Inflection Point:
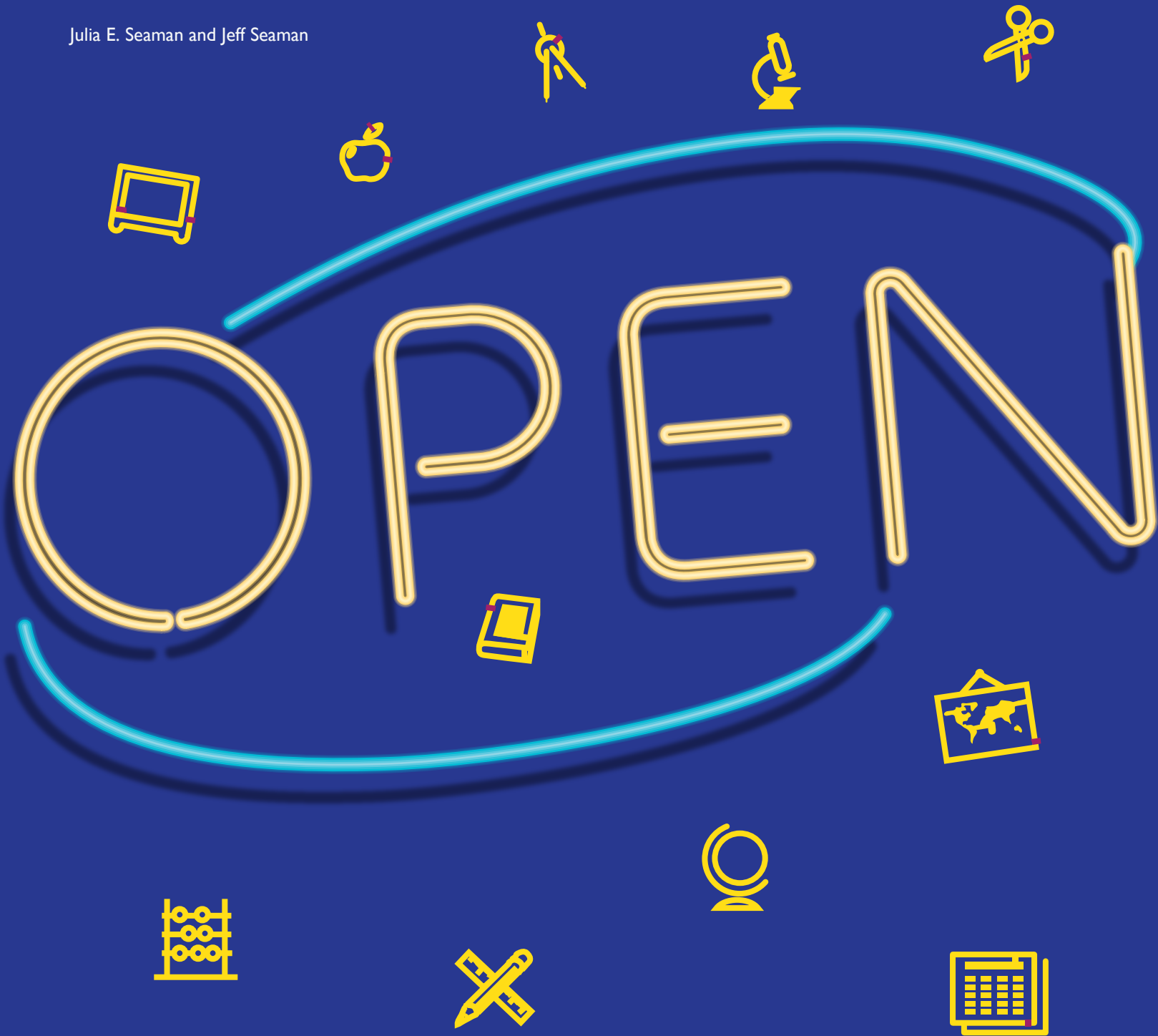
Educational Resources in U.S. Higher Education, 2019

Julia E. Seaman and Jeff Seaman

Bay View Analytics

Inflection Point:

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CONTENTS

ACKNOWLEDGMENTS

EXECUTIVE SUMMARY

The model of course material distribution and selection is at an inflection point. After decades of only minor changes to how faculty discovered and adopted textbooks for their courses, the past five years has been marked by substantial changes:

- There is a growing acceptance (even preference) by faculty for digital materials. More faculty now prefer digital over print, and they report that their students are likewise accepting of digital materials.

- Faculty, chairpersons, administrators, and even entire college systems are increasingly concerned about the cost of materials for their students. This is driven by historically rising prices and the emergence of lower-cost alternatives, resulting in a growing awareness of cost as an issue at multiple levels within the institution.

- An understanding on the part of faculty that many of their students are going without the required text. This is reported as primarily a cost concern, but also because the students are not convinced that they need the materials.

- The introduction of new publishing and distribution models by commercial publishers, the most important being "inclusive access," has substantially altered the options available to faculty.

The rapid evolution of the course materials market has had a significant impact on the future of open textbooks. The past five years have seen many positive signs for the growth of open textbooks:

- Faculty who have adopted Open Educational Resources (OER) rate the quality of OER as equal to that of commercial alternatives.

- Awareness of licensing and OER continues to grow every year.

- Institutional and system-level OER initiatives appear to be effective in increasing OER adoption rates.

There have also been a few negative signs for open textbooks:

- Faculty do not think that they need OER to achieve the flexibility of the 5Rs (Retain, Revise, Remix, Reuse, and Redistribute). The vast majority of faculty are using commercial materials in ways that mirror the 5Rs of OER.

- A growing list of alternative material distribution options adds confusion to the "open" message. Many of the options are being presented in the same light as OER, and highlight many of the same advantages.

- While familiarity with the term OER has now reached a majority, many faculty remain unfamiliar with the licensing or how to use these materials, and current rates of growth will not change this for many years.

DEFINITIONS

This study is one in a series designed to explore the process by which faculty members select and use the educational materials employed in their courses. The most common of these is the required textbook: faculty members typically choose one or more books that all students are required to use throughout the course. Faculty also employ a wide range of other materials — some optional, others required for all students. This study focuses on the required materials, using the following definition:

> *Items listed in the course syllabus as required for all students, either acquired on their own or provided to all students through a materials fee; examples include printed or digital textbooks, other course-complete printed (course pack) or digital materials, or materials such as laboratory supplies.*

In addition to examining the overall resource selection process, this study also explores the particular class of materials classified as Open Educational Resources (OER). The William and Flora Hewlett Foundation defines OER as follows:

> *OER are 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 re-purposing by others. Open educational resources include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge.[1]*

An essential aspect of the examination of the use of educational resources is the licensing status of such materials: who owns the rights to use and distribute the material, and does the faculty member have the right to modify, reuse, or redistribute said content? The legal mechanism that faculty are most familiar with is that of copyright. The U.S. Copyright Office defines copyright as:

> *A form of protection provided by the laws of the United States for "original works of authorship", including literary, dramatic, musical, architectural, cartographic, choreographic, pantomimic, pictorial, graphic, sculptural, and audiovisual creations. "Copyright" literally means the right to copy but has come to mean that body of exclusive rights granted by law to copyright owners for protection of their work. … Copyright covers both published and unpublished works.[2]*

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[1] http://www.hewlett.org/programs/education-program/open-educational-resources.
[2] http://www.copyright.gov/help/faq/definitions.html

Of particular interest for this study is the copyright status of the textual material (including textbooks) that faculty select as required materials for their courses.

> *Copyright owners have the right to control the reproduction of their work, including the right to receive payment for that reproduction. An author may grant or sell those rights to others, including publishers or recording companies.*[3]

Not all material is copyrighted. Some content may be ineligible for copyright, copyrights may have expired, or authors may have dedicated their content to the public domain (e.g., using Creative Commons public domain dedication[4]).

> *Public domain is a designation for content that is not protected by any copyright law or other restriction and may be freely copied, shared, altered and republished by anyone. The designation means, essentially, that the content belongs to the community at large.*[5]

Materials can also be released under a Creative Commons license, which is not an alternative to copyright, but rather a modification of the traditional copyright license that grants some rights to the public.

> *The Creative Commons (CC) open licenses give everyone from individual authors to governments and institutions a simple, standardized way to grant copyright permissions to their creative work. CC licenses allow creators to retain copyright while allowing others to copy, distribute, and make some uses of their work per the terms of the license. CC licenses ensure authors get credit (attribution) for their work, work globally, and last as long as applicable copyright lasts. CC licenses do not affect freedoms (e.g., fair use rights) that the law grants to users of creative works otherwise protected by copyright.*[6]

The most common way to openly license copyrighted education materials — making them OER — is to add a Creative Commons (CC) license to the educational resource. CC licenses are standardized, free-to-use, open copyright licenses.[7]

This study examines a new trend in the provision of course materials: inclusive access. Inclusive access agreements are an emerging distribution model that go by a variety of names, with no single clear definition. OpenStax defines inclusive access as follows:

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[3] http://legal-dictionary.thefreedictionary.com/copyright
[4] https://creativecommons.org/publicdomain/zero/1.0/
[5] http://whatis.techtarget.com/definition/public-domain
[6] Personal communication from Cable Green, Ph.D., Director of Open Education, Creative Commons
[7] State of the Commons report: https://stateof.creativecommons.org

> *Inclusive access programs are an agreement among universities, textbook publishers, and campus bookstores. Students are automatically signed up to get digital course materials, the cost of which gets folded into their tuition and fees when they enroll in a class.[8]*

McGraw Hill, for their part, defines inclusive access as:

> *Inclusive Access is a partnership between an institution, bookstore, and publisher to deliver digital course materials to students, below market rates, on or before the first day of class.[9]*

The common elements across all the variants of inclusive access are:
- Digital distribution
- Lower cost to students
- Day one access
- All students included unless they opt-out

An additional aspect of technology employed in teaching addressed by this study are online homework or courseware systems. Because not all faculty have the same understanding of the term "online homework," the question used to measure awareness and use included the term as well as a listing of the most common brands of such systems:

> *Are you familiar with online homework / courseware systems such as Cengage (Aplia, MindTap, WebAssign), Expert TA, Knewton Alta, Macmillan (Launchpad, Sapling Learning), McGraw (Aleks, Connect, SmartBook), MyOpenMath, Pearson (Mastering Series, MyLab), Top Hat, Wiley WileyPLUS, or XYZ Homework?*

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[8] https://openstax.org/blog/giving-inclusive-access-second-look
[9] https://www.mheducation.com/highered/inclusive-access.html

STUDY RESULTS:

Introduction

After decades of stability in the textbook market, the last five years have seen substantial changes in the selection process for course materials. The evidence suggests that even more change is coming.

Fifty years ago, the selection process for course materials was simple. A faculty member would decide what textbooks — typically provided by an academic textbook publisher — were most important for use in a course, and specify these as "required." The most important criteria for the faculty member was generally how well the text fit their teaching needs for a particular course.

Campus bookstores would stock required and recommended textbooks for each term. In some cases, the bookstore might also have had a buyback process for used books, offered at a reduced price. Most students, for their part, bought a new or a used copy of the required text from the bookstore. Some students might have had a text passed down from a friend, or decided to go without. Other than continued increases in the cost of textbooks, not much changed for decades.

The last five years, however, have seen a multitude of changes:

- Faculty attitudes towards digital materials have changed, and the range of digital options has substantially expanded.

- Many faculty now factor the cost to the student into their selection process. Awareness of the impact of cost on students has risen substantially, reflecting the rising cost of materials and the emergence of lower-cost alternatives.

- Increased faculty resentment towards the marketing strategies of major academic publishers is leading them to consider alternatives.

- Academic publishers are feeling the pressure to address cost concerns and are rapidly changing their marketing strategies, embracing digital materials and new "inclusive access" approaches.

- These changes have altered the locus for decisions; others are increasingly making choices that were previously the prerogative of the faculty.

There is no indication that the pace of these changes is slowing. If anything, the next five years may see the pace of change accelerate.

Digital versus Print

There is a growing acceptance (even preference) by faculty for digital materials. More faculty now prefer digital over print, and they report that their students are likewise accepting of digital.

> ***Faculty Voices:***
>
> *In the interest of accessibility and increasing inclusion in the classroom, I prefer to give all materials to my students digitally and do not require them to buy any books. (Full-time Natural Sciences Faculty)*
>
> *Favoring print materials, especially in humanities and social sciences, is not a knee-jerk backwards-looking attitude, but rather is in keeping with much research on how students learn. In calculating "costs" of learning materials, we absolutely must remember the HIDDEN costs of what students are NOT learning in the un-reflective adoption of digital materials merely because they are "new" and "accessible." Print materials can be affordable and accessible, as in my course, and they are often the BEST CHOICE for giving students the quality education they deserve. (Full-time Arts and Literature Faculty)*
>
> *In principle, I would go completely for low-cost online materials provided that 1) the visual quality was as high as the printed materials, 2) navigation throughout the online book was natural and convenient, 3) students could add notes and call-outs, and 4) students were allowed to print sets of pages within reason. (Full-time Natural Sciences Faculty)*
>
> *Other than when a specific format is required course material should be optional because everyone has a huge "public library" in their pocket (or tablet etc.). We should be teaching how to access and evaluate this material for the discipline being taught. We get too focused on specific tasks in most courses instead of the overall knowledge consumption which would prepare better citizens or employees. (Full-time Natural Sciences Faculty)*
>
> *I believe they prefer online books mainly due to cost. If print editions were the same price some might opt for that. (Full-time Psychology Faculty)*
>
> *Looked at objectively, the costs are usually justified, but there need to be better options for students. Digital is NOT the answer as a default option, especially in our school where students have limited technology resources. (Full-time Humanities Faculty)*

The proportion of faculty preferring digital materials has increased over the past several years. The results from last year (2017-18) marked the first time that the more faculty with a stated preference chose digital materials over print. That said, faculty are evenly divided between those who prefer print, those who prefer digital, and those who are neutral, with about one-third of faculty in each group. While the margin of preference for digital materials over print may be small, this marks a considerable change from five years ago, when only a small minority of faculty reported a preference for digital materials.

Not all faculty are equally likely to see digital materials as superior. Results for the past two years, for example, have shown that faculty who are early in their teaching career have a greater preference for digital, while those who have been teaching the longest have the strongest preference for print. While a preference for digital over print remains a generational issue, faculty at every stage of their career have displayed an increased preference for digital materials over time.

Faculty Voices:

When I provide only digital materials, some students complain that they learn better from print materials. (Full-time Arts and Literature Faculty)

Students just do not learn much from online materials, in my trial and error experience. It is waste of their time and their families' resources to give them online materials, even if it seems inexpensive or simple. (Full-time Economics Faculty)

Cost of textbooks has gotten out of sight and students try to do without them because they cannot afford them. They try e-books because they are cheaper, but they don't do well with them and should have bought the textbook. (Part-time Education Faculty)

There are several other differences apparent among faculty in their digital/print preferences. Faculty teaching a graduate-level course are more likely to prefer digital materials than those teaching at the undergraduate level. Those who teach online or blended courses also show a stronger preference for digital over those who do not teach these types of courses.

FACULTY PREFERENCE FOR DIGITAL MATERIALS 2018-19

Category	Percent
Use OER as required course material	41%
Do not use OER	27%
Graduate course	38%
Undergraduate course	29%
Online Course	37%
Not online course	26%
Blended/Hybrid course	38%
Not Blended/Hybrid course	26%
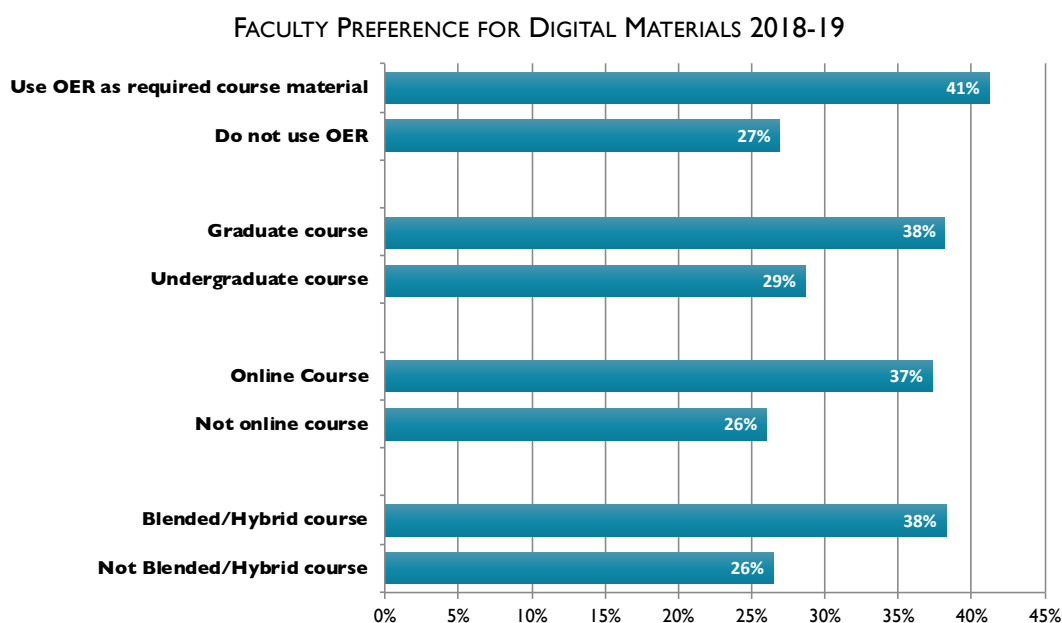
Faculty who have adopted Open Educational Resources as required material are also much more likely to prefer digital over print. As OER materials are more readily available in digital form, this is understandable: faculty with a strong preference for print would not be as likely to have made such an adoption decision.

There are substantial differences in preferences for digital versus print by discipline. Faculty in Education and Computer and Information Science lead, with almost one-half of these faculty expressing a preference for digital materials over print. Faculty in Engineering are not far behind. History and Government faculty are at the other end of the spectrum, with only 15% reporting a preference for digital over print. Linguistics and Language faculty and those in Arts and Sciences have a slightly higher digital preference rate than History and Government faculty, albeit a rate that is less than one-half that of Education faculty.

FACULTY PREFERENCE FOR DIGITAL MATERIALS BY DISCIPLINE 2018-19

Discipline	Percentage
Education	47%
Computer and Information Science	46%
Engineering	41%
Business Administration	37%
Medicine	36%
Mathematics	33%
Natural Sciences	31%
Social Sciences	30%
Humanities	27%
Other	26%
Psychology	24%
Arts and Literature	22%
Linguistics / Language	21%
History / Government	15%
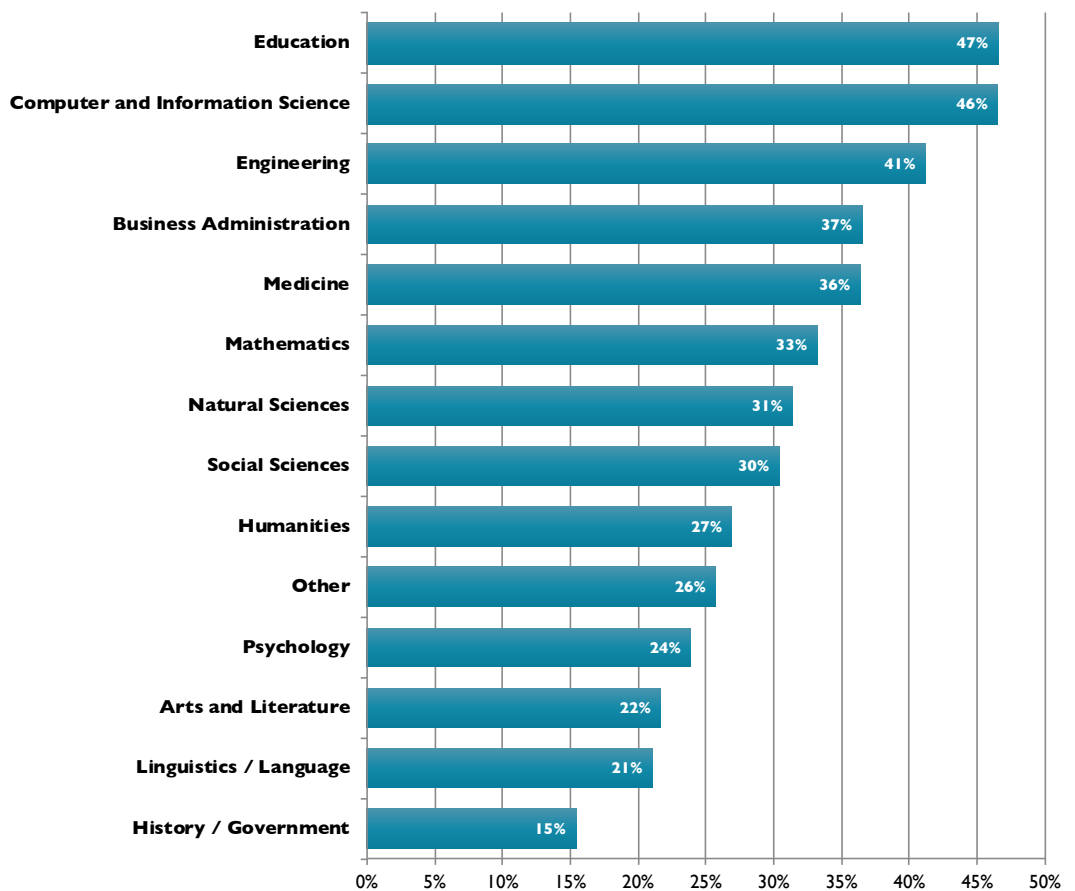
Discipline differences in print versus digital preferences for course materials are rooted in faculty beliefs about how students learn best. When asked if they agreed with the statement that " Students learn better from print materials than they do from digital," the resulting pattern of faculty opinion by discipline is a very close match to their preferences for print:

FACULTY WHO AGREE THAT STUDENTS LEARN BETTER FROM PRINT MATERIALS THAN THEY DO FROM DIGITAL BY DISCIPLINE 2018-19

Discipline	Percent
Education	30%
Engineering	34%
Computer and Information Science	36%
Medicine	38%
Natural Sciences	42%
Social Sciences	44%
Business Administration	44%
Mathematics	47%
Other	47%
Psychology	56%
Linguistics / Language	57%
History / Government	59%
Arts and Literature	59%
Humanities	59%
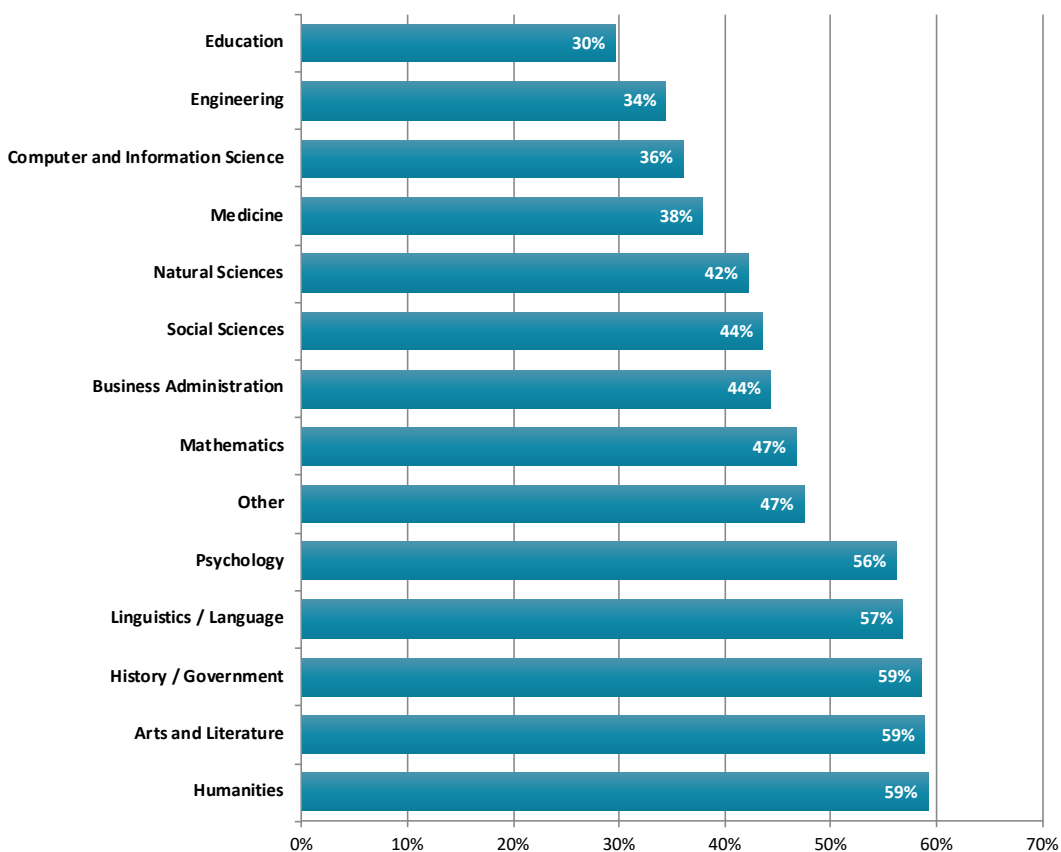
Faculty perceptions of student preferences match those of their own. A bit less than one-third of faculty report that their students prefer print, a similar number say that their students are neutral, and a slightly larger percentage believe that their students prefer digital. The results for 2018-19 show no changes from the results in 2017-18.

Inclusive Access

The combination of the growing faculty and student acceptance of digital materials, coupled with the pressure to reduce costs, has led many publishers to introduce digital-only inclusive access distribution models. These address the two most pressing faculty concerns: the high price of course materials, and a lack of access for many students.

> **Faculty Voices:**
>
> *Inclusive Access provides benefits to students that they otherwise would not have — access without technical issues from the first day, flexible payment, and knowledge of course materials costs before they register. The use of digital homework improves student outcomes. (Full-time Natural Sciences Faculty)*
>
> *I do not like that forcing everyone to buy the online edition through inclusive access prevents students from considering they buy a print version. I don't think reading online promotes learning like reading a print version (but I don't know the data on that either). (Full-time Psychology Faculty)*
>
> *We went to an inclusive access direct billed to a student's UBill after the census date of the semester. (So if a student drops the course in the first two weeks, they are never billed.) (Full-time Natural Sciences Faculty)"*
>
> *I think the unlimited access maybe a solution, however, it will center content likely on a few publishers only (e.g. Pearson and Cengage). (Full-time Psychology Faculty)*
>
> *I could see inclusive access, but it would be nice to have hard copies to check out of the library. (Full-time Natural Sciences Faculty)*
>
> *I've been able to negotiate a substantial decrease in price (60% reduction) due to competition from Cengage's Inclusive Access. (Full-time Psychology Faculty)*
>
> *Digital subscription services and one-time access codes are predatory. Students are misled to think that they are making a purchase that will result in permanent ownership. (Full-time Linguistics / Language Faculty)*

Inclusive access distribution models can be more profitable for the publisher. Moving to all-digital distribution can help offset declining margins, and also guarantee that revenue is collected from virtually all students. The "adopt for all" nature of an inclusive access decision also has the potential for publishers to command a larger market share as the market transitions from print to digital.

While there are advantages for publishers, these models will not be successful unless they also provide a clear benefit for faculty. Inclusive access is designed to directly address three critical faculty concerns: the high cost of materials, the number of students who they believe are not motivated to get course materials, and faculty dislike for current publishing models.

A majority (55%) of faculty report that cost was the primary reason that some of their students did not have access to course materials. Additionally, a sizable portion (37%) believe that students do not think that they need the materials. Inclusive access directly addresses both of these concerns. The cost to the student is lower than the publisher's retail price for a print edition, and the "everyone gets it unless they opt out" approach means that almost all of their students will have access to the course materials.

PRIMARY REASON STUDENTS DO NOT HAVE ACCESS TO TEXTBOOK

- Cost
- Student's don't think they need it
- Availability
- Other

7%
1%
37%
55%
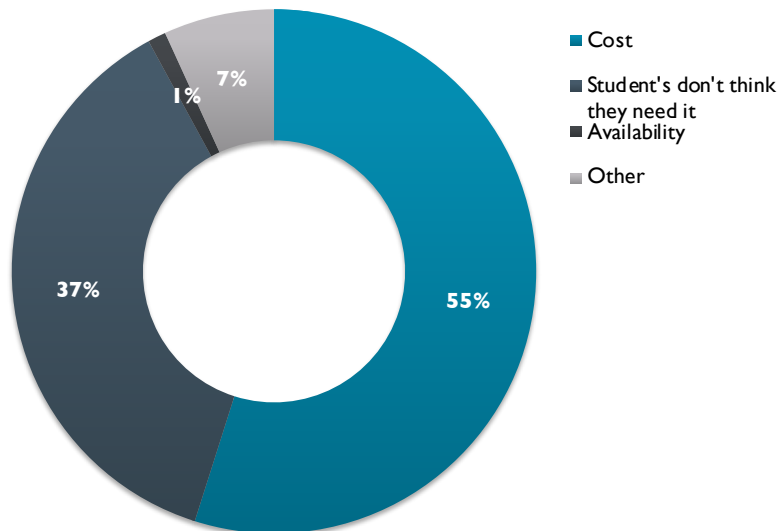
Inclusive access also addresses the resentment that faculty based on years of experience with traditional print publications. Comments in past surveys have repeatedly emphasized faculty distaste for publishing practices, such as too-frequent revisions they see as artificially raising the prices for textbooks by controlling the used book market. Most faculty have little or no experience with inclusive access. They have not formed an opinion, either positive or negative, so inclusive access does harbor this same level of resentment at this time.

> *Faculty Voices:*
>
> *Textbooks are revised frequently (though errors are rarely corrected), and the new edition is usually heavier, more packed with photos that have limited educational value, and more expensive. (Part-time Humanities Faculty)*
>
> *We all know the problem of planned obsolescence in core textbooks. (Part-time Linguistics / Language Faculty)*
>
> *The old model of a new edition of a Chemistry, etc., text every year for $200 is ridiculous — Intro Chemistry does not change from year to year. (Part-time Natural Sciences Faculty)*
>
> *Publishers tend to post new editions every two years. This is necessary in some cases, but in many cases, it seems to be an excuse to drive prices. It puts the student at a disadvantage, as most are forced to buy the new edition, when the older edition would suffice. (Full-time Linguistics / Language Faculty)*
>
> *Publishers need to stop making new editions of textbooks all the time. They are not substantially improving or updating the content, they are simply trying to make more money off of cash strapped students and I'm fed up. (Full-time Natural Sciences Faculty)*
>
> *Publishers know they are required, and take advantage of a captive audience. The fact that ebooks are creeping up in price is even more egregious. (Full-time Natural Sciences Faculty)*
>
> *Constant unnecessary and unproductive updates to editions for the purpose of selling more books limit students' ability to take advantage of much cheaper used editions. (Part-time Business Administration Faculty)*
>
> *Of course, the greed of publishers and text authors, whereby commonly used texts go through 6-9 editions for the sole purpose of killing the used book market exacerbated the problem of book cost. (Full-time Engineering Faculty)*
>
> *Academic publishing has become a racket — with a captive audience. (Full-time Arts and Literature Faculty)*
>
> *The textbook industry is a scam. No need for so many new editions for basic subjects like economics. (Full-time Business Administration Faculty)*
>
> *Constantly producing new editions with minimal changes to book content reduces secondary market availability and is bad practice. (Full-time Arts and Literature Faculty)*

While most faculty have not yet used inclusive access programs, they do understand the basic premise and have thoughts about what it would take for them to be successful in their application. A majority of faculty (59%) say that the cost for the student is "Critical" with another 33% reporting cost to be "Very Important." Two aspects of flexibility are also highly rated: "flexibility to configure the materials" and "ability to easily integrate other materials." A quarter (26%) of faculty believe that the option to purchase print versions of the materials is critical, while only 22% believe that having access after the end of the course is critical.

FACULTY RATINGS OF IMPORTANCE OF INCLUSIVE ACCESS FACTORS 2018-19
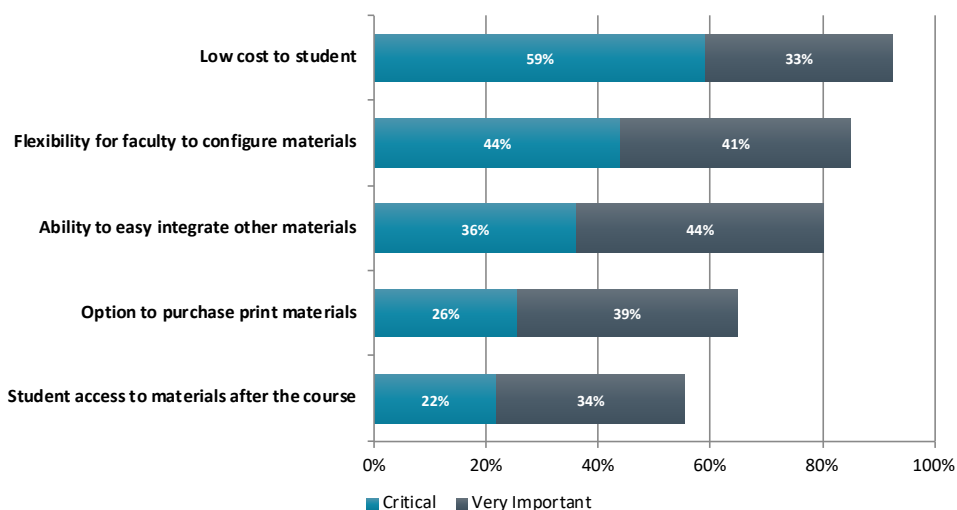
Faculty Voices:

I am very happy with all-inclusive access. (Full-time Business Administration Faculty)

I think Inclusive Access hides the true cost of materials from students. (Part-time Arts and Literature Faculty)

I think that the all-inclusive options offered by publishers are not practical for most students because they are publisher-specific. If students could count on all professors using the same publisher, this resource would be more beneficial. Instead, they can choose to buy all-inclusive from 2-3 publishers and end up with tons of content they will never access and eventually lose access to after class ends. (Part-time Humanities Faculty)"

I have not been able to find suitable OER Engineering materials. I have been switching to suitable inclusive access to try and reduce cost to students. If I could find OER materials I would use them. (Full-time Engineering Faculty)

I used to use Open Source textbooks for this course but the University opted for Inclusive Access so now I have to use it. (Full-time Natural Sciences Faculty)

Inclusive access has dropped the price of the text and supporting materials. (Full-time Business Administration Faculty)

All publishers, commercial and OER, target the courses with the largest numbers of students. These are typically the introductory-level courses in the core disciplines. Faculty teaching these introductory courses have a somewhat greater concern for the cost element of inclusive access, but have an overall pattern of responses that closely matches that of the overall faculty population. They are slightly more likely to rate access to print materials higher, but have somewhat lower levels of concern with the other factors.

FACULTY RATING INCLUSIVE ACCESS FACTORS AS CRITICAL 2018-19
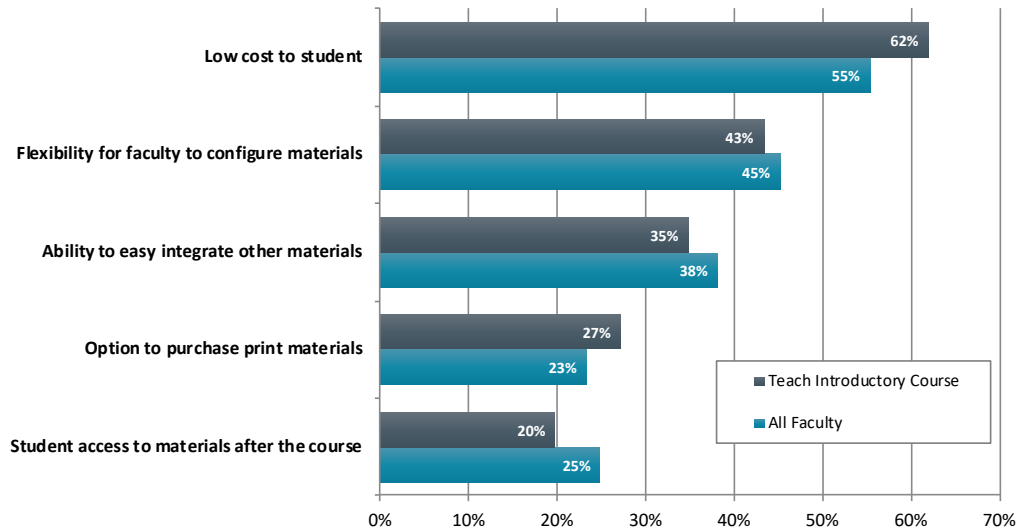
Cost to the Student

Faculty, chairpersons, administrators, and even entire college systems are increasingly concerned about the cost of materials for their students. This concern is driven by higher prices and the introduction of lower-cost alternatives, resulting in a growing awareness of cost as an issue at multiple levels within the institution.

A previous report in this series found that nearly 90% of all faculty stated that the cost of teaching materials to the student was either "Important" or "Very Important" to their selection process. This finding held up across faculty at all levels, ages, and types of institutions.

Faculty Voices:

Textbook prices are obscene. The dumbing down of textbooks and clip art illustrations undermine college education. (Full-time Social Sciences Faculty)

Textbooks are outrageously expensive, mostly encyclopedic, and filled with a lot of superfluous information that daunts most students. (Full-time Natural Sciences Faculty)

Each year, students are noticeably less willing to spend money on educational materials, especially when adjusted for inflation. This seems ironic given the outrageous cost of tuition. Or perhaps this is part of the reason. (Full-time Natural Sciences Faculty)

Some students may be sharing textbooks or work in study groups. (Full-time Social Sciences Faculty)

Cost isn't the issue; the problem is administrators and parents don't think reading matters. (Full-time History / Government Faculty)

Yes, books are expensive, but they cost less that some designer hoodies, shoes and cellphones. They also cost less than spring break in Hawaii. It is a matter of priority. (Part-time Business Administration Faculty)

In the social sciences, I do not think that the cost of required course materials is a pressing issue. The books I assign are available for rent from the university and online through a variety of companies. (Full-time Social Sciences Faculty)

I strongly believe that course material costs are a burden for students, and are harming every part of the work of American higher education. (Full-time History / Government Faculty)

Proprietary textbooks have risen faster than any other item on the Consumer Price Index, 3 - 4 times the rate of inflation. It's insane. (Part-time Arts and Literature Faculty)

Cost is consistently reported as a major hurdle for student access to materials across faculty types. A majority of all faculty members "Agree" or "Strongly Agree" with the statement that "the cost of course materials is a serious problem for my students." Over one-third of all teaching faculty "Strongly Agree" with this statement; those teaching introductory level courses show even stronger levels of agreement (43%). Over 80% of both groups of faculty agree that the cost of course materials is a serious problem.

THE COST OF COURSE MATERIALS IS A SERIOUS PROBLEM FOR MY STUDENTS
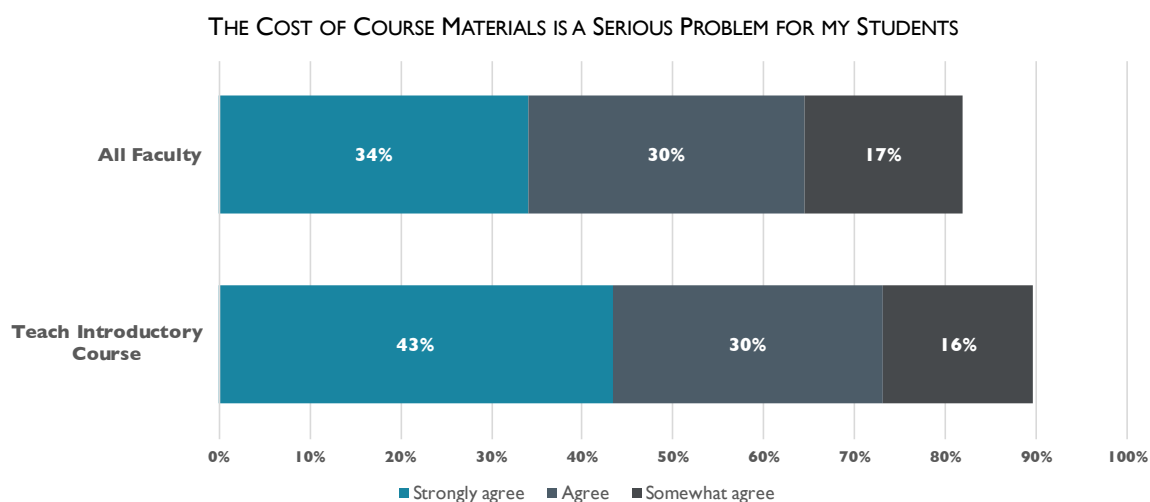
Faculty Voices:

I'm pre-tenure at a public R1 institution. I worry about the costs I'm asking students to pay — but the labor of compiling equally good, up to date materials is huge AND utterly unsupported or rewarded for tenure. I'd like to work out better methods but fear losing my tenure case if I invest too much time in anything my colleagues might dismiss as 'not real research' and/or 'too focused on pedagogy.' (Full-time Arts and Literature Faculty)

Cost of textbooks is a huge driver for students, even those who can afford them. I see very few students with conventional hard copies of the textbooks anymore. Most of them download illegal copies online for free and use the cost of the legal versions as the rationale. (Full-time Natural Sciences Faculty)

There are always a few students that cannot afford access to testing websites, or they have problems logging in. I hate it when access limits student success. (Part-time Natural Sciences Faculty)

$250 to $300 for a first-year physics textbook is too much. F=ma in all textbooks. (Full-time Natural Sciences Faculty)

For a majors course, spread over two semesters, the cost of texts is not excessive when you realize how much content they contain. (Full-time Natural Sciences Faculty)

The cost of new textbooks is ridiculous. (Full-time Arts and Literature Faculty)

Text books are ridiculously expensive. I encourage students to buy used copies of older editions when possible. (Full-time Mathematics Faculty)

After years of steady increases, textbooks prices have recently begun to decline.[10] However, despite declining prices , the introduction of alternative distribution models, and the growing adoption of OER, the level of concern over the cost of course materials has not abated. Results from 2018-19 show that the level of concern is higher than it was in 2017-18.

THE COST OF COURSE MATERIALS IS A SERIOUS PROBLEM FOR MY STUDENTS 2017-18 TO 2018-19

		Strongly agree	Agree	Somewhat agree
All Faculty	2018-19	34%	30%	17%
	2017-18	32%	29%	19%
Teach Introductory Course	2018-19	43%	30%	16%
	2017-18	42%	29%	16%
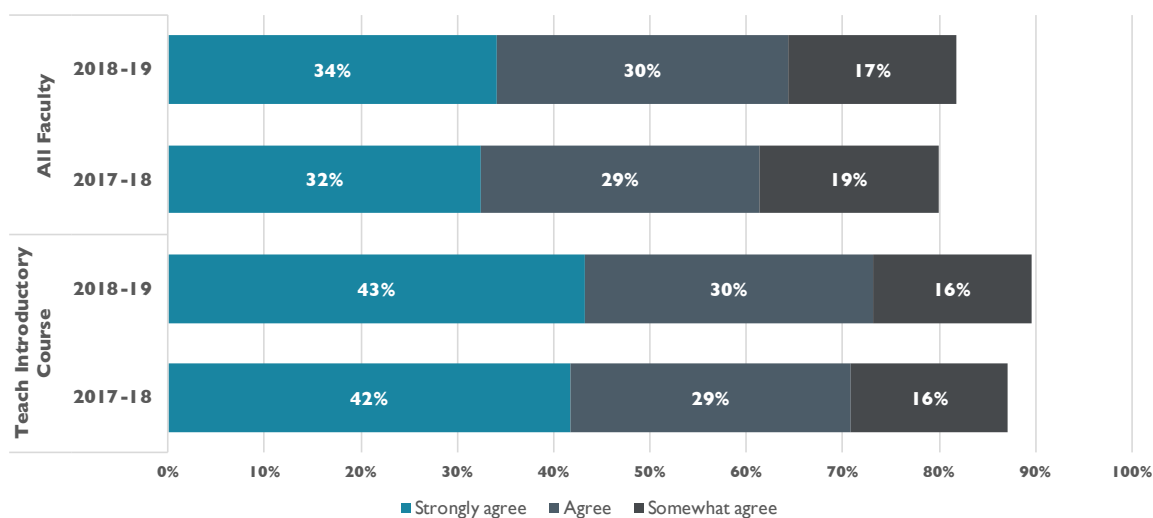
Teaching faculty were asked if they were aware of any initiatives at the department, institution, or system level addressing the cost of course materials. Only a minority of faculty were aware of any such initiatives. Faculty teaching introductory-level courses were more likely to be aware of an initiative, perhaps because these large enrollment courses might be the primary target for initial cost savings approaches.

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[10] https://www.insidehighered.com/news/2019/07/25/spending-and-costs-textbooks-continue-decrease-according-surveys

STUDENT TEXTBOOK COST INITIATIVES 2018-19

Initiative	All Faculty	Teach Introductory Course
Institutional-level initiative	16%	20%
System-wide initiative	7%	10%
Department-level initiative	4%	9%
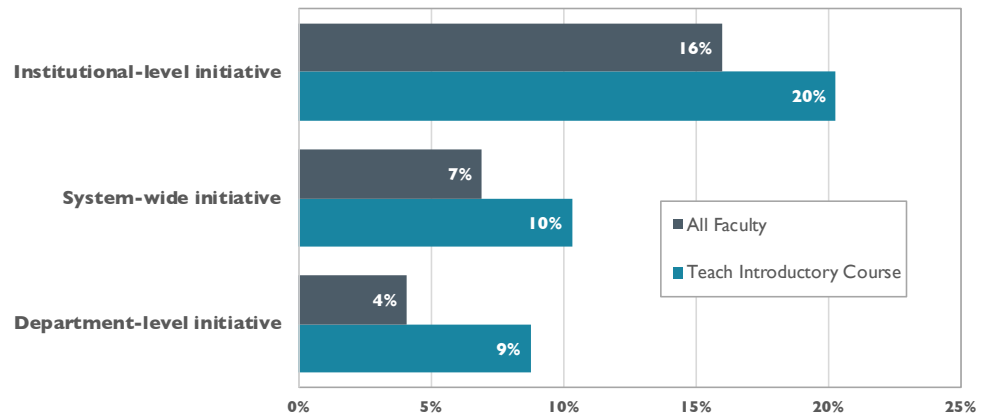
Given that large majorities of teaching faculty continue to believe that the cost of required teaching materials can be a serious issue for their students, it is surprising that faculty are not aware of initiatives designed to address this issue. Either institutions are leaving this to faculty, or faculty do not recognize their efforts.

Faculty Control

Faculty have less control over the choice of technologies and new publishing and distribution models than over the selection of print-based textbooks.

> **Faculty Voices:**
>
> *I do not believe textbook decisions should be an institutional- or government-based decision. The instructor should be mindful of cost, but also should retain the sole responsibility for selecting educational resources that serve the student's learning and enhance classroom instruction. (Full-time Linguistics / Language Faculty)*
>
> *Digital copies are all that is now offered and using these puts too much of the course control into the hands of publishers. (Full-time Social Sciences Faculty)*
>
> *Costs are too high and control of information is too restrictive. Web-based, free resources are becoming more important to my teaching. (Full-time Natural Sciences Faculty)*
>
> *A bigger problem for me as a faculty member is the lack of faculty input (at least in my unit) into choice of LMS; nor are there open informational discussions of some of the other resources the survey asked about. (Full-time Arts and Literature Faculty)*

The choice of textbook has always been seen by faculty as central to their role in teaching and learning. This is most often the responsibility of the individual faculty member who creates the course. Large enrollment courses with multiple sections might have a committee decide, or enlist a lead teacher whose role is to solicit feedback from other instructors and then select the best option.

WHO MAKES DECISION ABOUT TEXTBOOK: 2013-14

- Faculty only
- Faculty and Administrative
- Administrative only

2%
22%
76%
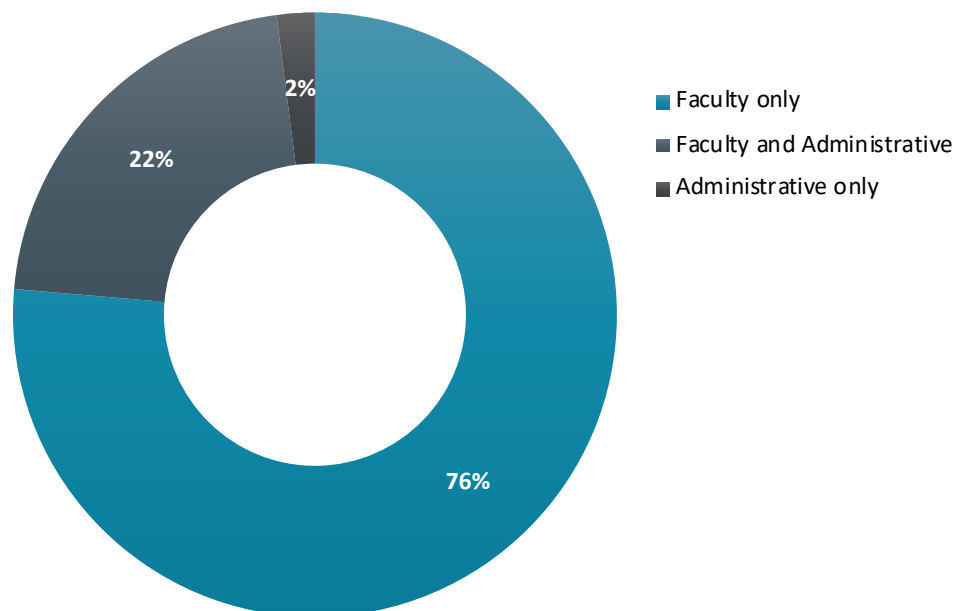
In 2013-14 virtually all textbook decisions had significant faculty involvement, with only 2% of decisions made without direct faculty involvement. The 22% percent of decisions that included both faculty and administrative involvement were overwhelmingly committees composed of faculty with some administrative presence.

This picture is somewhat different for the choice of technologies, such as online homework systems, that faculty are increasingly using to support their teaching. These systems are now found on over a third of all required course material lists, a rate higher than that for video/film, software, or clicker systems.

Faculty rely on others at their institution to install, maintain, and support instructional technology. This reliance on others means that faculty do not enjoy the same level of autonomy in deciding to adopt an online homework system, or in the selection of which ones to employ.

WHO MAKES DECISION ABOUT ONLINE HOMEWORK SYSTEM: 2018-19

- Faculty only
- Faculty and Administrative
- Administrative only

12%

15%

73%
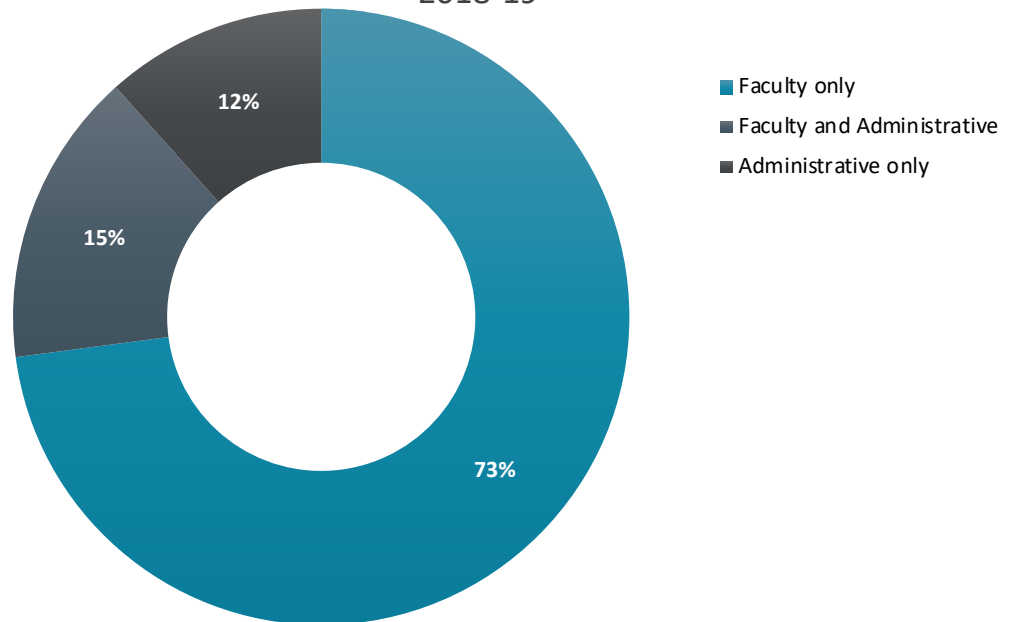
While the proportion of decisions made by faculty (acting either alone or as a group) is similar to that for print textbooks, the proportion of decisions being made solely by administrators is far larger than for print textbooks. Decisions that do not include faculty are a departure from the model typically used for the selection of print textbooks.

The pattern of decision making for online homework systems has remained stable for the past two years; results for 2018-19 are a very close match for those seen in 2017-18.

WHO DECIDES ON ONLINE HOMEWORK / COURSEWARE SYSTEMS

Category	2018-19	2017-18
Individual Faculty	70%	67%
Faculty Committee	27%	28%
Institution	17%	20%
Department Chairperson	17%	17%
Don't know	2%	3%
System	2%	3%
Other	1%	2%
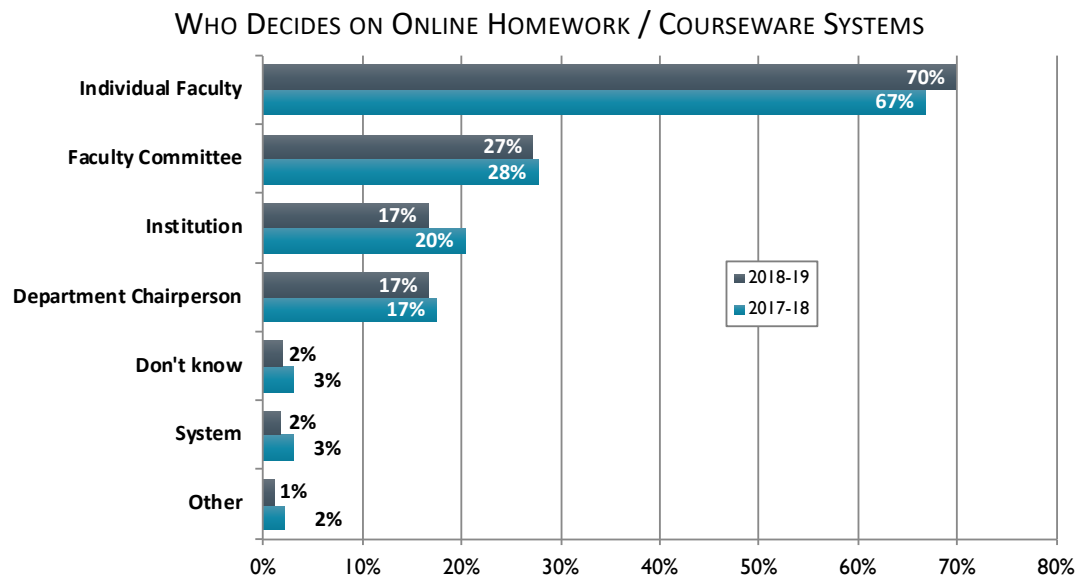
It might be argued that faculty are less invested in which online homework system they use, as long as it is functional and well supported by the institution. Giving up some autonomy for this level of support, for an item that may not be at the core of their specific subject matter, may be viewed as a fair tradeoff by the faculty member.

The growing adoption of inclusive access models is fundamentally changing the decision-making dynamic. This distribution approach, unknown just a few years ago, has already reached double-digit penetration rates among those teaching introductory-level courses. While faculty members are still involved in the majority of inclusive access adoption decisions, this is a significant change from the pattern faculty used for print-based textbooks.

WHO MAKES DECISION ABOUT INCLUSIVE ACCESS: 2018-19
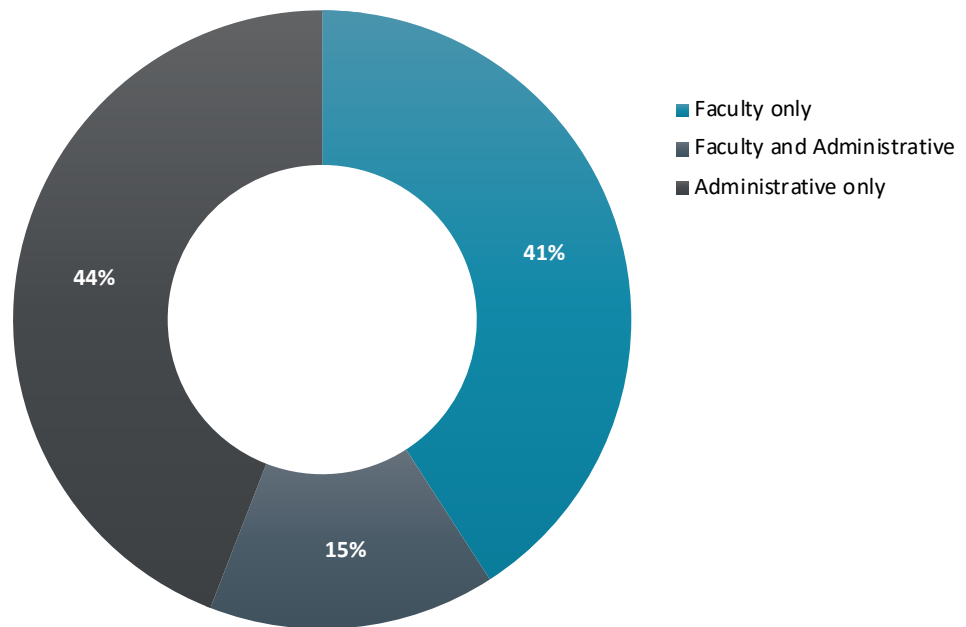
Unlike online homework systems, which are content agnostic, inclusive access choices are at the heart of the faculty role in selecting the most appropriate course materials. Moving the decision process to another level in the institution does not appear to be driven by concerns for teaching and learning, but mainly for cost and control reasons.

Textbook Licensing

Awareness of licensing and OER continues to increase at a slow but steady rate, but a majority of faculty remain unaware.

The William and Flora Hewlett Foundation provides the following definition for "Open Educational Resources":

OER are 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 re-purposing by others. Open educational resources include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge.[11]

Many faculty members assume that they know what OER means, when they may only have a vague understanding of the details. The phrasing of questions regarding awareness of OER is critical. The question needs to provide enough of the dimensions of OER to avoid confusion, without being so detailed as to overeducate respondents and cause them to claim to be "Aware" of OER. Reports in this series use a consistent question which has proven to have the best balance in differentiating among the varying levels of awareness, without leading those with no previous knowledge of the concept. Additional details are provided in the Methodology section of this report.

Faculty Voices:

Students do seem quite concerned about the cost of textbooks, which is why I've moved as much as possible to providing excerpts of relevant texts as PDFs (under fair use) and leaning much more heavily on open-source/Creative Commons-licensed learning materials and/or academic articles that are covered by our institutional and/or library subscriptions in recent course designs. (Full-time Computer and Information Science Faculty)

There are so many ways around paying for the course materials that I find more and more students are breaking the copyright laws. Sharing, copying, and finding free online copies of material are the top ways they are doing it. (Full-time Computer and Information Science Faculty)

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[11] http://www.hewlett.org/programs/education-program/open-educational-resources.

When faculty members self-reported their level of awareness of Open Educational Resources, almost half (47%) said that they were generally unaware of OER ("I am not aware of OER" or "I have heard of OER, but don't know much about them"). Only 16% reported that they were "Very Aware" ("I am very aware of OER and know how they can be used in the classroom"), and a slightly higher number (21%) said that they were "Aware" ("I am aware of OER and some of their use cases"). An additional 16% of faculty reported that they were only "Somewhat Aware" ("I am somewhat aware of OER, but I am not sure how they can be used").

AWARENESS OF OPEN EDUCATIONAL RESOURCES: 2018-19

- Very Aware
- Aware
- Somewhat Aware
- Not Aware

16% · 21% · 16% · 47%
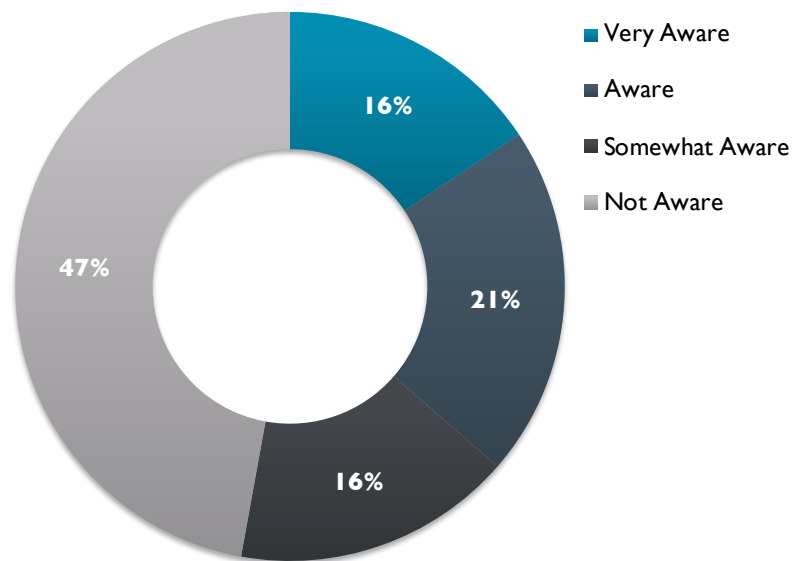
While the proportion of the faculty that say that they are "Aware" of OER remains low, the 2018-19 results reinforce a trend of increasing awareness observed over the previous four surveys. For the first time, a majority of faculty claim at least some level of awareness of the term OER. The number of faculty claiming to be "Very Aware" continues to grow each year, from 5% in 2014-15 to 16% in 2018-19. Similarly, those saying that they were "Aware" grew from 15% to 21%, and those "Somewhat Aware" from 14% to 16%. The proportion that reported no awareness dropped from two-thirds (66%) in 2014-15 to just under half (47%) for 2018-19.

AWARENESS OF OPEN EDUCATIONAL RESOURCES: 2014-15 TO 2018-19
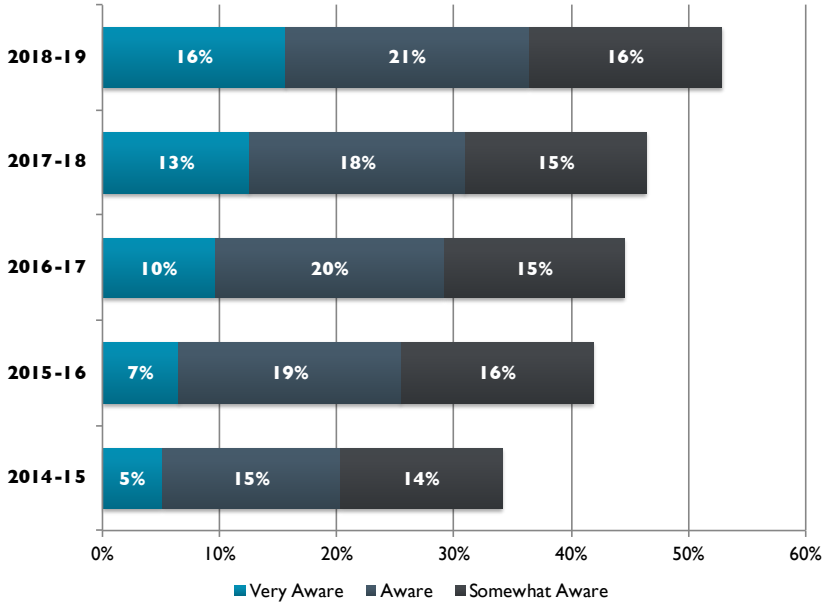
Awareness of Licensing of Open Educational Resources

Faculty awareness of the term "Open Educational Resources" does not ensure that they fully understand the ideas of open licensing and the ability to reuse and remix content, which are central to the concept of OER.[12] Most faculty report a high degree of awareness of the copyright status of their classroom content; 95% express some degree of awareness, with 83% responding "Very Aware" or "Aware." Awareness of public domain licensing for classroom content is also very high, with 90% of respondents reporting some degree of awareness. The level of knowledge of Creative Commons licensing, on the other hand, is lower. Less than one-half of faculty say that they are either "Very Aware" (22%) or "Aware" (26%), and only 73% report any level of awareness.

Awareness of Legal Permissions: 2018-19

	Very Aware	Aware	Somewhat Aware
Copyright	44%	39%	13%
Public Domain	32%	38%	21%
Creative Commons	22%	26%	24%

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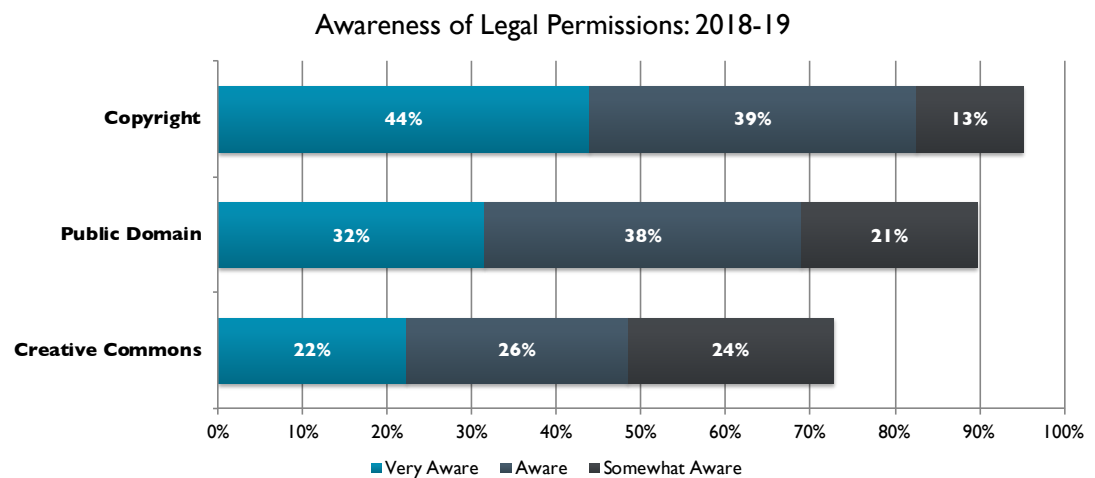
[12] David Wiley, The Access Compromise and the 5th R, Iterating Toward Openness, http://opencontent.org/blog/archives/3221

The level of Creative Commons awareness is particularly important in the context of measuring a complete understanding of open educational resources. OER is not just about materials being free, but also about less restrictive licensing than traditional copyrighted print publications. Such licensing, in theory, allows for greater flexibility in how the material can be used in a course.

Combining responses for awareness of OER and awareness of its legal permissions, specifically Creative Commons, provides a more precise estimate of the level of understanding of OER and the concepts underpinning it. Removing faculty who report that they are unaware of Creative Commons licensing from the "Aware" categories of the measure of OER awareness creates a stricter index of OER awareness, one that includes those who are aware of *both* the term and the licensing that goes along with it.

AWARENESS OF OPEN EDUCATIONAL RESOURCES AND CREATIVE COMMONS: 2018-19
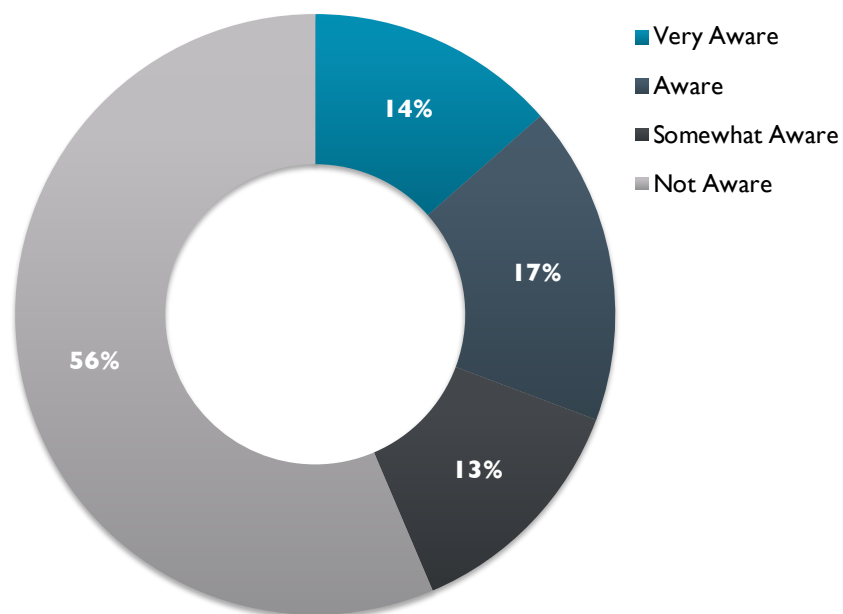
The level of OER awareness drops when we apply this stricter definition. Those classified as "Very Aware" falls from 16% to 14%, "Aware" from 21% to 17%, and "Somewhat Aware" from 16% to 13%. The overall proportion classified into any of the "Aware" categories changes from 53% when awareness of Creative Commons is not required, to 44% when it is included.

The level of combined awareness of OER and Creative Commons also continues to grow each year. Faculty reporting that they were "Very Aware" more than doubled, from 5% in 2014-15 to 14% in 2018-19. Likewise, those saying they were "Aware" grew from 12% to 17% over the same period. The total percentage of faculty claiming some degree of awareness using this stricter definition stood at 26% in 2014-15, rose to 34% in 2015-16, 37% in 2016-17, 39% in 2017-18, and now stands at 44% for 2018-19.

AWARENESS OF OPEN EDUCATIONAL RESOURCES AND
CREATIVE COMMONS: 2014-15 TO 2018-19
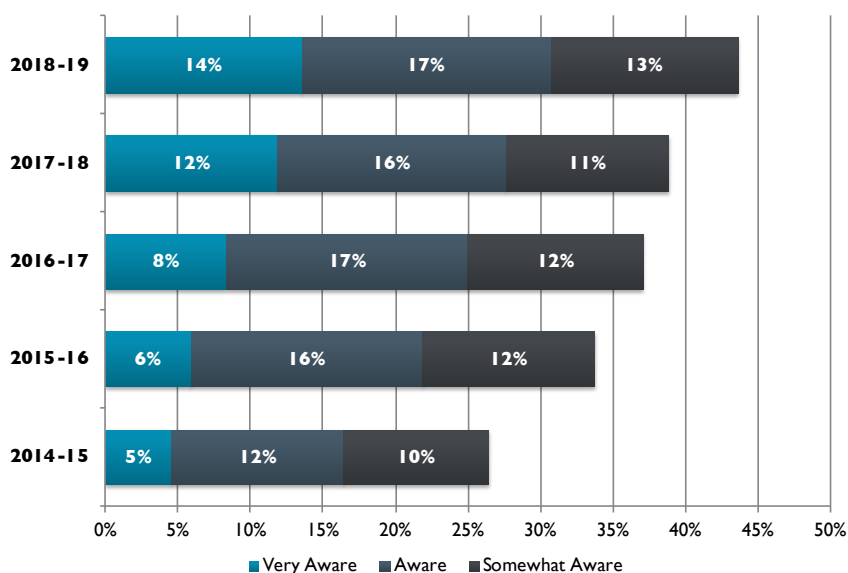
Both measures of OER awareness — with and without correcting for awareness of licensing — show steady year-over-year growth for the past five years, with increasing numbers of faculty reporting higher levels of awareness every year. The news is not all positive; substantial numbers of faculty remain either unaware or only "Somewhat Aware" of OER. At the current rate of increase, it will take another five years before a majority of teaching faculty will claim to be either "Very Aware" or "Aware" of OER and its licensing.

OER Use

Use of OER continues to grow, but remains only a small portion of the market.

> **Faculty Voices:**
>
> *I believe in using open source and instructor-created materials whenever possible. However, the time involved in converting courses is extensive. Faculty need time and funding in order to research and adopt open or zero-cost materials. The publisher resources are still too expensive even with digital and subscription models. (Full-time Arts and Literature Faculty)*
>
> *OER doesn't always work. (Full-time Business Administration Faculty)*
>
> *Many of my courses are under considerable pressure to adopt Open Educational Resources to reduce the cost for students. (Full-time Computer and Information Science Faculty)*
>
> *I try to always use free digital print texts and articles to help reduce the financial burden on students. (Full-time Social Sciences Faculty)*
>
> *I am a big proponent of OER. I have been working to convince my faculty colleagues to adopt OER textbooks whenever possible. (Full-time Natural Sciences Faculty)*
>
> *My great hope is that either non-profit groups or government agencies develop funding mechanisms for the production of good quality OER textbooks and other resources for a greater variety of courses. For some of my students, textbook costs are an extremely serious issue. (Part-time Natural Sciences Faculty)*
>
> *I teach at a community college. When it comes to paying the light bill or buying a textbook, which do you think should come first? I am a big proponent of using an OER. Textbook costs should not be a barrier to education. (Part-time History / Government Faculty)*
>
> *My students welcome any materials at a lower cost. That is one reason I chose to do OER. (Full-time Humanities Faculty)*
>
> *Due to the high costs, we are considering switching to OER or not requiring the latest edition of the text, as used editions can bring significant savings. (Full-time Natural Sciences Faculty)*
>
> *Cost along with personalized learning is very important for the co-requisite college Algebra course. We are using OpenStax with Knewton Alta to address both issues (Full-time Mathematics Faculty)*
>
> *We've opted for OER textbooks from OpenStax because they are free. (Full-time Mathematics Faculty)*
>
> *I am increasingly concerned about the cost of textbooks and have had a good experience with OpenStax, which is free to all. (Full-time Natural Sciences Faculty)*
>
> *I am using OpenStax's Introduction to Business. It is a fine textbook — superior to the one we were using before through McGraw Hill Create. (Full-time Business Administration Faculty)*

Faculty were asked if they used OER materials in any of their courses. Just over one-quarter (26%) of faculty that teach large-enrollment introductory courses report that they are using OER in some fashion, with equal numbers saying they use OER as supplemental and required materials. The rates are lower across all faculty, with 14% reporting using OER as required course materials in at least one of their courses.

USED OER IN ANY COURSE 2017-18

Category	Teach Introductory Courses	All Faculty
Supplemental Course Material	26%	23%
Required Course Material	26%	14%
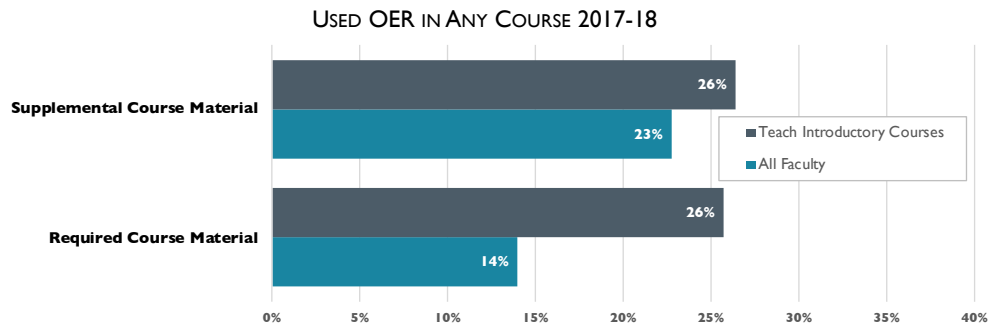
The 2018-19 results see the continued growth of OER adoption as both supplemental and required materials. The rate of supplemental OER use among all faculty stood at 15% in 2015-16, rising to 23% in 2018-19. Among faculty teaching introductory level courses, the increase has been from 20% in 2015-16 to 26% in 2018-19.

USED OER IN ANY COURSE AS SUPPLEMENTAL MATERIAL: 2015-16 TO 2018-19

Year	Teach Introductory Courses	All Faculty
2018-19	26%	23%
2017-18	24%	18%
2016-17	22%	18%
2015-16	20%	15%
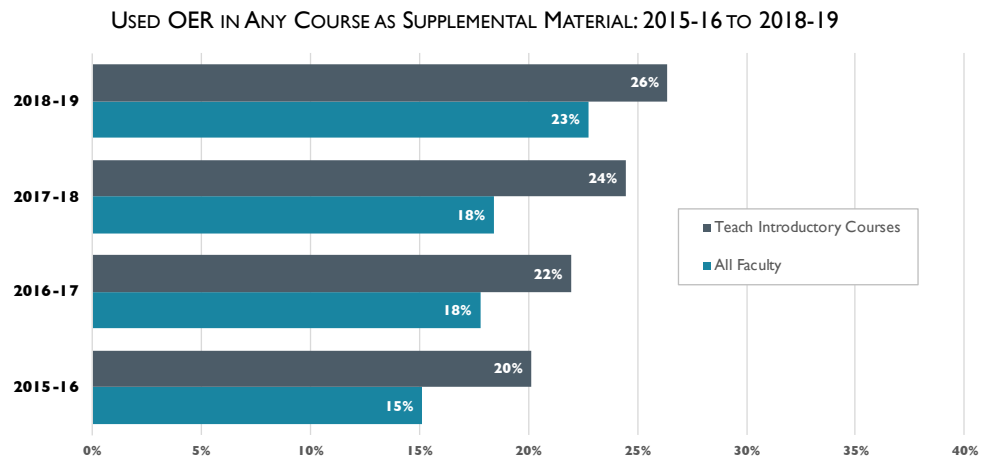
Even greater increases have occurred for the use of OER as required materials. The number of all faculty using OER as required materials has nearly tripled, rising from 5% in 2015-16 to 14% in 2018-19. The growth among faculty teaching introductory courses is equally impressive, growing from 8% to 26% in the same period.

USED OER IN ANY COURSE AS REQUIRED MATERIAL: 2015-16 TO 2017-18
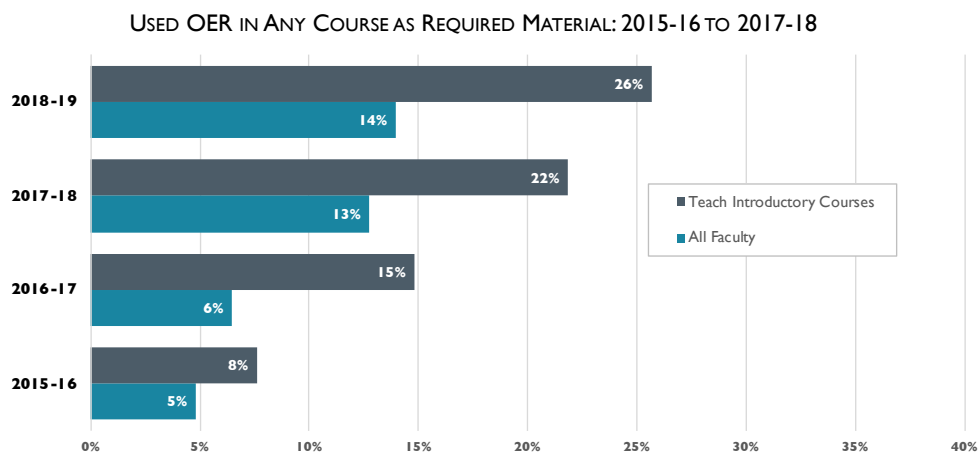
Growth has been steady, but only a small minority of faculty have adopted OER as required material in any of their courses. It is important to keep in mind that the scope of this question is purposefully broader than questions about textbook selection and use that focuses on a single course. This question asks about *any* course that the faculty member has taught, so a measure of *per-course* OER use will be much lower than this *per-faculty member* metric.

In addition to the limited awareness of OER among faculty, finding OER alternatives to traditional commercial textbooks can be difficult, even for those who are aware of the term and what it means. OER textbooks are typically newer to the market, and do not have the marketing support of large, well-financed publishers behind them. Some institutions have tried to address this issue by launching outreach efforts to educate faculty on the potential benefits of OER, and the various OER options that might be available.

Faculty Voices:

My university must be doing *something* with respect to OER, because our syllabus template, imposed from above, requires us to list all our textbooks and also say explicitly whether they are OER. However, I am unaware of the details. (Full-time Arts and Literature Faculty)

I'm delighted that my institution is undertaking initiatives to make the price of textbooks more affordable. (Full-time Humanities Faculty)

In my opinion, OER initiatives need to be better communicated at the faculty level. It is too much to expect a faculty member to just "know" how to access these resources after hearing about them. (Full-time Social Sciences Faculty)

I am aware of an institution-level desire to decrease textbook costs to students. However, the faculty are not mandated to adopt the cheapest option, so that we can choose the best options for students to learn the required material. (Full-time Natural Sciences Faculty)

My institution is "encouraging" more OER offerings to defray cost as mandated by state law. (Full-time Business Administration Faculty)

My institution has a program to make books available for low income students. (Full-time Social Sciences Faculty)

My university emphasizes digital access. (Full-time Economics Faculty)

I agree with the OER initiative, but I chose this text because it was the best. I may have to drop it if required to in the near future. (Full-time Natural Sciences Faculty)

Nearly a quarter of faculty teaching introductory courses report that they are aware of an OER initiative at their institution. The level of awareness of such an initiative is lower among the overall population of faculty, perhaps because the initiatives target faculty teaching larger courses where the cost benefits to students would be greater. Smaller numbers have heard of initiatives that span an entire system, with the smallest percentage aware of a departmental-level initiative.

AWARENESS OF OPEN EDUCATIONAL RESOURCE INITIATIVES 2018-19
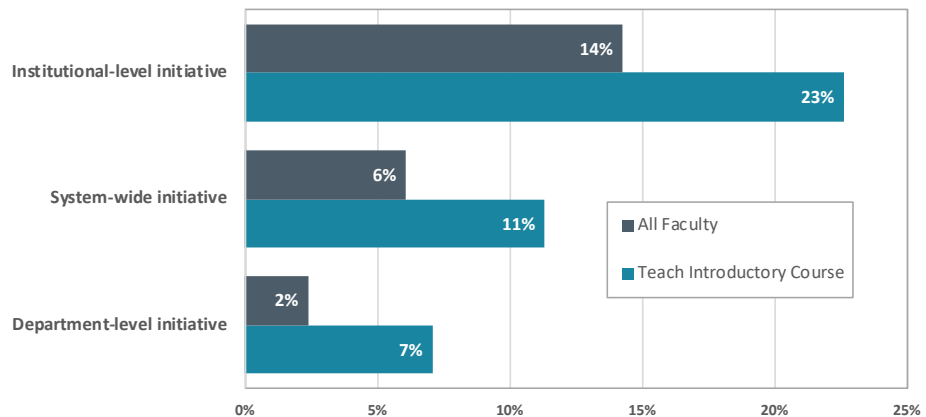
The question then becomes, are these education and outreach efforts having any effect? Are faculty who are aware of one or more OER initiatives adopting OER in higher numbers than those that have not heard of these efforts?

Faculty who are aware of one or more OER initiatives are much more likely to be adopters of OER. This holds true for both faculty teaching introductory-level courses and the general population of faculty. Faculty teaching introductory-level courses are almost three times as likely to adopt an OER textbook (43%, as compared to 15%) if they are aware of an OER initiative, while the ratio among all faculty is four to one (33%, compared to 8%).

OER ADOPTION BY AWARENESS OF OER INITIATIVES 2018-19
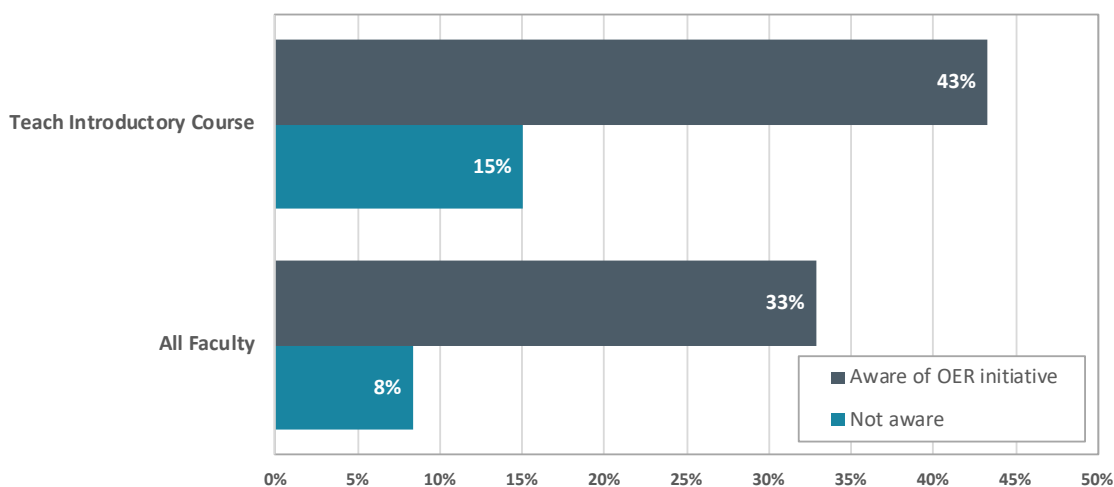
While these results strongly suggest that OER initiatives are having a positive impact on OER adoption, there may be other factors that play a role here as well. It may be, for example, that OER initiatives are more common at institutions where the faculty are more accepting, or the institutional need is greater, acting as a proxy for the institutional culture. That said, the magnitude of these results is such that it appears that institutional initiatives are having a sizeable impact, and are a critical tool that institutions can use to grow OER adoption.

Textbook Quality

Faculty who have adopted OER report that the quality of the materials is at least as good as commercial alternatives.

One of the concerns expressed by faculty considering open educational resources regards the quality of OER materials, as compared to traditional, commercial alternatives. All faculty in this study were asked to rate the quality of the course materials that they adopted. It is important to understand that these are *faculty* ratings, not a rating by *students,* and that the ratings represent individual perceptions of how well the adopted materials serve the needs of a particular course.

Using a scale of zero to 100, faculty were asked: "Considering all aspects how satisfied are you with the primary textbook for this course?" The results show that both faculty using an OER textbook and those using a non-OER textbook give a high rating for their choice. Both groups provided the median rating (one-half rated above this point, and one-half rated below) of 84, showing that faculty using OER are as satisfied with their textbook as those using non-OER material.

Overall Satisfaction Rating of Primary Textbook

Textbook	Rating
OER Textbook	84
Non-OER Textbook	84
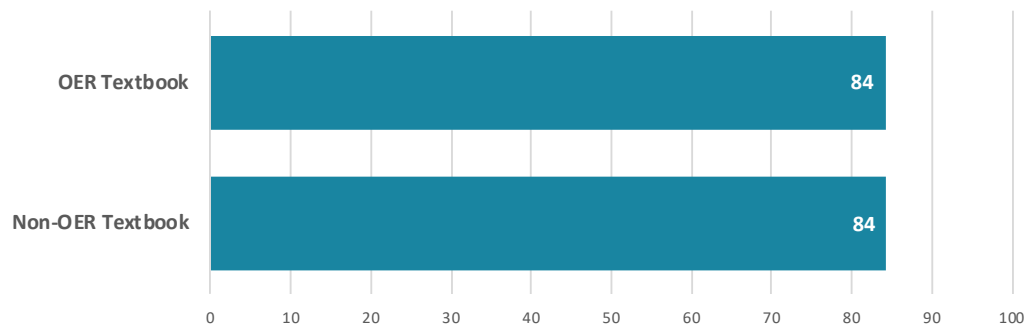
Faculty Voices:

Many open-access texts are of mediocre quality due to the haphazard nature of editorial review and lack of editorial direction — they read like books created by a committee, rather than books written by a single author with a clear voice, style and educational mission. (Full-time Natural Sciences Faculty)

Quality is most important. Many OER I have found are weak. (Full-time Education Faculty)

I use as much freely available stuff as possible. Large publishers provide materials that are often middling quality at high prices. (Full-time Arts and Literature Faculty)

I serve a low-income student population. In this age of widely-accessible, high-quality digital materials it seems ridiculous to make them buy a textbook or other package. (Full-time Psychology Faculty)

I'm fortunate that for this course, an incredibly high-quality textbook is available as a Creative Commons license — so completely free. (Part-time Engineering Faculty)

Faculty were also asked about their level of satisfaction with seven specific aspects of their adopted textbook. The ratings for OER textbooks were very similar to those of non-OER textbooks for many of the dimensions measured, with identical ratings for accuracy and scope of coverage, and very close ratings for the level of presentation. Users of OER textbooks were slightly less satisfied with their confidence in timely updates (a median rating of 85, as compared to 89 for non-OER textbook users). Not surprisingly, users of OER textbooks expressed much higher levels of satisfaction with the cost to the student of their textbook, as compared to users on non-OER textbooks.

Ratings of Satisfaction with Textbook Attributes

Attribute	OER Textbook	Non-OER Textbook
Accuracy of content	92	92
Scope and coverage of content	90	90
Confidence of timely updates	85	89
Cost to the student	85	62
Level of presentation	82	84
Included supplemental instructor material	60	71
Included test banks	58	69
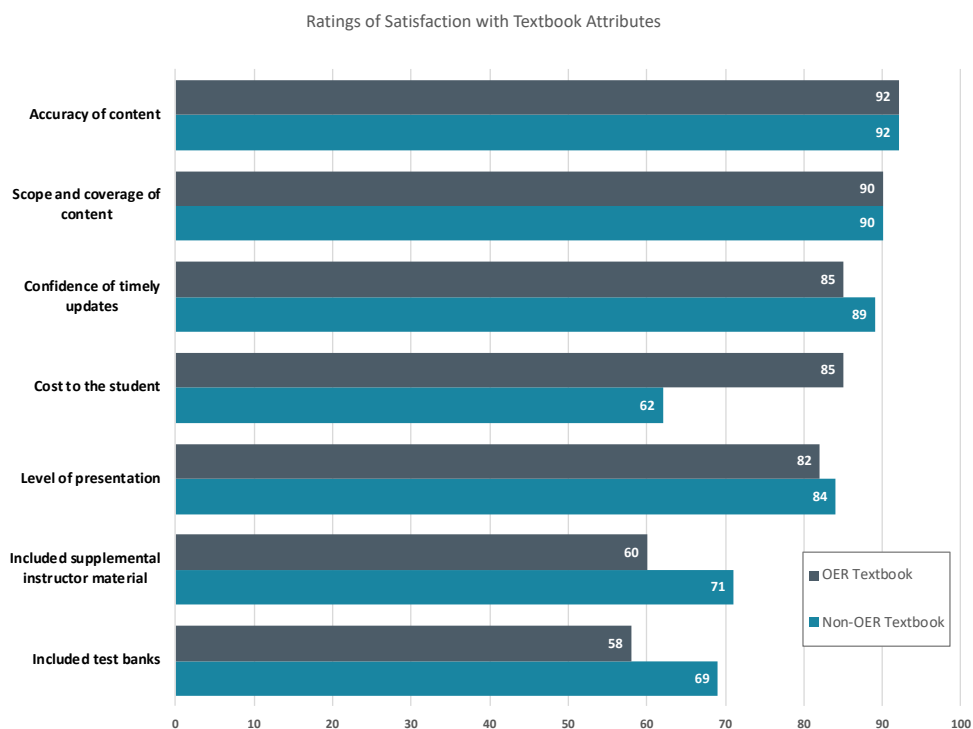
OER textbook users do have lower levels of satisfaction with supplemental materials, including both test banks and instructor materials. Previous reports in this series have shown that while the quality of supplemental materials is an important factor in selecting course materials, it is only one-half as important to faculty as comprehensive content or the cost to the student.

Faculty who place more value on supplemental materials may find OER textbooks less inviting. At the same time, those who are concerned about the cost to the student would be more welcoming of the OER option. In all other aspects, including the overall rating, OER and non-OER materials are seen as equivalent by faculty.

The 5Rs

The 5Rs (Retain, Revise, Remix, Reuse, and Redistribute) of OER are relevant to faculty, but they do not think that they need OER to achieve this flexibility. The vast majority of faculty use commercial materials in ways that mirror the 5Rs of OER.

Advocates for OER often cite the 5Rs as a major benefit of adopting open resources.[13] The open licensing of OER means that faculty are free to Retain, Reuse, Revise, Remix, and Redistribute their course materials. Results from the previous report in this series demonstrate that large proportions of faculty, not just those using OER, use their textbooks in ways that mirror the advantages of the 5Rs.

This pattern continues in the most current results, with virtually no difference in how faculty treat OER textbooks and non-OER textbooks.

Textbook Use Patterns

Behavior	OER Textbook	Non-OER Textbook
Skipped sections of the textbook	66%	65%
Taught topics in a different order	61%	63%
Added addition explanatory materials	53%	51%
Replaced content with your own material	42%	39%
Replaced content with material from other sources	35%	36%
Corrected inaccuracies	21%	17%
Revised/edited material	19%	17%
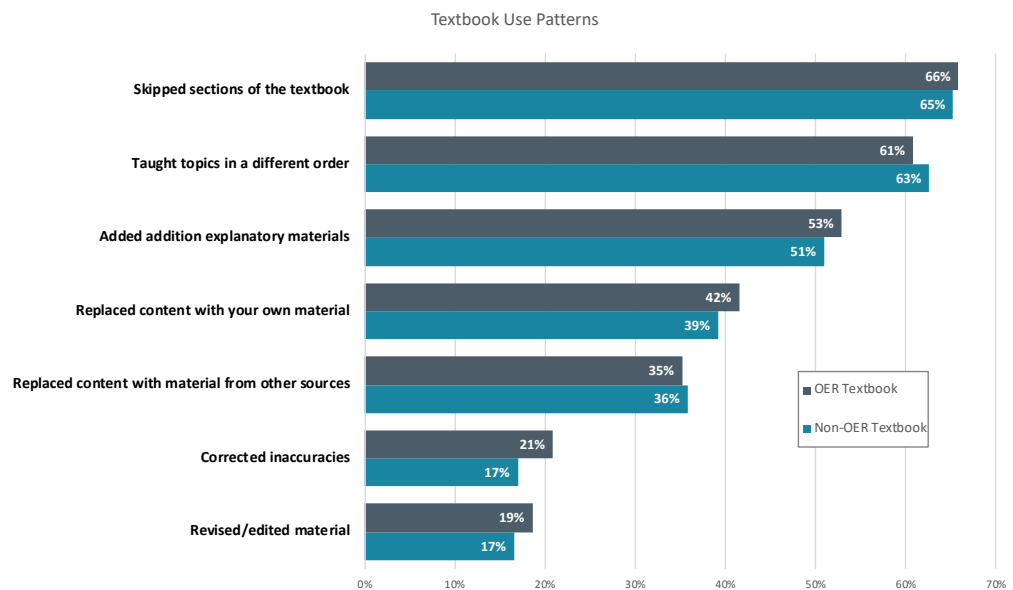
These results only tell us whether faculty are engaging in these behaviors, not the importance they place on them or the quality of the experience. That said, the conclusions apparent from these results are that faculty value the flexibility that approaches such as OER's 5Rs provide, but already find that flexibility in existing, non-OER materials. Faculty who adopt OER are not making any more use of the 5Rs than faculty not using OER. Faculty do not view the 5Rs as a reason to move to OER.

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[13] "The 5 Rs of designing an OER course", eCampusNews November 2014, https://www.ecampusnews.com/2014/11/19/oer-course-design-475/

Summary

The evolution of the textbook distribution and adoption market is ongoing, and we can expect even more changes over the next few years. Looking at the current results and the trends in these findings over the past five years, we can make some educated guesses about where the market is going:

- There is clear evidence that the pattern of faculty embracing digital options will continue. Some hold outs will remain, especially in particular disciplines (e.g., History, Government, Linguistics and Language), but the overall trend points to large-scale adoption of digital materials as the preferred option. If the transition continues at its current rate, the range of non-digital options may shrink sufficiently that even resistant faculty may find themselves with little choice but to go digital.

- The move to digital will not be without its problems. Many faculty believe that their students still prefer print and, perhaps more importantly, that their students learn better from print than from digital materials.

- Inclusive access models will have an increasing impact on the market and will define the new "normal." The approach resonates with faculty as it addresses their pain points of cost, students lacking materials because they do not think they need them, and frustration with current publisher business models.

- The most compelling OER messaging (primarily around cost and access) will be taken up by many others, and it will be increasingly important to demonstrate the value of OER beyond these criteria.

- As inclusive access and similar systems are adopted in increasing numbers, awareness of the limitations of these models (e.g., student access to materials after the end of a course) will become better understood and will lead to some resistance.

- A critical source of ongoing tension will be adoption decisions moving from individual faculty to administrators. As traditional publishers provide better deals for more expansive offerings through inclusive access and other models, departments and even whole schools will make comprehensive decisions spanning multiple courses and faculty members. Individual faculty could lose control over decision-making as the financial incentive for large-scale adoptions becomes too compelling for administrators to pass up.

METHODOLOGY

The data for this report comes from survey results using national samples of teaching faculty and department chairpersons. These samples are designed to be representative of the overall range of teaching faculty and department chairpersons in U.S. higher education. A multi-stage selection process was used for creating the stratified samples. The process began by obtaining data from a commercial source, Market Data Retrieval,[14] which has over one and a half million faculty records and claims that its records represent 93% of all teaching faculty. All faculty who taught at least one course and all individuals who held the title of department chairperson were selected for this first stage. Individuals were then randomly selected from the master list in proportion to the number contained in each Carnegie Classification, to produce a second-stage selection of teaching faculty and department chairpersons. This list was then checked against opt-out lists, as well as for non-functioning email addresses.

A total of 4,339 faculty and 1,431 chairpersons responded to a sufficient number of questions to be included in the analysis, representing the full range of higher education institutions (two-year, four-year, all Carnegie classifications, and public, private nonprofit, and for-profit) and the complete range of faculty (full- and part-time, tenured or not, and all disciplines). More than 74% of faculty respondents report that they are full-time faculty members. Over 34% teach at least one online course, and 29% teach at least one blended course.

Institutional descriptive data come from the National Center for Educational Statistics' IPEDS database.[15] After the data were compiled and merged with the IPEDS database, respondents and nonrespondents were compared to ensure that the survey results reflected the characteristics of the entire population of schools. The responses were compared for 35 unique categories based on the 2015 Carnegie Classification of Institutions of Higher Education.

Analysis for this report has been conducted for three different subgroups of the survey respondents:

- A series of questions were directed to all responding faculty (all teaching faculty) on such issues as their criteria for selecting educational resources, awareness of openly licensed resources and open textbooks, future plans, etc.

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[14] http://schooldata.com/wordpress/wp-content/uploads/2014/06/MDR-Education-Catalog.pdf
[15] http://nces.ed.gov/ipeds/datacenter/

- An additional set of more detailed questions were directed only to those faculty members who had been through a decision-making process related to course materials over the past two years. Approximately 88% of all responding faculty qualified for these additional questions because they had created a new course, substantially modified an existing course, and/or selected new required course materials.

- A number of different questions were posed to departmental chairpersons, primarily focused on department and institutional policy issues.

As noted in our previous reports, the specific wording of questions is critical in measuring the level of OER awareness. The wording for this report (provided below) matches that used in previous reports in this series. It was found to have the best balance in differentiating amongst different levels of awareness, while avoiding leading those with no previous knowledge of the concept.

How aware are you of Open Educational Resources (OER)? OER is defined 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 re-purposing by others." Unlike traditionally copyrighted material, these resources are available for "open" use, which means users can edit, modify, customize, and share them.

- ❍ I am not aware of OER
- ❍ I have heard of OER, but don't know much about them
- ❍ I am somewhat aware of OER but I am not sure how they can be used
- ❍ I am aware of OER and some of their use cases
- ❍ I am very aware of OER and know how they can be used in the classroom

This question may still slightly overstate the level of OER awareness, so we also ask a series of additional questions. Because licensing for remixing and reuse is central to the concept of OER, a question about the respondent's awareness of different legal permissions was asked of all respondents *before* any questions about OER awareness itself:

How aware are you of each of the following licensing mechanisms?

	Unaware	Somewhat Aware	Aware	Very Aware
Public Domain				
Copyright				
Creative Commons				

By combining the responses from the OER awareness question with those of the licensing questions, a combined index of awareness is constructed. An identical process was used in previous reports in this series, to permit year-over-year comparisons and trend analysis.

APPENDIX

Digital versus Print

FACULTY PREFERENCE FOR DIGITAL MATERIALS 2018-19

Not Blended/Hybrid course	26.5%
Blended/Hybrid course	38.3%
Not online course	26.0%
Online Course	37.3%
Undergraduate course	28.7%
Graduate course	38.2%
Do not use OER	26.9%
Use OER as required course material	41.2%

FACULTY PREFERENCE FOR DIGITAL MATERIALS BY DISCIPLINE 2018-19

History / Government	15.4%
Linguistics / Language	21.1%
Arts and Literature	21.7%
Psychology	23.9%
Other	25.7%
Humanities	26.9%
Social Sciences	30.4%
Natural Sciences	31.4%
Mathematics	33.2%
Medicine	36.4%
Business Administration	36.5%
Engineering	41.2%
Computer and Information Science	46.5%
Education	46.5%

FACULTY WHO AGREE THAT STUDENTS LEARN BETTER FROM PRINT MATERIALS THAN THEY DO FROM DIGITAL BY DISCIPLINE 2018-19

Humanities	59.1%
Arts and Literature	58.8%
History / Government	58.5%
Linguistics / Language	56.8%
Psychology	56.1%
Other	47.4%
Mathematics	46.7%
Business Administration	44.3%
Social Sciences	43.6%
Natural Sciences	42.1%
Medicine	37.9%
Computer and Information Science	36.0%
Engineering	34.4%
Education	29.6%

Inclusive Access

PRIMARY REASON STUDENTS DO NOT HAVE ACCESS TO TEXTBOOK

	All Faculty
Cost	54.9%
Student's don't think they need it	37.2%
Availability	1.1%
Other	6.8%

FACULTY RATINGS OF IMPORTANCE OF INCLUSIVE ACCESS FACTORS 2018-19

	Critical	Very Important	Somewhat important	Not important
Student access to materials after the course	21.8%	33.7%	34.2%	10.3%
Option to purchase print materials	25.6%	39.2%	30.7%	4.5%
Ability to easy integrate other materials	36.1%	44.3%	16.5%	3.1%
Flexibility for faculty to configure materials	44.1%	41.2%	12.5%	2.3%
Low cost to student	59.3%	33.3%	6.9%	0.5%

FACULTY RATING INCLUSIVE ACCESS FACTORS AS CRITICAL 2018-19

	All Faculty	Teach Introductory Course
Student access to materials after the course	24.9%	19.8%
Option to purchase print materials	23.3%	27.1%
Ability to easy integrate other materials	38.1%	34.8%
Flexibility for faculty to configure materials	45.2%	43.3%
Low cost to student	55.3%	62.0%

Cost to the Student

THE COST OF THE COURSE MATERIALS IS A SERIOUS PROBLEM FOR MY STUDENTS 2018-19

	Teach Introductory Course	All Faculty
Strongly agree	43.3%	34.1%
Agree	29.9%	30.3%
Somewhat agree	16.5%	17.4%

THE COST OF THE COURSE MATERIALS IS A SERIOUS PROBLEM FOR MY STUDENTS

	Teach Introductory Course		All Faculty	
	2017-18	2018-19	2017-18	2018-19
Strongly agree	41.7%	43.3%	32.5%	34.1%
Agree	29.1%	29.9%	28.9%	30.3%
Somewhat agree	16.3%	16.5%	18.6%	17.4%

AWARENESS OF STUDENT TEXTBOOK COST INITIATIVES 2018-19

	Teach Introductory Course	All Faculty
Department-level initiative	8.8%	4.1%
System-wide initiative	10.3%	6.9%
Institutional-level initiative	20.3%	16.0%

Faculty Control

WHO MAKES DECISION ABOUT TEXTBOOK: 2013-14

Faculty only	76.4%
Faculty and Administrative	21.6%
Administrative only	2.0%

WHO MAKES DECISION ABOUT ONLINE HOMEWORK SYSTEM: 2018-19

Faculty only	72.9%
Faculty and Administrative	15.5%
Administrative only	11.6%

WHO DECIDES ON ONLINE HOMEWORK / COURSEWARE SYSTEMS

	2017-18	2018-19
Other	2%	1%
System	3%	2%
Don't know	3%	2%
Department Chairperson	17%	17%
Institution	20%	17%
Faculty Committee	28%	27%
Individual Faculty	67%	70%

WHO MAKES DECISION ABOUT INCLUSIVE ACCESS: 2018-19

Faculty only	40.9%
Faculty and Administrative	15.0%
Administrative only	44.1%

Textbook Licensing

	Very Aware	Aware	Somewhat Aware	Not Aware
Awareness of Open Educational Resources	15.7%	20.7%	16.5%	47.1%

AWARENESS OF OPEN EDUCATIONAL RESOURCES: 2014-15 TO 2018-19

	Very Aware	Aware	Somewhat Aware	Not Aware
2014-15	5.1%	15.2%	13.8%	65.9%
2015-16	6.6%	18.9%	16.5%	58.4%
2016-17	9.6%	19.6%	15.3%	55.5%
2017-18	12.5%	18.4%	15.4%	53.6%
2018-19	15.7%	20.7%	16.5%	47.1%

Awareness of Licensing of Open Educational Resources

AWARENESS OF LEGAL PERMISSIONS: 2018-19

	Very Aware	Aware	Somewhat Aware	Unaware
Creative Commons	22.3%	26.2%	24.4%	27.2%
Public Domain	31.5%	37.5%	20.8%	10.1%
Copyright	43.9%	38.6%	12.6%	4.8%

AWARENESS OF OPEN EDUCATIONAL RESOURCES AND CREATIVE COMMONS: 2018-19

Very Aware	Aware	Somewhat Aware	Not Aware
13.5%	17.2%	12.9%	56.4%

AWARENESS OF OPEN EDUCATIONAL RESOURCES AND CREATIVE COMMONS : 2014-15 TO 2018-19

	Very Aware	Aware	Somewhat Aware	Not Aware
2014-15	4.6%	11.9%	9.9%	73.6%
2015-16	5.9%	16.0%	11.9%	66.3%
2016-17	8.4%	16.6%	12.1%	62.9%
2017-18	11.9%	15.7%	11.3%	61.1%
2018-19	13.5%	17.2%	12.9%	56.4%

OER Use

USED OPEN EDUCATIONAL RESOURCES IN ANY COURSE 2017-18

	All Faculty	Teach Introductory Courses
Required Course Material	14.0%	25.7%
Supplemental Course Material	22.7%	26.4%

USED OPEN EDUCATIONAL RESOURCES IN ANY COURSE AS SUPPLEMENTAL MATERIAL: 2015-16 TO 2017-18

	All Faculty	Teach Introductory Courses
2015-16	15.1%	20.1%
2016-17	17.8%	21.9%
2017-18	18.4%	24.4%
2018-19	22.7%	26.4%

USED OPEN EDUCATIONAL RESOURCES IN ANY COURSE AS REQUIRED MATERIAL: 2015-16 TO 2017-18

	All Faculty	Teach Introductory Courses
2015-16	4.8%	7.6%
2016-17	6.5%	14.8%
2017-18	12.8%	21.9%
2018-19	14.0%	25.7%

AWARENESS OF OPEN EDUCATIONAL RESOURCE INITIATIVES 2018-19

	Teach Introductory Course	All Faculty
Department-level initiative	7.1%	2.4%
System-wide initiative	11.3%	6.1%
Institutional-level initiative	22.6%	14.3%

OER ADOPTION BY AWARENESS OF OER INITIATIVES 2018-19

	All Faculty	Teach Introductory Course
Not aware	8.3%	15.1%
Aware of OER initiative	32.9%	43.3%

Textbook Quality

OVERALL SATISFACTION RATING OF PRIMARY TEXTBOOK

	Non-OER Textbook	OER Textbook
Overall level of satisfaction (median)	84.4	84.2

RATINGS OF SATISFACTION WITH TEXTBOOK ATTRIBUTES

	Non-OER Textbook	OER Textbook
Included test banks	69.0	58.0
Included supplemental instructor material	71.0	60.0
Level of presentation	84.0	82.0
Cost to the student	62.0	85.0
Confidence of timely updates	89.0	85.0
Scope and coverage of content	90.0	90.0
Accuracy of content	92.0	92.0
Overall level of satisfaction	84.4	84.2

The 5R's

TEXTBOOK USE PATTERNS

	Non-OER Textbook	OER Textbook
Revised/edited material	16.6%	18.6%
Corrected inaccuracies	17.0%	20.9%
Replaced content with material from other sources	35.8%	35.2%
Replaced content with your own material	39.1%	41.5%
Added addition explanatory materials	50.9%	52.9%
Taught topics in a different order	62.6%	60.8%
Skipped sections of the textbook	65.2%	65.8%

OPEN

The model of course material distribution and selection is at an inflection point. After decades of only minor changes to how faculty discovered and adopted textbooks for their courses, the past five years has been marked by substantial changes:

• There is a growing acceptance (even preference) by faculty for digital materials. More faculty now prefer digital over print, and they report that their students are likewise accepting of digital materials.

• Faculty, chairpersons, administrators, and even entire college systems are increasingly concerned about the cost of materials for their students. This is driven by historically rising prices and the emergence of lower-cost alternatives, resulting in a growing awareness of cost as an issue at multiple levels within the institution.

• An understanding on the part of faculty that many of their students are going without the required text. This is reported as primarily a cost concern, but also because the students are not convinced that they need the materials.

• The introduction of new publishing and distribution models by commercial publishers, the most important being "inclusive access," has substantially altered the options available to faculty.

The rapid evolution of the course materials market has had a significant impact on the future of open textbooks. The past five years have seen many positive signs for the growth of open textbooks:

• Faculty who have adopted Open Educational Resources (OER) rate the quality of OER as equal to that of commercial alternatives.

• Awareness of licensing and OER continues to grow every year.

• Institutional and system-level OER initiatives appear to be effective in increasing OER adoption rates.

There have also been a few negative signs for open textbooks:

• Faculty do not think that they need OER to achieve the flexibility of the 5Rs (Retain, Revise, Remix, Reuse, and Redistribute). The vast majority of faculty are using commercial materials in ways that mirror the 5Rs of OER.

• A growing list of alternative material distribution options adds confusion to the "open" message. Many of the options are being presented in the same light as OER, and highlight many of the same advantages.

• While familiarity with the term OER has now reached a majority, many faculty remain unfamiliar with the licensing or how to use these materials, and current rates of growth will not change this for many years.

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