Sidekicks, Secret Weapons, and Superpowers

Librarians and Instructors Working Together in the North Carolina State Alt-Textbook Project
An Origin Story

I WANT TO BE A SUPERHERO.

BUT I HATE FLYING, SKYSCRAPERS, VIOLENCE, LOUD NOISES, AND DIRECT SUNLIGHT.

---

I am now a superhero.
If consumer goods rose at the rate of textbook prices, a gallon of milk would be $24.

"under the commercial textbook model students are simply valves through which taxpayer dollars flow to publishers"

"The price of textbooks has increased at a much greater rate than the cost of homes or consumer goods."

Over half of college students are at risk of being evicted, living in a shelter, or lack a place to sleep.
Textbooks

Textbooks & Course Readings On Campus

COURSE BOOKS ON RESERVE AT THE LIBRARIES

The Libraries provides at least one copy of every required textbook for fall and spring semester classes, assuming that either the NCSU Bookstores or the Libraries has received notification of the assigned text by specified deadlines. The Libraries makes over 4,500 required texts available on Course Reserves each year.

Course books are located in D. H. Hill, Hunt Library, or the three branch libraries -- Design, Natural Resources, and Veterinary Medicine. At the D. H. Hill and Hunt Libraries, they are located at the Ask Us center. They are available for one 2-hour loan at a time.

NC STATE BOOKSTORES

NCSU Bookstores stocks all of the textbooks used at NC State University. Books can also be ordered online.

ALT-TEXTBOOK PROJECT

The NCSU Libraries encourages the adoption or creation of free or low-cost alternatives to expensive textbooks through a grants program.

Purchase Used or New Textbooks Online

Before you buy
North Carolina State U. Gives Students Free Access to Physics Textbook Online

Physics students at North Carolina State University can get their introductory-level textbooks for free thanks to a new program by the college.

Each year about 1,300 students at North Carolina State take Physics 211 and Physics 212. Beginning this semester, the university’s libraries and physics department have offered the courses’ textbook online for free. Students can also print pages of the text or buy a printed copy at the university’s bookstore for about $45.

Michael A. Paesler, head of the physics department at North Carolina State, said his department wanted to find a cost-effective way for students to get course material and felt an online option might work well. The department hopes to offer more material online, including an optics text written by Mr. Paesler to be used for a course next semester.

“This is just the way students nowadays communicate and apply learning,” Mr. Paesler said. “So we thought this would not be an obstacle to their learning — indeed, it might be a better way to learn.”

North Carolina State University Libraries paid about $1,500 to purchase the site license for the textbook, published by Physics Curriculum & Instruction, Corp.
Students as Captives, Not Consumers

Where the **New Textbook Dollar** Goes*…

- **77.4¢**
  - Textbook Wholesale Cost
  - Publisher’s paper, printing, editorial, general and administrative costs; marketing costs and publisher’s income. Also includes author income.

- **1.0¢**
  - Freight Expense
  - The cost of getting books from the publisher’s warehouse or bindery to the college store.

- **10.7¢**
  - College Store Personnel
  - Store employee salaries and benefits to handle ordering, receiving, pricing, shelving, cashiers, customer service, refund desk, and sending extra textbooks back to the publisher.

- **3.7¢**
  - [Pro-Tax®](#)
  - College Store Income
  - "Note: The amount of federal, state and/or local tax, and therefore the amount and use of any after-tax profit, is determined by the store’s ownership, and usually depends on whether the college store is owned by an institution of higher education, a contract management company, a cooperative, a foundation, or by private individuals.

- **7.2¢**
  - College Store Operations
  - Insurance, utilities, building and equipment rent and maintenance, accounting and data processing charges and other overhead paid by college stores.

*College store numbers are averages and reflect the most current data gathered by the National Association of College Stores.

© 2011 by the National Association of College Stores

[OnCampus Research](#)
College Textbooks: Do You Get What You Pay For?

The age-old expression "you get what you pay for" is often used to explain away the skyrocketing cost of textbooks. Sure, prices may top $200 per book and the value may drop to pennies by the end of the semester, but it's all to ensure the material is of high quality to help students succeed -- or so the logic would go. But in a world where using free and open information has become a staple of everyday life, is "you get what you pay for" still true when it comes to textbooks?

According to the latest research, not anymore.

A new multi-institutional study conducted by researchers at Brigham Young University looks at the academic outcomes of students assigned free, openly-licensed textbooks versus those assigned traditionally-published textbooks. What the study finds is the opposite of what folk wisdom tells us: expensive textbooks are not superior to free ones. In fact, the results show a striking trend that students assigned free, open textbooks do as well or better than their peers in terms of grades, course completion, and other measures of academic success.

If traditional textbooks are not producing better outcomes, then what exactly are students paying for?
Secret Weapons in the Library
Why the Library?

Aggregating Resources

Offering Expertise

Trusted Partner
Campus Tech Leaders Report More Support for Free Educational Materials

College technology leaders appear more optimistic these days about open-source textbooks and open educational resources — teach not going to be used at no cost.

According to the latest Campus Computing Survey released on Thursday, 81 percent believe that open important source for instructional material in the that their institutions encourage faculty members.

Tackling Textbook Costs through Open Educational Resources: A Primer at ALA Midwinter

by Kaylyn Groves | 202-296-2296 | kaylyn@arl.org | updated on December 10, 2014 | published on December 02, 2014

SPARC in collaboration with the ARL/ACRL Institute on Scholarly Communication is offering an Institute on open educational resources at the American Library Association (ALA) Midwinter Meeting 2015 in Chicago, on Thursday, January 29, 1:00–5:00 p.m., and Friday, January 30, 8:30 a.m.–12:30 p.m. Registration for the Midwinter Meeting is not required to register for this institute.

The skyrocketing cost of textbooks is a tremendous problem on campus, and academic libraries have a growing opportunity to advance a solution through open educational resources (OERs). OERs include digital textbooks and other academic materials that carry open licenses permitting their free use and repurposing by others.

Faculty members are generally satisfied with quality of open educational resources, according to a new report, even though most instructors still aren’t aware of OER.
Alt-Textbook Project

In the Fall 2014 term, the NCSU Libraries awarded a first round of grants to faculty to adopt, adapt, or create free or low-cost alternatives to expensive textbooks. The first round is in progress and is expected to save NC State students more than $200,000 in the first year.

How to Apply

Complete the Call for Proposals form with information about your course and a brief narrative describing your proposed alternative to a commercial textbook. All current faculty members of NC State University teaching courses in Spring or Fall 2016 are eligible to apply. To learn more contact Will Cross, Director of the NCSU Libraries Copyright & Digital Scholarship Center.

Information Sessions

Information sessions will be held in partnership with the Office of Faculty Development on Monday, October 5th from 10:15-11:30am and in the Libraries at the following times:

Thursday 9/17/15 - Hunt Library
Conference Room 5703
Grants to . . .

- Hire a Graduate Student
- Pay for web design and hosting
- License images
- Pay for your time & expertise
Secret Weapons:

Kris Alpi
Vet Med

Anne Burke
Undergraduate Instruction

Jason Casden
Digital Library Initiatives

Will Cross
Copyright & Digital Scholarship Center

Josephine McRobbie
Libraries Fellow

Madison Sullivan
Libraries Fellow

Sydney Thompson
Access & Delivery Services
Support Throughout Course Design and Development
First Round (2014-15)

- 9 grants to 13 faculty members
- 8 departments
- 3 Cluster Faculty
- Saved students more than $200,000 this year
Superpower
The Impact of Open Textbooks on Secondary Science Learning Outcomes

T. Jared Robinson¹, Lane Fischer¹, David Wiley¹, and John Hilton III¹

Given the increasing costs associated with commercial textbooks and decreasing financial support of public schools, it is important to better understand the impacts of open educational resources on student outcomes. The purpose of this quantitative study is to analyze whether the adoption of open science textbooks significantly affects science learning outcomes for secondary students in earth systems, chemistry, and physics.

This study uses a quantitative quasi-experimental design with propensity score matched groups and multiple regression to examine whether student learning was influenced by the adoption of open textbooks instead of traditional publisher-produced textbooks. Students who used open textbooks scored .65 points higher on end-of-year state standardized science tests than students using traditional textbooks when controlling for the effects of 10 student and teacher covariates. Further analysis revealed statistically significant positive gains for students using the open chemistry textbooks, with no significant difference in student scores for earth systems. While the effect size of the gains were relatively small, and not consistent across all textbooks, the study’s findings suggest that open textbooks can be as effective or even slightly more effective than their traditional counterparts has important considerations in terms of school district policy in a climate of finite educational funding.

Keywords: open educational resources; open textbooks; science education; secondary education; propensity score matching

Introduction

For better or for worse, the textbook is the single most predominant curriculum delivery vehicle in schools in the United States (Jobrack, 2011). The textbook’s role, however, extends beyond merely providing content upon which students learn. The William and Flora Hewlett Foundation, an early leader of the OER movement, defines open educational resources as “teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use and reutilization.”
I Need a Hero!

“Student test scores will improve when professional development is provided to teachers to help them understand the new activities and pedagogies made possible by the open textbooks.”

A Preliminary Examination of the Cost Savings and Learning Impacts of Using Open Textbooks in Middle and High School Science Classes

Abstract

Proponents of open educational resources claim that significant cost savings are possible when open textbooks displace traditional textbooks in the classroom. Over a period of two years, we worked with 20 middle and high school science teachers (collectively teaching approximately 3,900 students) who adopted open textbooks to understand the process and determine the overall cost of such an adoption. The teachers deployed open textbooks in multiple ways. Some of these methods cost more than traditional textbooks; however, we did identify and implement a successful model of open textbook adoption that reduces costs by over 50% compared to the cost of adopting traditional textbooks. In addition, we examined the standardized test scores of students using the open textbooks and found no apparent differences in the results of students who used open textbooks compared with previous years when the same teachers’ students used traditional textbooks. However, given the limited sample of participating teachers, further investigation is needed.

Keywords: Cost; open educational resources; remix; reuse; open textbooks; electronic textbooks; open access

Introduction

Public education budgets continue to shrink while the public’s expectations for the performance of its educational institutes continue to increase. This tension places many school districts in a difficult position as they attempt to find ways to do more with less (Odden et al., 2007). Over the last two decades, textbooks and other educational resources have repeatedly undergone scrutiny in an effort to determine whether the amount of learning they facilitate justifies their costs (Card & Krueger, 1996; Chaudhary, 2009; Hanushek, 2002). Open education resources (OER), educational materials that are available at no cost and under open copyright licenses or in the public domain, offer an alternative to traditional textbooks and resources. According to the Organization for Economic Cooperation and Development (OECD), “the definition of OER currently most often used is ‘digitized materials offered freely and openly for educators, students, and self-learners to use and reuse for teaching, learning, and research’” (OECD, 2007, p.10). In addition to potentially saving school and district resources, OER can also be adapted to individual circumstances, printed on demand or used in digital formats, and leveraged to enable new pedagogical practices.
Leverage Technology for Innovation

Underserved Communities and Disciplines

New Ways to Teach and Learn

Leverage Technology for Innovation
Multimedia Design and Apps in Instruction

- Grad-level distance education course
- Students incrementally, iteratively develop a working prototype
- Focus more on *design* principles & practices as opposed to development
- Using GitHub to host and document the discussion this year and beyond
S.M.A.R.T. Chemistry Lab

- Student generated with faculty supervision
- Short videos that present skills
- Uses QR codes to make a “smart lab” that demonstrates use of equipment
Effectiveness of Student-Generated Video as a Teaching Tool for an Instrumental Technique in the Organic Chemistry Laboratory
Journal of Chemical Education, 2015

Questions

1. Do you feel prepared to take an infrared spectrum?
2. Do you understand each step of the procedure?
3. Why is it important to run a background IR?
4. What does an IR spectrometer do? Why is it important?
5. Handling salt plates requires the use of what safety equipment?
6. Why is the above safety requirement important?
7. What software is used in this experiment?
8. Select the correct set of commands for operating the IR software.

Produces measurable gains in student outcomes
Work with Your Sidekicks and Find Your Secret Weapons

• Librarians

• Centers (teaching & learning, faculty excellence, etc.)

• Colleagues

• And who else?
Storage and Discovery
Accessibility

WHEN USER EXPERIENCE DOESN'T CONSIDER ALL USERS IT SHOULD BE CALLED SOME USERS EXPERIENCE. YES, SUX.
Information Literacy

The Credible Hulk.

“You wouldn’t like me when I’m angry…
Because I always back up my rage with
facts and documented sources”
On the Team... not in the way!
Textbook Heroes Working Together