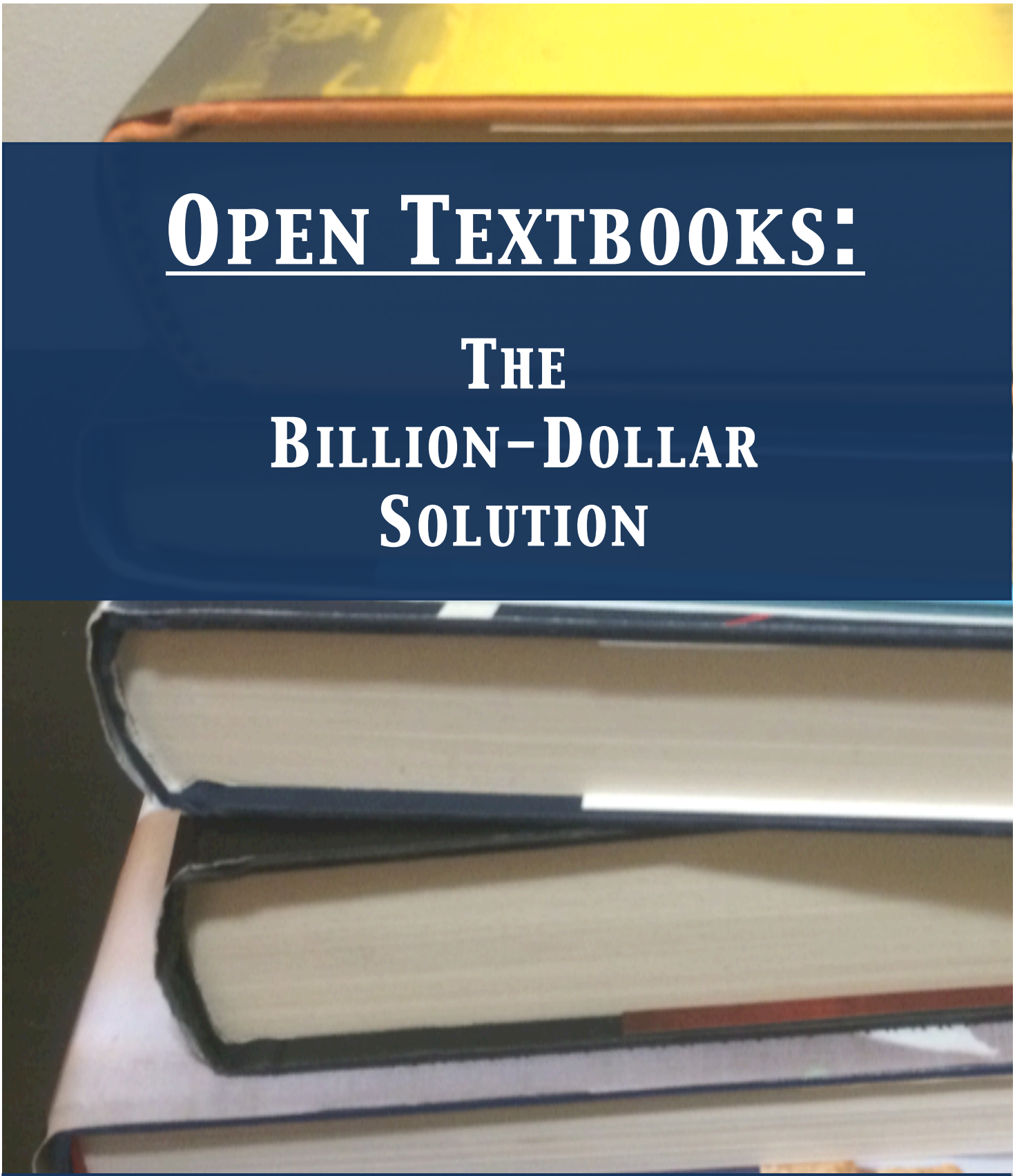

Open Textbooks:

The Billion-Dollar Solution

MASSPIRG - CONNPIRG - NJPIRG
MARYPIRG – OSPIRG - WASHPIRG - CALPIRG

The Student PIRGs

Open Textbooks:

The Billion-Dollar Solution

Ethan Senack
The Student PIRGs
February 2015

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Additionally, the author would like to thank the following people for their assistance compiling the data used in this report: Charlotte Roh and Marilyn Billings from UMass - Amherst, Beth Turtle of Kansas State, Christopher Soran from Tacoma CC, Quill West of Pierce Community College, David Ernst at UMN, and MJ Bishop at UMD.

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Finally, a special thanks to the William & Flora Hewlett Foundation for their support.

The Student Public Interest Research Groups (Student PIRGs) are independent statewide student organizations that work on issues like environmental protection, consumer protection, and hunger and homelessness. For nearly 40 years students working with their campus PIRG chapters have been making a real difference in people's lives and winning concrete changes to build a better world.

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EXECUTIVE SUMMARY:

According to the College Board, the average undergraduate student should budget between $1,200 and $1,300 for textbooks and supplies each year. That's as much as 40% of tuition at a two-year community college and 13% at a four-year public institution.

For many students and families already struggling to afford a college degree, that is simply too much – meaning more debt, working longer hours, or making choices that undermine academic success.

Unfortunately, even the proliferation of cost-saving options like used books, textbook rental programs, and e-textbooks is not enough to solve the problem. Publishers undermine these markets by releasing new editions, bundling in single-use pass codes, or including use restrictions. Even more problematic, the price of these textbook options is still determined by the ever-increasing price of a new, printed textbook.

> One thing is clear - the current textbook market does not deliver the educational opportunity it can and should.

In order to reduce costs for students now, and in the future, we must break free from the traditional textbook market and deliver educational materials through an alternative model.

This report analyzes the potential of open textbooks and open licensing to become that alternative.

In brief, open textbooks are faculty-written, peer-reviewed textbooks that are published under an open license – meaning that they are available free online, they are free to download, and print copies are available at $10-40, or approximately the cost of printing.

This report reviews data collected from five different campus-based pilot programs that encouraged faculty to replace the traditional textbook for their course with openly licensed educational resources (OER) and open textbooks.

FINDINGS:

Analysis of these pilots determines that a student saves $128 per course, when their traditionally published textbook is replaced with an open textbook.

By extrapolating average student savings and applying it to larger segments of the student population, we can predict that open textbooks have the potential to save more than a billion dollars each year.

Full-Time Undergraduates (11.1 million)	$1.42 billion
Students taking Intro. Psychology (1.5 million)	$191 million

Additionally, by comparing total investment and money spent during these pilots with the total savings by students as a result of the project, we can conclude that investing in open textbooks has an exponential return on investment in student savings.

RECOMMENDATION:

Institutions and all stakeholders in higher education should take greater ownership over solving the problem of high textbook prices, and can do so effectively by providing the training and resources faculty need to convert their classroom to an open textbook.

INTRODUCTION:

The cost of a college degree has increased significantly over the past decade. In 2013, 7 in 10 seniors at public and private nonprofit colleges graduated with student loan debt. Among those borrowers, the average debt was over $28,000.[i] As a nation, Americans hold over $1 trillion in student loan debt.

At the same time, college textbook costs have skyrocketed. While textbooks by no means represent the majority of costs in pursuing a higher education, they are one of the largest out-of-pocket expenses that students face each year.

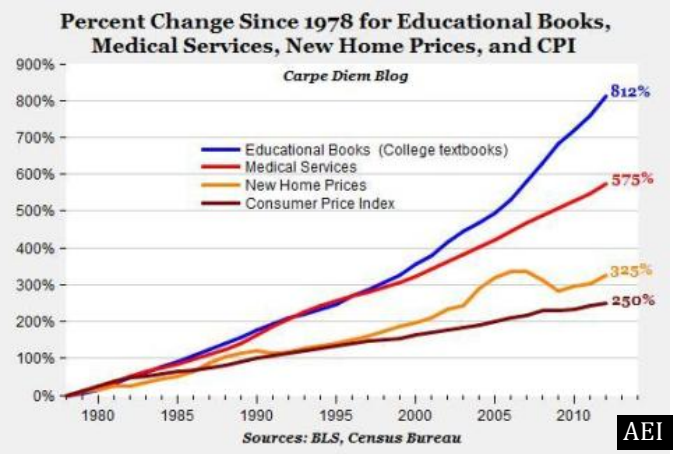
According to the College Board, the average undergraduate student should budget between $1,200 and $1,300 for textbooks and supplies each year.[ii] That's as much as 40% of tuition at a two-year community college and 13% at a four-year public institution.

For many students and families already struggling to afford a college degree, that is simply too much – meaning more debt, working longer hours, or making choices that undermine academic success.

INCREASING PRICES SHOW NO SIGN OF SLOWING

Since 1978, college textbook costs have increased 812%.[iii] To put that in context, it means that textbook prices have increased at 3.2 times the rate of inflation.

With oft-exceeding $200 price tags, the cost of textbooks has become a serious barrier to college access and a negative impact on student success. A 2014 Student PIRGs study[iv] found that 65% of students had skipped buying or renting a textbook because it was too expensive, and 94% of those students felt that doing so would hurt their grade in a course. Additionally, nearly half of students said the cost of textbooks impacted how many courses they were able to take.



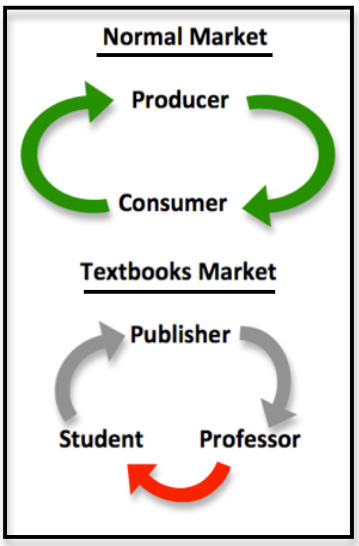
A TEXTBOOK MONOPOLY

Since the release of *Ripoff 101* in 2004, the Student PIRGs have done consistent research to document the rising cost of textbooks, cost-saving measures, and the tactics used by publishers to drive prices higher.

The root of the problem comes from two flaws within the textbook market.

First, just five textbook publishers control more than 90% of the $8.8 billion market.[v] As a result, these companies are protected from serious market competition.

At the same time, traditional textbook publisher benefit from a fundamental market flaw in the college textbook market. Unlike a typical market, there is no direct interaction between the producer and the consumer. With normal markets, like the automobile market, the consumer exercises control over prices by choosing to purchase products that priced best for their value. This consumer choice forces producers to price their products competitively.



In the textbook market, this consumer control is eliminated by the fact that the professor, not the student/consumer selects the product, and the student/consumer actually expends the money. Because of this, the student is a captive market, and traditional publishers are able to drive continually prices higher without fear of market repercussion.

Short-term solutions relieve pressure

Fortunately for students, the emergence of some cost-saving options has helped drop sticker prices on many books. These options – used book markets, rental programs, and e-textbooks – are often heralded as the solution to high prices, but in reality, they only offer a temporary drop in student spending.

One problem with these options is that they are consistently and successfully undermined by traditional publishers. Whether it's through the release of new editions every few years or through attached products like pass codes that are single-use and expire a few months after activation, publishers are able to limit the efficacy of these options and maintain their lock on the market.[vi]

Likewise, e-textbooks offer students some up-front savings, but merely continue the exploitative practices that publishers use to control the print market. E-textbooks often come with page printing limits, device use limits, expiration dates that are placed part of the way through a semester, and they have no resale value.[vii]

The biggest problem – and the reason that these options will never

truly solve the high cost of textbooks – is that their price is inevitably determined by the ever-increasing price of a new, print edition.

As these cost-saving options proliferate, more students forego purchasing books, and more turn toward illegal downloading, student spending has plateaued. This slow-down, however, will not last. As long as publishers continue driving prices higher, used books, rentals, and e-textbooks aren't enough to solve the problem.

As long as publishers continue driving new book prices higher, used books, rentals, and e-textbooks aren't enough to solve the problem.

A LONG-TERM SOLUTION GAINS GROUND

Over the past decade, an alternative to the traditional publishing system has taken root and expanded rapidly. With conceptual roots in the open-source software movement, Open Textbooks present an evolution in learning materials and have the potential to solve the problem of high textbook prices while delivering students a superior learning experience.

This report aims to explore the potential of open textbooks and make recommendations on how to fulfill that potential.

What are open textbooks?

In Brief:

Open textbooks are faculty-written, peer-reviewed textbooks that are published under an open license – meaning that they are available free online, they are free to download, and print copies are available at $10-40, or approximately the cost of printing.

In Depth:

Open textbooks are part of a broader movement called Open Educational Resources (OER), and are conceptually rooted in the open-source software movement. Just as coders and developers realized the power of the Internet to facilitate collaboration and content delivery to massive audiences at little-to-no-cost, the concept was also applied to educational content in the late 90s.

Open licenses – the most common of which is the Creative Commons License[viii] – allow for intellectual property to be accessed, used, and even adapted for free by individual users and the broader public. This type of licensing is in direct contrast to traditional publishers, who strictly limit access and use of their textbooks and materials.

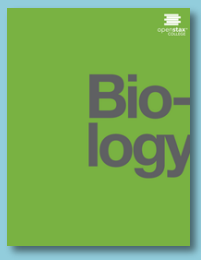
Open textbooks are created in many different ways. There are open textbook publishing companies, who follow the typical process of authoring, editing, and reviewing,[ix] and pay royalties to authors based on the sale of print books and supplementary materials. In other cases, authors or teams of authors are funded by grants from foundations, their institutions, or the government. In short, open textbooks still cost money to create, but they are produced and distributed in a way that allows maximum benefit.

Most open textbooks are of comparable quality to traditional textbooks, and there are online resources that can help identify the highest quality resources. However, as with any book, the professor is the best judge of whether or not a book is right for a class.

Right now, there are more than 100 open textbooks available,[x] primarily for introductory-level and general education courses, as those have the highest enrollment and therefore, the largest potential impact.

More than 3,000 faculty have already adopted open textbooks.[xi]

Profile of an Open Textbook:



Title: Biology
Publisher: OpenStax
Publish Date: March 2013

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PROGRAM ANALYSIS:

Open Education Initiative, University of Massachusetts, Amherst

Faced with the rising cost of textbooks, the Office of the Provost and the UMass Amherst Libraries launched the Open Education Initiative in early 2011. The goal of the project was to find alternatives to and replace high-cost textbooks.[xii]

Structure:

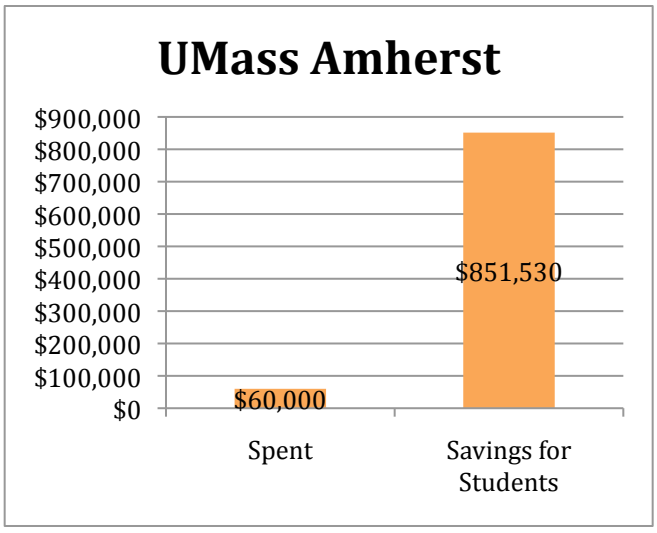
The OEI created a small grant program to provide faculty with resources and incentive to convert their classroom from a traditional, high-cost textbook to open educational resources (OER), including open textbooks. Grants range from $1000 - $2500, depending on the size of the class and the number of students impacted.

Library staff oversee the initiative, providing the content expertise and working directly with faculty to overcome obstacles and develop the materials necessary. Staff hold regular trainings and workshops for the faculty that apply, offering one-on-one consultation to give direct feedback.

Analysis:

After 4 years of operation, the Open Education Initiative has demonstrated tremendous impact on students. At an investment of approximately $60,000 in grants to faculty, the program has generated nearly $1 million dollars in savings.

More importantly, this figure does not include the number of faculty who continued using open textbooks after their inaugural semester. When included, savings estimates are as high as $1.5 million.



On an individual level, when comparing the cost to students of the displaced traditional printed textbook and the open textbook/open education resources, average student savings was $125.98 per course.

AVERAGE STUDENT SAVINGS PER COURSE:

$125.98

Open/Alternative Textbook Initiative, Kansas State University

The Open/Alternative Textbook Initiative was launched in Spring 2013, in response to concerns around the high cost of commercial print textbooks. The Initiative was funded by the K-State Libraries and a Student Centered Tuition Enhancement fee, with the goal of "encourage faculty experimentation and innovation in finding new, better, and less costly ways to deliver learning materials to students."[xiii]

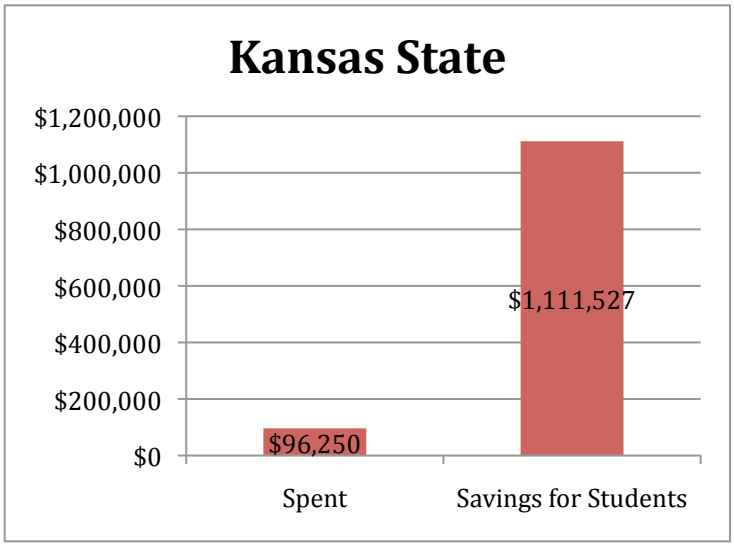
Structure:

The Initiative created a stipend program ranging from $2,000 to $5,000 for faculty who adapt or develop their own alternative to a traditional print textbook.

Applications are reviewed by a panel consisting of students, faculty, representatives of the Library, the Provost's office, and the Center of Advancement of Teaching and Learning, and grantees meet at the end of each academic cycle to compare experiences and share best practices

Analysis:

After 3 semesters, the Open/Alternative Textbook Initiative has resulted in significant savings for students. At an overall investment to-date of $96,250 in grants to faculty, the program has generated over $1.1 million dollars in savings.



At the end of the Spring 2014 semester, twenty courses had been converted away from traditional textbooks, impacting more than 8,000 students at the University.

On an individual level, when comparing the cost to students of the displaced traditional printed textbook and the open textbook/open education resources, average student savings was $138 per course.

AVERAGE STUDENT SAVINGS PER COURSE:

$138

OER Project,
Tacoma Community College

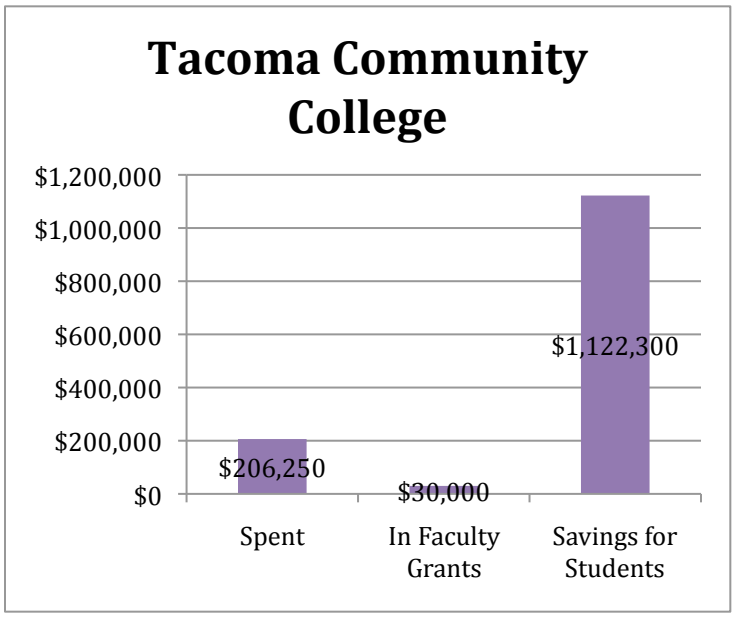
Tacoma Community College launched a pilot open education resource (OER) project in 2012 with the goal of lowering college costs to students, after campus librarians noticed that the most checked-out books were course textbooks. The library and e-learning directors wrote a joint proposal to the Vice Provost of Instruction, who involved the student government in a project to save students $250,000 on textbooks in two years.

Structure:

The Project was funded through a start-up investment from the Student Technology Fee and through the campus administration's budget. The funding was allocated to hire a full-time staff member that would promote OER use on campus and work directly with faculty to develop content, compile it, and adopt it in their classes.

Analysis:

Since it's launch, the OER Project has reached more than 10,000 students at Tacoma Community College, generating more than $1.1 million dollars in student savings.



In it's first year alone, the Project helped introduce open education resources and displace traditional textbooks in more than 65 sections, a number that increased exponentially in following years as new faculty joined the program and earlier faculty continued using OER.

On an individual level, when comparing the cost to students of the displaced traditional printed textbook and the open textbook/open education resources, average student savings was $110.79 per course.

AVERAGE STUDENT SAVINGS PER COURSE:

$110.79

Open Textbook Library, University of Minnesota

The Open Textbook Library was launched nearly 4 years ago, as a way to centralize existing open textbooks and make them easier to find, and to provide credibility and quality assurance around those materials. The Library consolidated available open textbooks onto a simple, user-friendly website, and includes a system for faculty to provide peer-reviews.

UMN's College of Education and Human Development provided the funding to pay faculty for reviews in the catalog.

While the original intent of the project was to build open textbook credibility through reviews, it soon became clear that when faculty engaged with open content to provide a review, they were likely to adopt the open textbook in their class.

To date, the program has expanded to provide training and workshops to a number of other campuses across the country.

As the project has expanded significantly beyond the boundaries of the University of Minnesota and now has impacted more than a dozen institution's open textbook efforts, it should be noted that the savings presented here are a small portion of the total impact of this project.

To date, this project has impacted over 2,900 students, and generated more than $382,000 in student savings. That results in an average student savings of $132.

AVERAGE STUDENT SAVINGS PER COURSE:

$132

Maryland Open-Source Textbook Initiative, University of Maryland

The MOST Initiative was launched in 2013, with the goal of expose faculty and students to feasible alternatives to traditional educational materials and encourage faculty to use or even create open educational materials.

While the momentum and drive behind the creation of the initiative came primarily from students and a concerted effort by the UMD Student Government, the University System recently expanded their efforts and partnered with Lumen Learning, an organization that conducts trainings with faculty and education around OER adoption and creation.

As of March 2014, the initiative reports having impacted more than 1,100 students, for a total savings of $130,000. On an individual level, this results in an average student savings of $118.18.

AVERAGE STUDENT SAVINGS PER COURSE:

$118.18

Potential National Impact:

Compiled data from these five highlighted programs reveals the following:

School	Students Enrolled in OER Courses	Average Savings Per Student	Total Savings
University of Massachusetts - Amherst	5,970	$125.98	$851,530
Kansas State University	8,058	$138	$1,111,527
Tacoma Community College	10,130	$110.79	$1,122,300
University of Maryland	1,100	$118.18	$130,000
University of Minnesota	2,904	$132	$382,374
TOTAL/AVERAGE:	**21,697**	**$127.75**	**$3,597,731**

From this information, we can predict that when a traditional print textbook for an introductory level course is replaced with OER and open textbooks, a student saves approximately $128 per course, per semester.

With a pilot data-backed estimate on average student savings per course, broader student savings can be extrapolated to demonstrate the potential impact of open textbooks on students around the country – and make the case that wider use of open textbooks has the potential to save students more than a billion dollars every year.

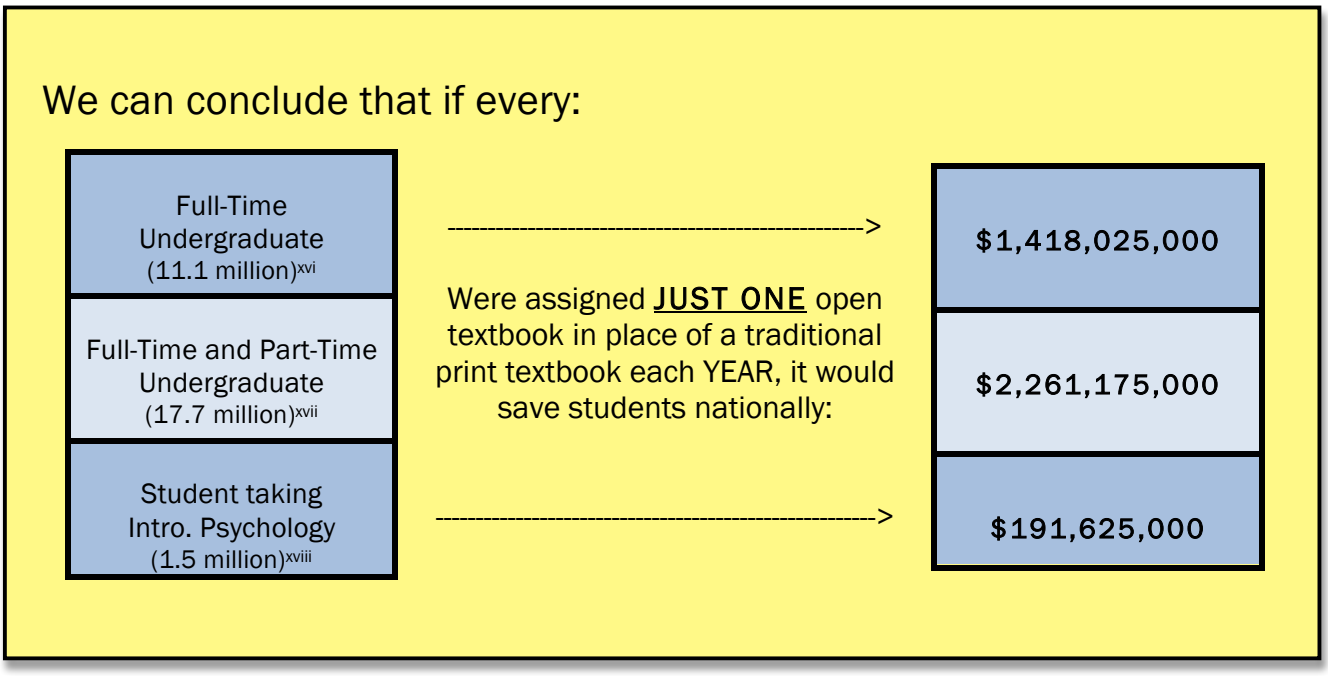
Based on the National Center for Education Statistics' most recent enrollment records, there are more than 11 million full-time undergraduates at institutions of higher education. With the availability of more than 160 open textbooks right now, we stipulate that every undergraduate takes at least ONE course for which there is an open textbook available, each year. From this stipulation, we can estimate that if every student had just one of their traditional textbooks replaced with OER or an open textbook, it would save students in this country more than $1 billion dollars annually.

This is also a conservative estimate. This savings figure does not include the fact that most students take two

If every student had just one of their traditional textbooks replaced with OER or an open textbook, it would save students in this country more than $1 billion dollars annually.

semesters of schooling per year (which would double the estimates of savings), or the fact that the average full-time student takes as many as 5 or 6 courses per semester.

To further cement the potential of open textbooks, we could limit our calculations to just the number of students that take an Introductory Psychology course every year, as the American Psychological Association reports.[xiv] Introductory Psychology makes an ideal example for comparison, because there is high quality, faculty-used open textbook available for the course, adoptable immediately. If each of these students had their traditionally published textbook replaced with the OpenStax *Psychology*[xv] textbook, it would save students across the country almost $200 million dollars each year.



CONCLUSION:

With the price of a traditional, print textbook skyrocketing, it's clear that something needs to be done to provide relief to students and families that already face tremendous burdens in affording a higher education. With cost-saving options like textbook rentals, used books, and e-textbooks at the mercy of the ever-increasing price tag on print books and unable to tackle the fundamental flaws in the textbook market, it's clear that these options simply aren't enough.

Open textbooks offer a clear, demonstrable benefit over the traditional market.

Open textbooks have the ability to save students billions of dollars every year.

First, open textbooks have the potential to deliver monumental savings for students. With access free online, downloading and self-printing options for free, and print copies available at approximately the cost of printing, open textbooks have the ability to save students billions of dollars every year.

Second, open textbooks show an incredible return on investment. Where many financial aid programs deliver a dollar of savings for every dollar spent, the "return on investment" with open textbooks is exponential. At Tacoma Community College alone, students savings generated were more than 6 times the amount invested.

At Tacoma Community College alone, students savings generated were more than 6 times the amount invested.

It's clear that open textbooks are the right path forward – and it's time we do more to take advantage of this alternative. We can't afford to pass up a billion-dollar solution.

Policy Recommendations:

The three main challenges to greater open textbook adoption are:

- Awareness: Despite the increases in open textbook use, many faculty members are not aware that these alternatives exist and are ready for classroom use.
- Access: In making the transition from publisher prepared materials to open textbooks, faculty often need some assistance in finding open materials for their course and training on how to curate the content.
- Availability: While there have been significant gains in the number of open textbooks readily available, there is still much room to expand beyond introductory level courses.

For Institutions:

Institutions are both perfectly suited and well equipped to take ownership over solving high textbook prices. As faculty members are often the final decision-makers in selection of textbooks, colleges and universities have access to the most important stakeholders in the process. Through their libraries, institutions have the infrastructure and personnel to provide training and education to their faculty around open textbooks, and have the resources to incentivize transitioning to open textbooks.

Institutions should convene campus stakeholders and launch their own open textbook programs based on the pilots described in this report – taking the initiative in reducing textbook prices while increasing access.

For Faculty:

Faculty should consider adopting an open textbook in their classroom, if it is the most appropriate material for their course. More than 2,500 faculty members from 750 U.S. colleges have signed the Faculty Statement on Open Textbooks, which expresses their intent to consider using high-quality open textbooks whenever appropriate.

Faculty can check the University of Minnesota's Open Textbook Library to see if there is a book available for their class.

For Policymakers and Legislators:

Policymakers can use their unique positions of leadership to encourage higher education stakeholders in their states or districts to take action on high textbook prices and launch programs that encourage the adoption of open textbooks.

Policymakers can also support efforts by investing funds and programmatic support for faculty or institutions that are switching to open textbooks.

METHODOLOGY:

PILOT PROGRAM ANALYSIS:

The information about institutional pilot programs in this report was gathered in three ways. Review of class-by-class and exact student cost comparison data, self-reporting totals by individuals directly overseeing program efforts, and when those options failed, from published updates, reports, and releases by staff at the mentioned programs.

Average savings was calculated by dividing the total project savings by the total number of student enrolled in courses that were impacted by the project.

By school:

- University of Massachusetts, Amherst – Student PIRGs staff analyzed class-by-class data that includes professor name, section title, number of students enrolled per course, and the difference in cost between the traditionally published textbook and it's OER replacement.

- Kansas State University – Student PIRGs staff analyzed course-by-course data that includes course name, annual number of students enrolled per course, cost of the traditional textbook that was displaced by an open textbook, and total annual savings generated per section. To date, Kansas State has reported their total savings at a rate of $100 per student per class to reflect the fact that not every student buys a new print edition of the traditional textbook.

- Tacoma Community College – Student PIRGs staff analyzed section-by-section data that includes professor name, semester, section number, number of students enrolled per section, a description of the resource change made in each section, the average savings per student by section, and total savings generated per section.

- University of Minnesota – Data on the University of Minnesota Open Textbook Program's savings generated was self-reported by staff from the project.

- University of Maryland – Data on the University of Maryland program was taken from a progress update on the program from March 2014.

POTENTIAL NATIONAL IMPACT:

Frankly speaking, there are many different ways to calculate the potential national impact of open textbooks if they are more widely adopted. The average savings per student was calculated using the data compiled from individual campus pilot programs above.

Previous estimates of potential savings per student when a course is transitioned from a traditional textbook to an open textbook have hovered between $95 - $115 in previous PIRG reports and external program analyses. In many cases, average savings is rounded down to $100 to reflect the fact that not every student pays full price for a traditional textbook (though many do) and therefore, do not 'save' the full price of the displaced material.

It is worth noting that even at $100 average savings per course, calculations of national impact would still land over $1 billion.

Second, it is worth noting that the courses in these pilot programs were primarily introductory level courses, for which there are significant open educational resources available. This is important to note because the cost of introductory level textbooks is often higher than that of textbooks in more advanced classes, with the exception of certain subjects. The programs reviewed in this report did include a wide variety of course subjects and the materials displaced per course range from $30 - $250.

This report uses a range of student populations to reflect the potential student savings for a number of reasons.

First, the author recognizes that while there are more than 160 open textbooks available right now, there are not open textbooks available for every course in every discipline, and therefore it is unrealistic to stipulate that every textbook in every course could be replaced with an open textbook. A reasonable stipulation is that every full-time and part-time student takes one course per year for which there is an open textbook available.

This means that it is reasonable to calculate the potential cost savings of open textbooks if every student had just one of their traditional textbooks replaced with an open textbook.

Return on Investment

The return on investment figure used in regards to Tacoma Community College was calculated by dividing the total amount of student savings generated by the project by the total amount of money spent by the institution to develop and fund the project.

ENDNOTES:

[i] Student Debt and the Class of 2013. TICAS
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