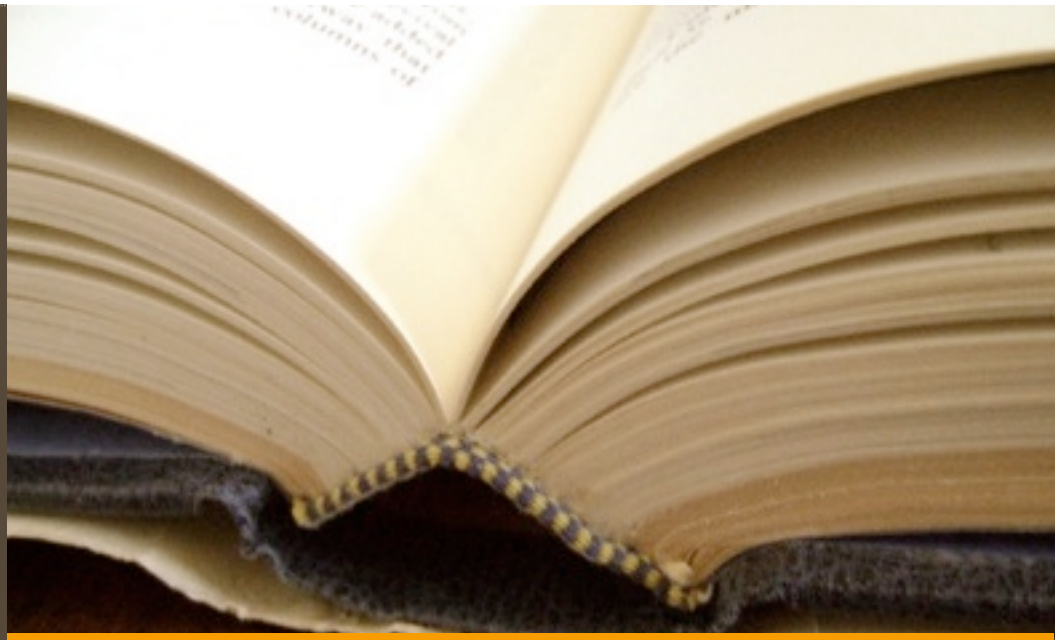
Arizona PIRG
CALPIRG
ConnPIRG
CoPIRG Student Chapters
INPIRG
Iowa PIRG
Maine PIRG
Maryland PIRG
MASSPIRG
MoPIRG
NJPIRG Student Chapters
Ohio PIRG
OSPIRG
WashPIRG
WISPIRG



A COVER TO COVER SOLUTION

How Open Textbooks Are The Path To Textbook Affordability



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How Open Textbooks Are The Path To Textbook Affordability

Nicole Allen
The Student PIRGs
September 2010

Acknowledgements

The author would like to acknowledge the CALPIRG, CoPIRG, MASSPIRG, OSPIRG, UConnPIRG, WashPIRG and WISPIRG students and staff who assisted with research for this report, especially the chapters at UConn-Storrs, UW-Madison, CU-Boulder, UCSB, University of Oregon and University of Washington. Thanks to the following people for their assistance with the development of this report: Jacky Hood from College Open Textbooks and the Community College Consortium for Open Educational Resources; Eric Frank and Carole Walters from Flat World Knowledge; Dr. D. Steven White from UMass-Dartmouth.

Special thanks to the William & Flora Hewlett Foundation for Education for their support of this project.

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The Student Public Interest Research Groups (Student PIRGs) provide an independent voice on behalf of the public interest – investigating problems, crafting solutions, educating the public and offering students meaningful opportunities for civic participation.

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Executive Summary

College textbook prices have skyrocketed in recent years, threatening the affordability and accessibility of higher education in America. The average student spends $900 on textbooks annually, which can be the tipping point between affording a degree and dropping out because of cost. As prices continue to rise, the need for solutions is increasingly urgent.

Recent developments have brought signs of relief from runaway costs. In July of this year, provisions from the Higher Education Opportunity Act took effect, requiring publishers to disclose textbook prices to professors during the marketing process. Increased awareness of cost will create an atmosphere where lower-cost options can gain traction. Concurrently, several potential solutions have evolved in the textbooks marketplace.

- **Cost-reducing options for traditional textbooks:** Rentals, e-books and e-readers have emerged as less expensive alternatives to costly, traditional textbooks. As of this fall, more than 1,500 colleges offer books for rent, and more than 7,000 common titles are available as e-books. New e-reading devices like Apple's iPad and Amazon's Kindle offer a convenient, portable way for students to read and store digital books.
- **Alternate models:** Open-source textbooks are gaining traction as an innovative alternative. Open textbooks are offered online under an open-source license that allows free digital access, low-cost print options and customization by instructors. More than 1,000 professors are using open textbooks this fall, and dozens of high-quality books are already available.

The Student PIRGs conducted this study to evaluate the long-term potential of these new options as solutions to the high cost of textbooks.

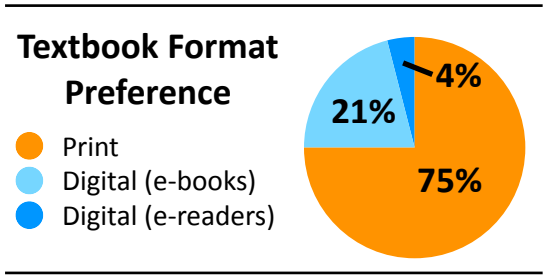
Report Findings

During the spring and summer of 2010, the Student PIRGs conducted a survey of 1,428 students from 10 campuses and an analysis of textbook prices for 10 common college subjects. Our findings are as follows.

1. Textbook affordability solutions must satisfy a wide range of student preferences.

The survey results show that student preferences vary widely. Therefore, the solution must offer a multitude of affordable options to extend savings to all students.

- Students are split between print and digital: 75% of the students surveyed said print was their preferred format; 25% chose digital. This finding mirrors a survey we conducted in 2008, which suggests that student attitudes have not changed significantly.



- A combination of print and digital may be best for some students: 47% of the students said they would be comfortable using at least one of the digital textbook formats.
- To rent or to buy? Most students would choose both: 93% of the students would rent at least some of their textbooks, but only 34% would rent all of them.

2. Traditional cost-reducing options have limited potential because they only appeal to a subset of students.

We used the student survey and textbook price data to estimate how much rentals, e-books and e-readers could reduce the average amount students spend on textbooks per year ($900). All three were less expensive than buying print textbooks,

but the savings are limited because the options do not appeal to all students.

- Rentals are 61% less than new print textbooks on average and could reduce the average amount spent per year by 33% to $602.
- E-textbooks are 52% less than new print books on average and could reduce the average amount spent per year by 8% to $830.
- E-reader textbooks are 39% less than new print books on average and could reduce the average amount spent per year by 1.4% to $888.
- All three options combined could reduce the average amount spent per year by 34% to $598.

3. Open textbooks can reduce costs for all students and have the potential for long-term sustainability.

Open textbooks come in a range of affordable formats that accommodates all preferences, and thereby extends the savings to all students. Putting open textbooks to the same test as the traditional cost-reducing options, we found that the overall results would be dramatic.

- Open textbooks could reduce the average amount spent per year by 80% to $184.

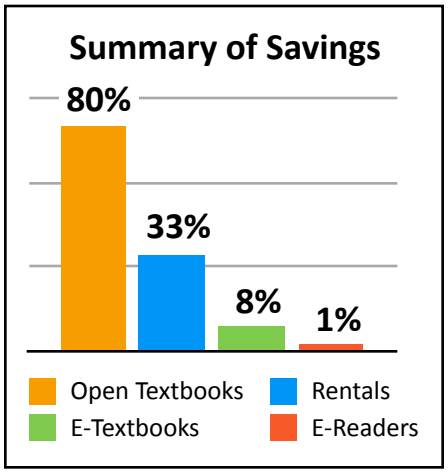
Open textbooks a strong potential for savings, but their success will depend on the development of sustainable publishing models. Our study found that students are willing to purchase print copies and other optional items, even though the full text of open textbooks is free online. The sale of such products could serve as the foundation of innovative business models for publishers.

Conclusion

This study demonstrates that the solution to textbook affordability must both reduce costs and address the diversity of student preferences.

The potential impact of rentals, e-textbooks and e-readers is limited because they only match the preferences of a subset of students. While such options can help reduce costs in the short term, they cannot be a long-term solution.

Open textbooks can reduce costs substantially and can accommodate the full spectrum of students. Open textbooks are a comprehensive solution with a variety of affordable formats and purchasing options. Open textbooks even go a step beyond reducing costs by incentivizing publishers to respect students as consumers and offer a wider range of products at affordable prices.



We therefore conclude that the next step toward textbook affordability is to promote the creation and adoption of open textbooks. Now that the federal price disclosure law has made cost integral to the textbook marketing and selection process, promoting open textbooks can create pressure for publishers to lower their prices.

Recommendations

- Publishers should develop new models that can produce high quality books without imposing excessive costs on students. The emergence of open textbook publishers such as Flat World Knowledge proves this is possible.
- Faculty should seek, consider and adopt open textbooks and other affordable alternatives whenever possible.
- Colleges and governments should invest in the creation of more open textbooks and the innovation of sustainable models.
- Students should take action against high costs by spreading the word about open textbooks to their faculty, campuses and communities.

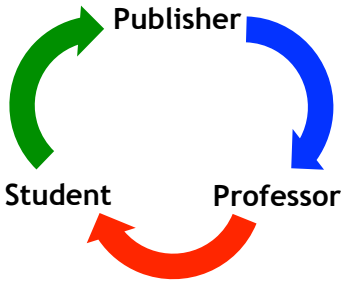
INTRODUCTION

College textbook prices have skyrocketed in recent years, threatening the affordability and accessibility of higher education in America. According to the Government Accountability Office (GAO), students spend about $900 per year on textbooks, which amounts to 26% of tuition for an average four-year public university student and 72% of tuition for a community college student.[1] Furthermore, research by the Student Public Interest Research Groups (PIRGs) found that textbook prices have been rising four times the rate of inflation for the last two decades.[2] On top of ballooning tuition and fees, textbooks can be the tipping point that forces students into deeper debt, working longer hours, or in extreme cases, dropping out altogether.

The Textbook Industry Continues to Drive Prices Skyward

Over the past seven years, the Student PIRGs have conducted numerous studies to investigate the rising cost of college textbooks and its impact on students. The underlying cause for high prices is a market failure that hinders the economic checks and balances that naturally regulate costs (Figure 1). In a normal market, consumers exercise choice in which products to buy, and competition among producers keeps prices under control. In the textbooks market, professors choose which textbooks students must buy, which eliminates any price competition among publishers. Students have little choice but to purchase their assigned books, which is why publishers are able to set high prices unchallenged.

FIGURE 1



For years, publishers have exploited this market dynamic to reap profits for shareholders while engaging in a range of practices that not only inflate prices, but also undermine cost-saving options. Student PIRG research has documented these tactics, which include:

- **New editions:** Publishers release new editions every 3-4 years regardless of changes in the subject, with prices that are 12% higher on average.[3] Once a new edition comes out, students must buy the new version, and used copies of the older version cannot be sold back.
- **Costly bundles:** Publishers also increase costs by bundling textbooks with expensive workbooks, CDs and pass-codes that increase prices 10-50% or eliminate the resale value of the text. According to 65% of the professors we surveyed, such supplemental items are rarely or never used in class.[4]
- **Resale sabotage:** New "cost saving" options like e-books, loose-leaf and custom editions appear more affordable, but often end up costing more because they have no resale value. For example, a 180 day e-book subscription can end up twice the cost of buying the book and selling it back.[5]

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[1] Government Accountability Office (GAO). 2005. *College Textbooks Enhanced Offerings Appear to Drive Recent Price Increases.* GAO-05-806. http://www.gao.gov/new.items/d05806.pdf.
[2] "New Laws, Free Books and Textbook Rentals Could Help Curb Rising Costs." The Student PIRGs. August 26, 2010.
[3] The Student PIRGs. January 2004. *Ripoff 101: How The Publishing Industry's Practices Needlessly Drive Up Textbook Costs.* For all research by the Student PIRGs, see http://www.studentpirgs.org/textbooks/reports.
[4] The Student PIRGs. February 2005. *Ripoff 101: How The Current Practices Of The Textbook Industry Drive Up The Cost Of College Textbooks.*
[5] The Student PIRGs. August 2008. *Course Correction: How Digital Textbooks Are Off Track And How To Set Them Straight.*

New Federal Regulations Alter Market Dynamics

On July 1, 2010, a set of new federal regulations from the Higher Education Opportunity Act of 2008 (HEOA) went into effect, helping to shift the balance of power in the market. The law requires publishers to include detailed price and revision information when marketing their products to faculty, making cost easier to consider when assigning texts. A 2007 study by the Student PIRGs found that more than three quarters (77%) of professors reported that publisher sales representatives "rarely" or "never" volunteered prices. The same study found that the vast majority of professors (94%) would use cost as a tiebreaker between two equal books. Price transparency will ensure that professors' preference for lower cost textbooks will exert pressure on publishers to reduce prices.

The new federal law also contains several provisions to help students manage their costs in the short term. First, it requires publishers to offer all components of textbook "bundles" separately, making the purchase of bundles optional. Second, the law requires colleges to list assigned textbooks during course registration. Registration typically occurs several months before the start of classes, so students will have substantially more time to plan ahead and shop around for cost-saving options.

A Changing Marketplace: Rentals, E-Books and Beyond

Textbook purchasing methods have expanded rapidly over the last few years, giving students more ways to save than ever before. Three primary options have begun to gain traction in the mainstream market:

- **Renting:** We have always recognized renting as one of the top ways for students to save on textbooks, but until recently, the benefits were reserved to just a handful of campuses.[6] Now, students can rent textbooks online through companies like Chegg.com and BookRenter.com, which operate through the mail like Netflix. They can also rent on campus, now that large bookstore chains have expanded rental services to more than 1,500 colleges this fall. Publishers are even joining in. Cengage Learning and McGraw-Hill, two of the largest textbook companies, also began to explore renting as a strategy to recapture sales lost to used books.

- **E-textbooks:** Publishers have also begun to expand their digital offerings. In 2007, a consortium of publishers launched CourseSmart, an online marketplace for e-textbooks that students can download and read on their computers. Three years later, CourseSmart offers more than 7,000 e-books and claims that its sales have been growing steadily.[7] More recently, other companies have entered the e-book market, including Barnes & Noble and Textbooks.com. With a substantial supply of e-books now available, recent studies have forecast rapid adoption by students.[8] However, findings from our 2008 report *Course Correction: How Digital Textbooks Are Off Track And How To Set Them Straight*[9] suggest that the expansion of e-books may not happen so quickly. The report found that three out of four (75%) student respondents preferred print textbooks to digital, and that e-textbooks were impractical for many students due to high prices and excessive restrictions.

- **E-readers:** Over the last few years e-readers have begun to gain popularity for recreational reading, and in 2009 Amazon.com released the first e-reading device designed for textbooks: the Kindle DX. A number of other devices followed, including the dual-screened eDGe by enTourage and Apple's iPad. Such options have not yet gained a measurable share in the textbooks market, due in part to lukewarm

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[6] The Student PIRGs. 2005. *Affordable Textbooks for the 21st Century: A Guide to Establishing Textbook Rental Services.* http://www.studentpirgs.org/textbooks/reports

[7] CourseSmart has not, however, released official sales data.

[8] Xplana. April 2010. *Digital Textbook Sales in U.S. Higher Education — A Five-Year Projection*. http://blog.xplana.com/reports/digital-textbook-sales-in-u-s-higher-education-–-a-five-year-projection/

[9] Student PIRGs, 2008

results in classroom trials[10] and limited availability of textbook content. However, with iPad's ability to display CourseSmart's e-textbooks and eDGe's newly launched textbook store, e-readers could quickly become a viable option for many students.

We believe the emergence of these three options signifies a shift in the market. Not only do students have new cost-saving options, but publishers have begun to explore new business models that could mean lower prices in the long run.

Parallel to developments in the traditional market, new models for textbook publishing have also advanced. Most notably is open-source textbooks, which are college texts offered online under an open-source license allowing free digital access, low-cost printing and customization by instructors.

➔ **Open textbooks:** Use of open textbooks has more than doubled over the past year, with adoptions in more than 1,300 college classes this fall alone.[11] Leading the movement is publisher Flat World Knowledge, which has already released more than 20 open textbooks and has over 50 more in the pipeline. A likely factor contributing to these rapid gains is that unlike other digital options, Flat World's open textbooks come in a variety of prices and formats, including a free web-hosted version, and affordable softcover print books, PDF downloads, audiobooks, and e-reader versions.



OPEN TEXTBOOK

Financial Accounting
Joe Hoyle & C. J. Skender

Print: $29.95
Online: Free
www.flatworldknowledge.com

The Purpose of This Study

The progress made over the last few years is promising, but there is still a long way to go before textbooks are affordable for all students. Less expensive options are a good start, but can rentals, e-books and e-readers be the overall solution students so desperately need? Or do we need to set the bar higher with new models like open textbooks?

The Student PIRGs conducted this study to evaluate the long-term potential of rentals, e-books, e-readers and open textbooks as solutions to the high cost of textbooks. We use our findings to conclude the best next step toward making textbooks affordable, now that the momentous provisions from the HEOA are now in effect.

[10] "Amazon.com's Kindle fails first college test." *Seattle Times*. May 23, 2010. http://seattletimes.nwsource.com/html/businesstechnology/2011938870_kindle24.html

[11] "150,000 College Students to Save $12 Million Using Flat World Knowledge Open Textbooks for 2010/2011 Academic Year." Flat World Knowledge. August 23, 2010.

FINDINGS

During the spring and summer of 2010, the Student PIRGs conducted a two-part study to investigate potential solutions to the high cost of textbooks. The study consisted of a survey of 1,428 students from 10 colleges collected by more than 50 student volunteers, and an analysis of prices for textbooks in 10 common college subjects.

We found that there is no consensus among students on which option is best; student preferences regarding renting and textbook formats vary widely. This variance severely limits the potential impact of cost-reducing options like rentals, e-textbooks and e-readers, because they only appeal to a subset of students. In contrast, open textbooks are a complete solution because they offer affordable print and digital options that satisfy all students.

Finding 1: Textbook affordability solutions must accommodate a wide range of student preferences.

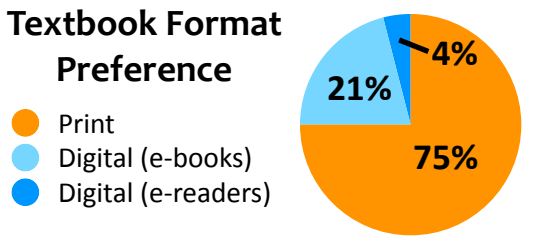
The results of the student survey show that students have diverse preferences regarding textbook formats and renting. This suggests that the solution to high textbook costs will offer a multitude of affordable options, rather than just one.

Students are split between print and digital, and some may prefer both.

The survey results show that students overwhelmingly prefer print textbooks to digital (see Figure 2).

- 75% of the students surveyed selected "regular print textbooks" as their preferred format.
- 25% of the students surveyed selected digital textbooks as their preferred format (21% chose "e-textbooks" and 4% chose "e-readers")

FIGURE 2



These results mirror findings from a study we conducted two years ago: 75% of the students we surveyed in 2008 preferred print, and 25% preferred digital.[12] We cannot draw a definite correlation between these results, as the survey samples were neither identical nor necessarily representative of the entire student population. However, the similarity provides compelling evidence that demand for digital textbooks has not increased dramatically.[13]

Results from the student survey show that many students would be comfortable using both print and digital book, so the best format for some students might be a combination of the two.

- The vast majority (94%) of the students said they are "comfortable" or "very comfortable" with print textbooks.

[12] Student PIRGs, 2008

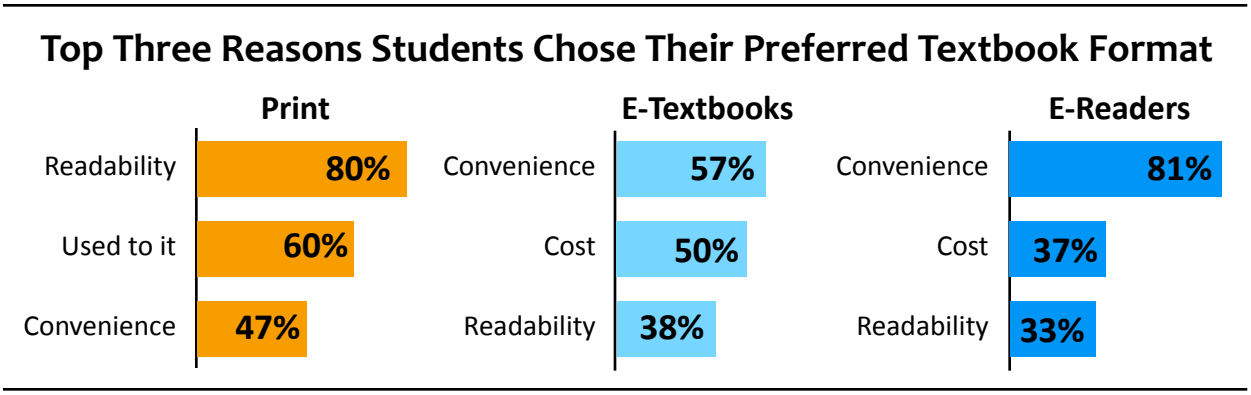
[13] It may be possible that students have not begun to embrace digital textbooks because they are not yet familiar with the available options. However, our survey suggests this is unlikely: only 13% of the students who preferred print textbooks chose "I don't know enough about the other options [e-books and e-readers]" as a reason for their preference.

- Almost half (47%) said they are "comfortable" or "very comfortable" with at least one digital textbook format (38% with e-textbooks, 33% with e-readers, 23% with both).

The survey also asked students to indicate the reasons for their textbook format preference. Although the results varied widely, several themes emerged.

- Readability is the top reason students gave for preferring print textbooks: 80% of the students who prefer print chose "better for reading and note-taking" as a reason for their preference.
- Convenience is the top reason students gave for preferring digital textbooks: 81% of the students who prefer e-readers and 57% of those who prefer e-books chose "more convenient and easy to carry" as a reason for their preference.
- Students prefer different formats, but for the same reasons: both readability and convenience were among the top reasons for all three formats. Cost was not the top reason for any, although the question was about preference not purchasing habits.

FIGURE 3



These results show that students not only have diverse format preferences, but they have diverse *reasons* for those preferences. Without consensus on which textbook features are most desirable and which options best offer those features, it is impossible for a single format to satisfy all students. Therefore, any solution to the high cost of textbooks must offer affordable options in both print and digital formats.

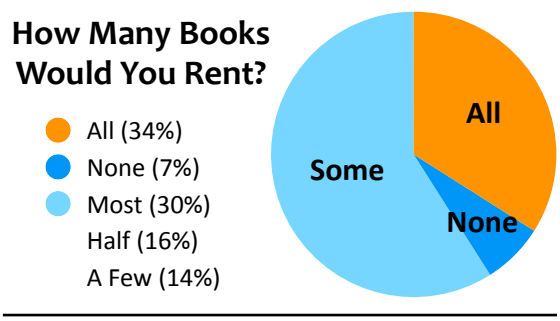
To rent or to buy? Most students would choose both.

According to the survey, renting is a highly popular idea among students. However, having the option to purchase textbooks is still important.

- The vast majority (93%) of the students would rent at least some of their textbooks, and two-thirds (64%) would rent "most" or "all."
- However, only a third (34%) said they would rent *all* of their books, which means the majority of students would still buy some books.

Renting has enormous potential as a cost-saving option, since nearly all students would want to take advantage of it. However, the number textbooks students would rent varies widely. Therefore, for renting to be part of a solution, students must also have the option to buy their texts at an affordable price.

FIGURE 4



Finding 2: Rentals, e-textbooks and e-readers have limited capacity to reduce costs because they only appeal to a subset of students.

The student survey demonstrates that students have diverse preferences, and that no single format can satisfy all students. Rentals, e-textbooks and e-readers only appeal to a subset of students, which severely limits their cost-reducing potential.

We developed a model to estimate the potential market-wide savings of these options. First, we used findings from a 2009 survey and average price data from 100 textbooks from 10 common subjects to estimate how much students currently spend per book on average (Table 1). Then, we calculated how these figures would change assuming the maximum number of students as indicated by our survey purchase each option. Finally, we expressed the savings as the average amount students would spend per year, compared to the current $900 average.

Renting could reduce textbook costs by 33% overall.

According to our survey, renting would be popular among students (Figure 4), and the savings are high. However, since most students would only rent a portion of their textbooks, the overall impact is not as substantial.

- The average rental cost was 39% of the price of a new print textbook (61% savings), 50% of the average amount spent per book (50% savings).
- According to the survey, students would purchase approximately 67% of their textbooks as rentals on average if given the option (Figure 4).[14]
- Rentals could reduce the average amount students spend on textbooks per year by 33%[15] to $602.

TABLE 1

How Students Buy Textbooks		
Option	**Proportion**	**Avg. Cost**
Print, New	39.8%	$175.48
Print, Used	48.1%	$131.61
Print, Rental	1.8%	$67.86
E-Textbook	0.9%	$83.53
E-Reader	- -	$107.59
Nothing	9.5%	$0.00
Average spent per book:		**$135.02**

E-textbooks could reduce textbook costs by 8% overall.

Unsurprisingly, students' general preference for print textbooks limits the potential impact of e-books. However, e-books do offer a decent discount for those who prefer the digital format, and the overall savings are not insignificant.

- The average cost of an e-textbook was 48% of the price of a new print textbook (52% savings), and 62% of the average amount spent per book (38% savings).
- 21% of the students surveyed prefer e-textbooks (Figure 2).
- E-textbooks could reduce the average amount spent per year by 8% to $830, according to our estimate.

E-readers could reduce textbook costs by 1% overall.

Like e-books, e-readers do not interest enough students to produce dramatic overall savings. In addition, e-readers face the additional challenge of convincing students to make a substantial upfront investment in an e-reading device.

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[14] Assuming "all" means the student rents 100% of their books, "most" means 75%, "half" means 50%, "a few" means 25%, and "none" means 0%.

[15] This figure is likely inflated, since our calculations assume that every textbook is available for rent. In actuality, many textbooks cannot be rented due to frequent revisions, single use formats and consumable supplements.

- The average e-reader textbook cost[16] was 61% of the cost of a new print textbook (39% savings), and 80% of the average amount spent per book (20% savings).
- 4% of the students surveyed prefer e-readers (Figure 2).
- E-readers could reduce the average amount spent per year by 1.4% to $888, according to our estimate.

Even combined, rentals, e-books and e-readers cannot be a comprehensive solution.

While all three cost-reducing options offer savings to some students, they fail to encompass the entire market. Even if students could purchase all of their books as rentals, e-books or e-readers, our data suggests that some would still continue to buy new and used print textbooks.

- Rentals, e-books and e-readers combined could reduce the average amount spent per year by 34% to $598.

The combined savings are not much higher than rentals alone because there is overlap between students who would rent and those who would buy e-books and e-readers. Since both digital options cost more than print rentals, the higher price offsets most of the savings by non-renting students.

TABLE 2

Summary of Combined Savings		
Option	**Proportion**	**Avg. Cost**
Print, New	10.1%	$175.48
Print, Used	12.2%	$131.61
Print, Rental	50.3%	$67.86
E-Textbook	21.0%	$83.42
E-Reader	4.0%	$107.59
Nothing	2.4%	$0.00
Average spent per book:		**$85.42**
Average savings:		**34%**

Therefore, the traditional market does not offer a long-term solution to the high cost of textbooks, since the main cost-saving options – rentals, e-books and e-readers – do not meet the needs of all students.

Finding 3: Open textbooks can dramatically reduce costs for all students and have the potential for long-term sustainability.

Open textbooks have tremendous potential as a solution to high textbook costs, because they offer a wide range of affordable print and digital formats that meet the needs of all students. Print copies come in black and white and color, softcover and hardcover, and students can self-print part or all of the text. Digital copies are typically free, and can be accessed online or offline from a variety of devices including e-readers, laptops and smart phones.

We developed a model to estimate the potential market-wide savings of these options. We collected price information for open textbooks from the 10 college subjects we analyzed for traditional textbook prices. Then, we used statistics from our student survey to estimate the proportion of students that would purchase each open textbook format (Table 3). From there, we calculated the average savings based on what students currently spend (Table 1).

TABLE 3

How Students Would Buy Open Textbooks		
Option	**Proportion**	**Average Cost**
Print, Color	9.3%	$63.95
Print, B&W	50.7%	$35.70
Digital + Printing	20.9%	$17.37
Digital Only	19.1%	$0.00
Average spent per book:		**$27.68**

[16] Includes the pro-rated average cost of an e-reading device, assuming 8 semesters at 4 classes each ($14.50).

Open textbooks could reduce costs by 80% overall.

According to the survey and our previous research, many students would be willing to purchase optional hard copies and enhanced features, even though open textbooks are also free online.

- 60% of the students we surveyed in 2008 would purchase an affordable ($20-40) print copy rather than use a free digital book.
- Of the students who preferred print textbooks, 71% said they would prefer a less expensive, black and white print copy, and 29% would prefer a more expensive, full color copy.
- Of the students who preferred digital textbooks in our 2009 survey, 71% would prefer to have the option to print out sections, and 33% would pay extra to have that option.

From these statistics and the average price of each open textbook format (Table 2), we calculated how much students would save by using open textbooks.

- Open textbooks could reduce the average amount spent per year by 80% to $184.

Open textbooks can reduce costs substantially while accommodating the format and purchasing preferences of all students, which makes them a clear solution to the high cost of textbooks. However, the success of open textbooks is dependent on whether publishing models can develop to produce and maintain high quality texts.

Sustainable open textbook models are possible.

Results from the student survey demonstrate that sustainable open textbook models could be possible in the long term. The findings above show that students are willing to purchase alternate formats even in the presence of a free online option. Additional findings from the survey further suggest that students will pay for services they value.

- More than three-quarters (76%) of the students we surveyed would be supportive of paying a small fee each semester that would subsidize authors to write open textbooks.

While a student fee is not necessarily a feasible source of funding, the sentiment underscores the fact that students are an active consumer group that seeks meaningful change. Student spending could serve as a foundation for author income and new publisher business models.

The cumulative savings of open textbooks add up.

The examples below illustrate the potential savings of using open textbooks rather than traditional texts.

Physics
185 Student Class



$24,575
4 Years of Tuition At Iowa State

Calculus
150 Student Class



$20,115
Down Payment On First House

Economics
90 Student Class



$10,114
$75,000 401(k) after 40 years

Algebra
50 Student Class



$5,462
1 Year Of Car Payments

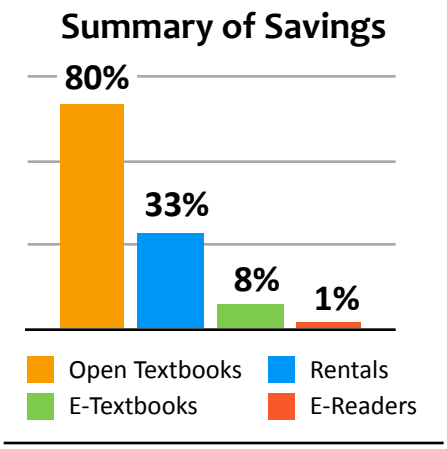
CONCLUSION

Overall, this study demonstrates that the solution to textbook affordability must both reduce costs and address the wide variance in student preferences by offering a range of affordable choices.

We found that cost-reducing options for traditional textbooks – rentals, e-books and e-readers – do not satisfy the preferences of all students. Even combined, these options only extend savings to a portion of the market, condemning the rest to the status quo of expensive new and used books. While these cost-saving options will remain important in the short term, their potential impact is too limited to be a solution for the future.

On the other hand, we found that open textbooks are a far-reaching solution for the long term. As an alternative model, they can reduce overall costs by an unprecedented 80% while also offering a variety of print and digital formats that accommodates the full spectrum of students.

FIGURE 5



In addition to their upfront potential to reduce costs, open textbooks can help reduce costs in the long run. Unlike traditional textbooks, open textbooks are free online, which makes purchasing print copies and other formats optional. This market structure incentivizes publishers to earn students' business by a wider range of products at fair prices. In this way, open textbooks bypass the market failure responsible for high costs, which safeguards against future exploitation of students. In contrast, options like rentals, e-books and e-readers offer no such protections, and would allow prices to continue rising at their current rates. Open textbooks not only make textbooks affordable, but also they make sure they stay that way.

"Open textbooks will not only make textbooks affordable, but they will make sure they stay that way"

The primary challenge is developing models that can create and sustain high-quality open textbooks. While the current supply is expanding quickly, open textbooks are only available for a fraction of courses and it remains to be seen whether sustainable models are possible. According to our research, students are willing to purchase products they value, even in the presence of a lower-cost or free alternative. The sale of print copies, supplements and enhancements therefore could serve as a foundation for new publisher business models. The momentum behind leading commercial open textbook publisher Flat World Knowledge has already proven such models can be successful.

We therefore conclude that the next step toward making textbooks affordable is to promote the creation and adoption of more open textbooks. Now that the federal price disclosure law from the Higher Education Opportunity Act has made cost integral to the textbook marketing and selection process, promoting open textbooks can create pressure for publishers to lower their prices.

RECOMMENDATIONS

1. Publishers should transition to models that are more efficient

Major publishers need to develop new models that can create high quality textbooks without imposing excessive costs on students. While we appreciate that publishers have begun to explore more cost effective options like rentals, e-books and e-readers, our study shows that the potential savings will not encompass the entire market. Publishers should transition to models that are more efficient and that can cater to the needs of all students, such as open textbooks.

Some publishers have already begun to pioneer such business models. Leading the way is Flat World Knowledge, Founded in 2007 by publishing industry veterans, Flat World has published more than 20 open textbooks used by 1,300 educators on 800 college and university campuses nationwide.[17] Like all open textbooks, Flat World Knowledge's books are free for students to read online. The company generates revenue on the sale of optional items: softcover print books in black and white and full color, PDF downloads, audiobooks, e-reader versions, and study aids, including audio study guides, interactive quizzes and digital flashcards. This study suggests that students are likely to purchase these items if sold at affordable prices, and Flat World Knowledge's experience thus far further supports this theory; over 50 percent of students end up buying at least one product.

Flat World's open textbook model and online technology platform has several advantages over traditional publishing. First, using print on demand technology and digital delivery make the supply chain substantially more cost effective. Second, sales revenue remains constant from year to year, rather than dwindling over the life of an edition due to used books. Steady income not only makes the company more efficient, but it has also helped them attract top-notch authors who are frustrated with fluctuating royalties from the traditional model. Also, Flat World pays a higher royalty rate – about 20%, whereas traditional publishers typically pay 12-15%. Finally, Flat World's online technology platform and customization tools make it easy for faculty to modify their textbooks to suit their course. This feature, coupled with their low prices, has attracted numerous faculty.

AN AUTHOR'S PERSPECTIVE



"Royalties on my Flat World book are tracking my other [traditionally published] books, so it looks like that payback will be faster and greater. Personally, it also feels good to be able offer students a high quality learning experience, and choices about how much they pay. "

Dr. Mason Carpenter *has authored textbooks both with Pearson, a traditional publisher, and Flat World Knowledge, an open textbook publisher.*

Flat World's success is promising; however, it remains to be seen whether the company can continue its trajectory on a larger scale. Nevertheless, the benefits of this model for students, publishers and authors alike are unmistakable. Major publishers should take a lesson from Flat World's success and consider transitioning to open textbooks.

[17] "150,000 College Students to Save $12 Million Using Flat World Knowledge Open Textbooks for 2010/2011 Academic Year." Flat World Knowledge. August 23, 2010.

2. Faculty should consider adopting open textbooks

Faculty are in a unique position to advance textbook affordability, since their adoption decisions determine not only how much students will spend, but also how much publishers will sell. We strongly encourage faculty to seek, consider and adopt open textbooks and other low-cost options whenever possible. Although faculty will ultimately select the textbook that is most appropriate for their students, considering open textbooks can exert significant competitive pressure on publishers – especially now that federal regulations require price disclosure.

A PROFESSOR'S PERSPECTIVE



"Over the years I've noticed many of my students forgoing their texts due to financial hardship, particularly since the economic downturn."

Dr. D. Steven White *saved his students more than $11,000 by switching to open textbooks.*

Our experience in the field has been that professors are deeply concerned about high textbook costs. More than 2,500 faculty members from 750 U.S. colleges have signed the Open Textbooks Statement, which expresses their intent to consider using high quality open textbooks whenever appropriate.[18]

3. Colleges and government should support the creation of open textbooks

Colleges can help create open textbooks by funding and organizing open textbook authors and by promoting awareness of open textbooks among their faculties. On the campus level, they can provide compensation for faculty members who write or customize open textbooks and organize workshops and trainings. On the national level, colleges can pool resources with other institutions for open textbook development and quality assurance. A number of institutions have already launched exemplary initiatives:

- More than 200 colleges have joined the Community College Consortium for Open Educational Resources,[19] which is a collaborative effort to create, review and promote open textbooks for use by community college students and faculty. A related initiative, College Open Textbooks, has trained more than 100 faculty advocates for open textbooks over the past year.
- The University of Illinois recently obtained a grant from the U.S. Department of Education to develop an open textbook for use in Illinois and at colleges across the country.
- The University System of Ohio launched a program in 2008 designed to incentivize and reward faculty who develop innovative, low-cost course materials. This year's recipients of the Faculty Innovator Award include Carl Stitz and Jeff Zeager, authors of an Algebra open textbook.
- The Foothill-DeAnza Community College District adopted a policy

Government can help by investing funds and programmatic support to create more open textbooks. While the textbooks market should not depend on government funding in the long term, it could provide much-needed capital to fuel innovation in the short term. After the momentous reforms to the student aid system over the last four years, culminating in the passage of the Health Care and Education Affordability Reconciliation Act in March 2010, tackling the cost of textbooks is an important next step in comprehensive state and federal efforts to rein in the cost of higher education.

[18] See www.studentpirgs.org/open-textbooks/faculty-statement.
[19] See www.oerconsortium.org and www.collegeopentextbooks.org.

- Senator Dick Durbin (D-IL) introduced the Open College Textbook Act (S. 1714) in September 2009, which would establish a federally funded competitive grant program to create high-quality, introductory-level open textbooks for popular college courses.
- The State of Washington and the Bill and Melinda Gates Foundation jointly funded the Open Course Library: a project to develop open course materials, including open textbooks, for the 81 highest enrolled courses in Washington State's 34 community and technical colleges.
- In 2009, the U.S. Department of Education announced the American Graduation Initiative, which would have devoted $500 million to the creation of online, openly licensed community college courses and course materials for use at 2-year and 4-year schools across the country.

4. Students should take action

Students can play a role in supporting open textbooks by getting the word out to their professors, campuses and communities.[20] In the fall of 2009, the Student PIRGs launched a nationwide effort to promote faculty adoption of open textbooks. More than 100 student volunteers participated in a Day of Action that educated more than 2,000 professors in a single day. Throughout 2010, Student PIRG volunteers have met with hundreds of faculty to provide information about open textbooks available in their courses. At least 30 of the professors contacted by these efforts have already made the switch to open textbooks, saving students thousands of dollars on average. The Student PIRGs will continue this campaign throughout the 2010-2011 school year, coupled with efforts to promote awareness of the Higher Education Opportunity Act price disclosure provision.

[20] For more information on how to take action on campus and join the Student PIRGs' Make Textbooks Affordable campaign, see www.studentpirgs.org/take-action.

Methodology

Student Survey

The first half of the study consisted of a survey conducted during March 2010. More than 50 Student PIRG staff and student volunteers conducted an anonymous, multiple choice survey of 1,428 students from 10 colleges in 7 states. From the start, we recognized that selecting a truly random sample to represent the 19 million US college students would be difficult, if not impossible. Therefore, we chose a methodology that would emphasize collecting a large number of opportunistic responses that would provide a general snapshot of student opinions.

Student Surveys Collected

College	Surveys
Lane Community College	53
Southern Oregon Univ.	50
UC San Diego	87
UC Santa Barbara	160
Univ. of Colorado Boulder	108
Univ. of Connecticut	448
Univ. of Mass. Boston	95
Univ. of Oregon	152
Univ. of Washington	117
Univ. of Wisconsin Madison	158

Collection

The majority of the surveys were collected by PIRG volunteers with clipboards in busy areas on campus. Volunteers would approach students as they passed and ask them to stop to take the survey. Students would then fill out a survey form and turn it in. A small number of surveys were collected in classes and student group meetings. All volunteers were asked to use a standard script when asking students to take the survey to avoid unintentionally biasing responses. Once the surveys were collected, PIRG volunteers entered the results into spreadsheets, which were later aggregated by national staff.

Calculations

All of the statistics from the student survey are calculated from the number of students who selected a specific answer to a question divided by the total number of students who answered the question. For statistics that involve data from two questions, we divided by the number of students who answered both questions.

Textbook Price Survey

The second half of the study consisted of a price analysis of the textbook formats discussed in the report. We selected our sample by first identifying ten common college subjects with at least one open textbook option available. We then collected the price information for the open textbooks [color print, b&w print, printable PDF (if applicable), and number of pages (to calculate printing costs)]. Then, for each of the ten courses, we chose ten popular traditional textbooks, a total of 100 books. We identified the texts by searching for the subject on Amazon.com and taking the first ten results that appeared when sorted by "bestselling."[21] After considering several methodologies, we selected one that would focus on best-selling textbooks, because it would best represent the experience of the average student. While we cannot claim that Amazon.com is the authority on which textbooks are best-selling, the size and scope of its sales make it a strong enough indicator.

[21] The search was performed at http://www.amazon.com on July 30-31, 2010.

Data Collected

- List price[22] (sources: amazon.com, barnesandnoble.com)
- Rental price, including shipping (sources: chegg.com, bookrenter.com, ecampus.com)
- E-textbook price (sources: coursesmart.com, barnesandnoble.com, textbooks.com)
- E-reader price (sources: amazon.com, entourageedge.com)

Traditional Textbook Prices					
Textbook	**New**	**Used**	**Rental**	**E-Book**	**E-Reader**
Principles of Economics	$ 206.12	$ 154.59	$ 73.42	$ 101.59	$ 116.25
Financial Accounting	$ 206.38	$ 154.79	$ 78.81	$ 101.30	$ 120.51
Business Communication	$ 156.20	$ 117.15	$ 59.56	$ 71.81	$ 93.08
Principles of Marketing	$ 150.05	$ 112.54	$ 62.71	$ 75.95	$ 91.00
Information Systems	$ 155.57	$ 116.67	$ 67.33	$ 77.58	$ 109.08
Linear Algebra	$ 159.02	$ 119.27	$ 58.31	$ 47.94	$ 102.80
Statistics	$ 151.37	$ 113.52	$ 62.23	$ 74.81	$ 114.73
Calculus	$ 209.45	$ 157.09	$ 74.92	$ 110.08	$ 119.32
College Algebra	$ 162.47	$ 121.85	$ 63.84	$ 82.78	$ 100.54
Physics	$ 198.17	$ 148.63	$ 77.47	$ 91.45	$ 108.60
Average	**$ 175.48**	**$ 131.61**	**$ 67.86**	**$ 83.53**	**$ 107.59**
Savings off new price		**25.00%**	**61.33%**	**52.40%**	**38.69%**

Open Textbook Prices				
Textbook	**Color Print**	**B&W Print**	**Digital/Print**	**Digital Only**
Principles of Economics	$ 79.95	$ 49.95	$ 32.99	$ 0.00
Financial Accounting	$ 59.95	$ 29.95	$ 28.93	$ 0.00
Business Communication	$ 59.95	$ 29.95	$ 28.58	$ 0.00
Principles of Marketing	$ 59.95	$ 29.95	$ 27.96	$ 0.00
Information Systems	$ 59.95	$ 29.95	$ 27.87	$ 0.00
Linear Algebra		$ 34.85	$ 6.46	$ 0.00
Statistics		$ 35.41	$ 5.64	$ 0.00
Calculus		$ 51.60	$ 4.21	$ 0.00
College Algebra		$ 28.97	$ 5.47	$ 0.00
Physics		$ 36.43	$ 5.56	$ 0.00
Average	**$ 63.95**	**$ 35.70**	**$ 17.37**	**$ 0.00**

Calculations

New Price: Mean of list prices. Campus bookstores typically sell new books at list price.

Used Price: 75% of the mean of list prices. Campus bookstores typically sell used books at 75% of list price.

Rental Price: Mean of all rental prices.

E-book Price: Mean of 67% of all "rental" e-book prices plus mean of 33% of all "permanent" e-book prices (if available). E-books are available in two forms: subscriptions, the equivalent of "rentals," and permanent

[22] The list price is typically what campus bookstores charge for "new" textbooks. We used 75% of the list price as the "used" price, which is the industry's standard markdown. See GAO 2005, page 17

licenses. We weighted the mean based on our survey finding that students would rent 67% of their books on average.

E-reader Price: Mean of all e-reader textbook prices plus $14.50, the pro-rated cost of an e-reader. We decided to include the pro-rated cost of an e-reader, since purchasing a device is requisite of purchasing an e-reader book. The average cost of the two e-readers for which we collected textbook price data, Amazon's Kindle and enTourage's eDGe, was $464, and we pro-rated assuming a student would use the e-reader for 8 semesters at 4 classes each.

Printing Price: Mean of page numbers times 10% times 9 cents per page plus cost of printable file (if applicable). We assumed that students would print 10% of the text on average, and that printing would cost 9 cents per page on average. Half of the open textbooks we studied allowed student to download a printable PDF at no cost, and the other half charged $24.95.

Student Spending Estimates

We used data from a fall 2009 survey[23] and findings from the student survey conducted for this study to predict the proportion of students who would take advantage of each option (rentals, e-books, e-readers and each open textbook format) if given the choice. From the proportions and average book price data, we calculated the average spending per student by multiplying the proportion for each option by the average price for that option.

Proportion of Students Buying Each Option

Option Bought	Original	Rentals	E-Books	E-Readers	Combined
New	39.8%	13.3%	31.7%	38.2%	10.1%
Used	48.1%	16.1%	38.3%	46.1%	12.2%
Rental	1.8%	67.1%	1.4%	1.7%	50.3%
E-Book	0.9%	0.3%	21.0%	0.9%	21.0%
E-reader	n/a	n/a	n/a	4.0%	4.0%
Nothing	9.5%	3.2%	7.6%	9.1%	2.4%

Option Bought	Open
Print, Color	9.3%
Print, B&W	50.7%
Digital/Print	20.9%
Digital Only	19.1%

Overall Student Spending For Each Option

Textbook	Current	Rentals	E-Books	E-Readers	Combined	Open
Principles of Economics	$ 158.51	$ 101.15	$ 146.96	$ 153.27	$ 102.51	$ 47.09
Financial Accounting	$ 158.81	$ 104.88	$ 147.14	$ 154.12	$ 105.39	$ 32.38
Business Communication	$ 120.15	$ 79.30	$ 110.34	$ 117.04	$ 78.83	$ 32.31
Principles of Marketing	$ 115.58	$ 79.94	$ 107.54	$ 112.82	$ 79.99	$ 32.18
Information Systems	$ 119.86	$ 84.45	$ 111.28	$ 119.03	$ 84.41	$ 32.16
Linear Algebra	$ 122.06	$ 79.09	$ 107.02	$ 120.04	$ 74.25	$ 19.02
Statistics	$ 116.56	$ 79.93	$ 108.09	$ 116.98	$ 80.66	$ 19.13
Calculus	$ 161.14	$ 103.01	$ 150.78	$ 155.96	$ 105.76	$ 27.04
College Algebra	$ 125.08	$ 83.79	$ 116.50	$ 122.32	$ 84.71	$ 15.83
Physics	$ 152.47	$ 101.91	$ 140.09	$ 147.00	$ 100.61	$ 19.63
Average	**$ 135.02**	**$ 90.36**	**$ 124.57**	**$ 133.15**	**$ 89.71**	**$ 27.68**
Savings off current spending		**33.08%**	**7.74%**	**1.39%**	**33.56%**	**79.50%**
Average amount spent per year		**$602.31**	**$830.36**	**$887.53**	**$597.99**	**$184.48**

[23] Student PIRGs, 2009

Calculations for Student Proportions

Rentals: Our survey asked students to rate how many books they would rent if they had the option. 34% said "all," 30% said "most," 16% said "half," 14% said "a few" and 7% said none. To estimate how many books the average student would rent, we assumed "all" meant 100%, "most" 75%, "half" 50%, "a few" 25% and "none" 0%, and multiplied each by the corresponding percentage of survey respondents to get the result of 67%. To calculate the student proportions, we set the "rental" category at 67%, and distributed the remaining 33% of students among the other categories proportionally to their original values.

E-books: 21% of the students surveyed chose e-textbooks as their preferred textbook format. For the purposes of this study, we assumed that students' purchasing habits would correspond to their format preferences, and therefore 21% of students would purchase e-textbooks. To calculate the student proportions, we set the "e-book" category at 21%, and distributed the remaining 79% among the other categories proportionally to their original values.

E-readers: 4% of the students surveyed chose e-textbooks as their preferred textbook format. For the purposes of this study, we assumed that students' purchasing habits would correspond to their format preferences, and therefore 4% of students would purchase e-textbooks. To calculate the student proportions, we set the "e-reader" category to 4%, and distributed the remaining 96% among the other categories proportionally to their original values.

Combined: We combined the savings from rentals, e-books and e-readers to estimate how much students could save if they had the choice of all three. The figure for e-books already takes into account the percentage of students who would rent, and e-readers are not available for rent, so we took the proportions for those two options as-is. Then we took the remaining 75%, set the rental category at 67% of that amount, and then distributed the remainder among the other categories proportionally to their original values.

Open textbooks: We used three pieces of data to calculate these proportions (Table 3): 60% of student would purchase a low cost print copy rather than use a free digital one; 71% of the students who prefer print would purchase a black and white copy, and 29% a full color copy; and of the students who prefer digital textbooks, 71% would prefer to have the option to print, and 33% would pay extra for it. First, we took the 60% of students who would purchase a print copy and split them between color and black and white: 18.6% of all students prefer color, 41.6% B&W. Since only 50% of the students would have the option to purchase a color book (only half of the open textbooks had both options), we cut the color percentage in half and set the "Print, Color" category to 9.3% and "Print, B&W" to 50.7%. Then, we took the 40% of students who would use a free digital copy and split them between printing and not printing. Half of the open textbooks require students to pay extra for the option to print, so we split half of the students into 33% for printing (5.3% overall) and 67% for digital only (14.7% overall). For the other half of the open textbooks that allow free printing, we split the second half of the students into 71% for printing (15.6% overall) and 29% for digital only (4.4% overall). Adding the two halves together, we set the "Digital/ Print" category to 20.9% and the "Digital Only" category to 19.1%.