course every year. Five major publishers—Bedford, Freeman and Worth; Cengage Learning; McGraw-Hill; Pearson Education; and John Wiley and Sons—shared their sales data for this course. We crossreferenced and reconciled the sales list and faculty survey and identified twenty-four psychology textbooks that were most used in Ohio.

We next negotiated with the publishers for discounts on digital versions of these textbooks. These discounts were as much as 70 percent off the list price of new print textbooks, and in most cases resulted in prices lower than other sources for digital textbooks. Importantly, the "net cost of use," what a student pays to have access to the content while taking the course, was lower than most other options—including buying the book used and then selling it back at the end of

the academic term. The digital license, typically 180 to 360 days, carries no risk of edition change. Since there is no resale value for an expiring digital license, a student knows at the point of purchase what access to the book will cost (similar to a rental program). The student is shielded from attempting to resell a book that has changed editions, an occurrence that drops the textbook's resale value from 50 percent to less than 10 percent. Since textbooks now change editions every two-and-a-half to three years, this risk will be encountered many times in a four-year college career.

From the USO's perspective, the co-op supported twenty-four faculty-selected titles, allowing the USO to honor faculty autonomy in choosing a textbook. This autonomy is a valued aspect of academic freedom, as well as an appropriate goal for supporting faculty-directed student learning.

Build the ODB Community—Workshops and Forums on Using Digital Materials

To serve our mandate for increasing awareness, we used the Ning platform to facilitate communication among faculty interested in digital learning materials. Our community was launched in April 2010 with seventeen members. One year later, the membership has grown to 300.

Within the ODB, the community shares information about conferences, events, webinars, and projects. Our most important skills-building event is the Ohio Digital Pioneers' Workshop, at which our publishing partners share new learning platforms and Ohio faculty demonstrate best-practice use scenarios. We also crosspromote efforts of other communities focused on affordable textbook solutions. One of the most prominent and useful is the College Open Textbooks Community; it has a particular emphasis on open educational resources.

Ohio Digital Bookshelf Community
http://ohiodigitalbookshelf.ning.com

College Open Textbooks Community
http://collegeopentextbooks.ning.com

Open Educational Resources—Reuse, Revise, Remix, Redistribute

OhioLINK, in partnership with five Ohio community colleges (Edison, Lakeland, Lorain County, Sinclair College, and Southern State) has received a Next Generation Learning Challenges grant, a program administered by Educause and funded by the Gates Foundation and the Hewlett Foundation. Two core elements of the proposal are (1) a rich, multimedia open educational resource (OER) set that is (2) used within concept mastery courses (math) and usable in linked applied learning courses (engineering). This project will help students succeed in developmental and credit-bearing mathematics, the coursework most responsible for lack of persistence and retention in Ohio's community colleges. Improving Science, Technology, Engineering, Math (STEM) outcomes is essential to meet the statewide commitment to reemerge as an advanced engineering economy.

Flat World Knowledge Mixed Model—"Free" Digital and Pay-for-Print

Flat World Knowledge is a start-up publisher with an intriguing business model—hire respected authors, edit their work, augment it with additional learning resources, and then give it all away for free reading on the Internet. Students seeking the convenience of content saved to their computer or who prefer print can purchase a digital download or black-and-white or color print versions of the textbook along with various study aids. Since approximately two-thirds of students who use these textbooks pay for some of the content, the business model, which offers very affordable textbooks and simultaneously facilitates student format preference, may well be sustainable.

Flat World Knowledge
www.flatworldknowledge.com

The state of Ohio purchased 1,000 digital licenses that will be given to seven Ohio institutions to help test the efficacy of the materials and their acceptance by students. The licenses permit downloads of both the complete textbook and ancillary learning materials, rather than relying on page-turning access on the Internet. The research will be published in early 2012 and give faculty evidence gathered at peer institutions regarding faculty and student acceptance of Flat World Knowledge OER materials.

Student Research—Accuracy, Thoroughness, Coverage, Engagement, Learning Tools

Because of the high cost of learning materials, more students are deciding not to purchase assigned textbooks. Some students postpone the pursuit of their degrees because the costs of textbooks coupled with the cost of tuition are simply not affordable. For a generation raised on the Internet, free online searches for class materials often replace purchasing the textbook. University of Cincinnati Professor Charles Ginn, a founding member of the ODB community, wondered

whether students could depend on the accuracy of what they find on the Internet? Working with the University of Cincinnati's chapter of Psi Chi, an international honor society composed of upper division psychology majors, Dr. Ginn set out to answer this question and to compare commercial and OER resources on a variety of dimensions important to students.

In the fall of 2010, eleven University of Cincinnati Psi Chi members evaluated introduction to psychology course materials from three different sources—materials provided by a commercial textbook provider, a Flat World Knowledge textbook, and the open Internet accessed using Google search terms. Treatments of key psychology concepts were evaluated for accuracy, thoroughness, clarity, and success in creating student engagement. Students rated the three formats as comparable on all of the above dimensions. The learning tools (test banks, websites) by the commercial textbook provider were found to be more helpful for faculty than competitive sources, a notable factor that influences the textbook adoption decision.

Comparative Pricing—Evaluate Student Indifference Curve for Price versus convenience

It is taken at face value that price is the dominant factor influencing where students purchase their textbooks. The Bowling Green State University Bookstore decided to evaluate whether convenience and availability of expert advice might offset the higher cost of textbooks at the university-owned bookstore. To conduct this evaluation, the bookstore website provided comparative pricing from other sources (e.g., Amazon) while also reminding students of the ease of using the bookstore, the assured accuracy of their purchase, and the generous return policy offered. The BGSU bookstore has experienced a slight uptick in student purchases and plans to continue piloting the Verba software that makes this approach manageable.

Verba
www.verbasoftware.com

Blanket Digital Licensing—Mandatory Student Purchase at Low Contractual Price

Mandatory purchase of digital textbooks has been piloted in the California State University system. In exchange for policies that resulted in nearly all students purchasing a digital license to the textbook, the publishers and bookstores priced their digital licenses at 65 percent less than the comparable new print price. Ohio is considering piloting this approach, but faculty autonomy and student choice must somehow be preserved.

Skin in the Game—Premium Payment to Publisher for Student Success

As in most states, Ohio's subsidy formula has long calculated payments to campuses based on third-week enrollment. For the past two years, there have been additional payments made to reward campuses based on student persistence and retention. This policy incentivizes "paying for student success." We are talking with our publishing partners about a similar model for textbook purchases—significant discounts for initial textbook purchases with an incremental bonus paid for each student who succeeds in the course. Students would purchase their assigned textbook from the ODB in two parts, with the second purchase required only of those students who remained in the class at the end of the quarter. This approach squarely aligns institutional interests in graduating more students with the publisher's interest in producing high-quality content that serves student needs.

Stair-step Pricing—Sequential Price Reduction as the Edition Ages

Publishers earn up to 70 percent of an edition's revenue in the first year of the textbook's release. Thereafter, the used book market steadily cannibalizes the publisher's revenue. Greater discounts in the second year of the book's existence for digital licenses would smooth out and increase the publisher's revenue cycle, benefit students, and promote the transition to a digital learning environment.

State Procurement—The State Buys and Distributes Textbooks and Learning Materials

Popular in the K–12 environment and under consideration in the state of Texas for higher education, the idea of a state-issued RFP for content creation merits further discussion. Materials are purchased under work-for-hire terms, so the state owns the copyright, and the licensing terms, update procedures, and pricing can be set for the benefit of the student. To be of most use in higher education, the state-owned content would need to be modular and editable by individual faculty members.

Leverage Accessibility Initiatives—Demonstrate Universal Design for Learning Benefits of E-reader Devices

OhioLINK is leading a research project in mobile computing and accessibility to determine whether learning for students with print disabilities will improve as iPhones, iPads, netbooks, and other e-readers proliferate and born-digital learning materials become available. Outcomes of the research will serve curriculum

construction, blending of snatched moments-of-learning and sustained at-the-desk learning, as well as the needs of students with print disabilities.

Expand Library Role—Patron Acquisition, Modular Course Pack, Dynamic Licensing

Textbooks should be made available as digital licenses procured and managed by libraries. The funding should be a mix of increased institutional support and reallocation of existing collection budgets. The patron-driven acquisition model that is developing and bolstered by deduplicating within consortial partners could reduce purchasing costs. Payment schedules to publishers should mirror value to students and be offered under much more dynamic and flexible models. Educational institutions, on behalf of their students. should pay premiums for additional access to digital textbooks just prior to test periods and final examinations and experiment with pricing models based on user needs. Pilot programs, like those underway at the CTW Consortium,[26] should be expanded and results shared.

Strategic Planning Symposium—Engage All Players to Revise Learning Materials Market

In April 2011, the University System of Ohio convened a strategic summit. Representatives of bookstores, faculty, libraries, OER providers, publishers, and students offered policy recommendations that they thought would serve student needs, serve their own interests, and be palatable to other stakeholders. Each role contributed policy proposals that paralleled the initiatives presented earlier in this chapter. The entire collection of thirty-five policy recommendations (available in the ODB Ning community) will inform policy, practice, and pilots for our community over the next year. Similar multiperspective gatherings offer insights often missing from conferences and meetings in which all participants come from a single tradition.

Where We're Going

We are nearing the tipping point in a shift to digital learning materials, and the times ahead are best addressed through a series of short forward steps based on experimentation rather than a predetermined master plan. Nonetheless, we know that our experimental steps should be principle-driven, lead us in the direction of improved learning outcomes, and provide traction in holding down the rate of increase in the cost of textbooks. We'd encourage institutions, other states, and coalitions to explicitly articulate their own principles. In the process, educational consortia will gain buy-in from their members and signal to partners that serve students (publishers, bookstores, libraries, accessibility centers, granting agencies) what drives the consortial model. The following principles and values define OhioLINK's approach to innovation in a changing marketplace.

- **Act on principle—don't chase the fad of day.** Marketing campaigns and disciplinary trends often are transitory. Change takes time, so select goals and principles that guide multiyear strategies and policies.
- **Avoid the tragedy of the commons—respect the needs and requirements of all stakeholders that shape textbook affordability and learning outcomes.** Almost without exception, we've been impressed with the integrity and character of those with whom we partner. We don't expect to find villains or a single source of the rising cost of learning materials. Instead, we seek to work together to avoid the tragedy of the commons—the economic model in which each actor's practices hurt as much as help student achievement and educational affordability. The model for creating, distributing, and using textbooks and other learning materials is broken; we all have to pursue new, cooperative strategies as we transition to a digital learning environment. Continued pursuit of individual interests without accounting for the needs and interests of other players in the system will result in harm to students, the constituency all stakeholders ultimately serve.
- **Claim the disruptive innovation in the service of service—benefit from Clayton Christensen's history of innovation and avoid the death of the organization.** Clayton Christensen reminded us not to overly sample the opinions of those for whom we are succeeding, but to pay attention to those whose needs are not being met.[27] His examples from the computer storage industry, automobile manufacturing, and classroom practices tell us that those who don't listen to complaints and address them can find themselves with no market at all when their service model is disrupted by new industry methods. Pay attention to those not served rather than listening only to the accolades of those well-served by your educational model.
- **Commit to accessibility—universal design for learning serves all.** Nearly all of us have been disabled at some point in our lives, whether from accident, age and infirmary, or some other circumstance beyond our control. Everything done for those who self-identify with a print, mobility, or other disability serves all and is essential to achieving the goal of universal education. Educational materials that are designed from the beginning to reach all sensory modalities serve multiple learning styles as well as support the ADA and

Office of Civil Rights mandates for accessibility.

- **Meld OER and traditional copyright traditions—incentives matter for driving sustainability.** Content created as open educational resources is often the source of invention and channel instructional voices too impatient or new to earn the endorsement of a commercial publisher. To meld these voices with those supported by traditional publishing practices will lead to excellent learner-centered content. New models for modularizing content are forthcoming and will permit merged and mixed lists that effectively serve students and faculty.
- **Liberate the library—apply the great skills of this tradition to a broader definition of the social good.** The pre-eminent skills of librarians—identifying quality materials, indexing them, and suggesting selections for specific uses—are not adequately exploited nor perhaps well-rewarded in today's emerging learning environment. Leverage these disciplinary attributes in the move to digital textbooks.
- **Promote mass customizations—capture the discounts of volume; preserve the utility of the specialized.** OhioLINK is well-positioned to evaluate the community benefits of providing modular, indexed digital learning materials tied to high-enrollment undergraduate courses. A searchable basket of modular learning content can be tied to learning outcomes identified by Ohio faculty transfer and assurance guideline committee members. While the faculty identifies the desired learning outcome and means of assessment, students assemble those resources that most resonate with their preferred learning styles. This mass customization supports investment in globally usefully course materials compiled to meet the specific needs of individual learners.
- **Change is hard—offer credible rationale for new behaviors.** Our prime method to contribute to a digital learning landscape is to create pilots and experiments, make our data collection procedures and outcomes transparent, and share results with members of the community. By so doing, the faculty and institutions that are the actual adopters of changed behaviors have evidence to guide and support their own transformation.

Conclusion

All players who serve and work in education share responsibility for the success of our students. Our students and the individual missions of our schools differ; any strategies we recommend have to be mutable and flexible to be useful to each in the system. More than anything, we all must feel a strong sense of urgency; we can't sustain the increasing costs of education nor bear the brunt of failed future efforts. Learn from history, appropriate some of the practices in use in the Ohio Digital Bookshelf, and map results to the principles that drive your actions. Single-minded pursuit of individual goals conceived as competitive rather than collaborative assure loss for all.

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