

2012 Faculty and Administrator Open Educational Resources Survey

August 2012



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The [Florida Distance Learning Consortium](#) was a network of all public (39) postsecondary institutions in Florida that served 1.3 million postsecondary students annually. On July 1, 2012 the Florida Distance Learning Consortium was merged with three other Florida organizations to form [Florida Virtual Campus](#).

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Executive Summary

To examine the open educational resources (OER) climate in Florida's postsecondary institutions, the Florida Distance Learning Consortium (FDLC) conducted an online survey of higher education faculty and staff between January 18 and April 4, 2012. The purpose of the survey was to assess their perceptions of textbook quality, awareness of OER, open textbooks, and open courseware, and respondents' experience with open access materials. The survey was a follow-up to the Florida Open Access Textbooks in Higher Education Survey, which was administered in fall term of 2009.

The FDLC developed the revised statewide survey with input from staff at the State University System Board of Governors and staff at the Division of Florida Colleges. The Consortium commissioned a measurement and statistics professional to assist with developing and analyzing the survey. All 39 state institutions were invited to participate. From participating institutions, faculty and staff were solicited by campus officials. Over 2,500 respondents ($n = 2,593$) from eight of Florida's 11 state universities and 22 of its 28 community colleges and state colleges agreed to participate in the anonymous online survey. Of the respondents, 916 (38%) reported employment by universities and 1,483 (62%) by colleges.

Parallel to the faculty and staff survey, a student survey was conducted to assess Florida postsecondary students' experiences and perceptions of textbooks, digital resources, and OER during the same period as the faculty and staff survey. It was a revised version of the 2010 [Florida Student Textbook Survey](#) (FDLC, 2011). On questions selected for their comparative value, responses of students were examined for similarities and differences to the faculty and staff responses.

Key findings from this study indicated that faculty perceived themselves as being likely to use and, to a much smaller degree, to author OER. However, few had actually authored any type of OER. A deficiency of incentives for authoring could be a barrier to authorship. Time, support, professional editing, and the availability of co-authors were identified as important considerations in deciding to author. In addition, very few of the respondents indicated that creating any types of OER were considered as criteria for promotion and tenure. Open textbook and open courseware use patterns suggest that providing OER in small units (e.g., modules, chapters) may best fit the needs of faculty. The following section provides a summary of the key findings. A more in depth report of the findings is provided in the Discussion section of this report.

Summary of Key Findings

- ❖ **Key Finding 1: Faculty and staff are becoming familiar with open textbooks, though relatively few have used them.** Almost three-quarters of respondents had heard of open textbooks, but only 6% reported having used part or all of an open textbook
- ❖ **Key Finding 2: The most important factors in evaluating textbooks are how well they address course objectives, accuracy, currency, and consistency.** For the choice, “pertinence of the content to the objectives of a course,” the most common rank was 1 (i.e., the highest rank) and the median rank was also 1.
- ❖ **Key Finding 3: In deciding to author open textbooks, faculty and staff value time, support, professional editing, and co-authors most highly.** Potential means for addressing these factors include release time for authoring and institution funding for editorial services for the development of open textbooks and resources.
- ❖ **Key Finding 4: Faculty are familiar with the term open courseware (80%) but less than one-quarter have used open courseware in support of their teaching.** Of those who had used open courseware (21%), over half reported using it for their own courses, 63% reported adapting it for use in their own courses, and 50% reported using it to prepare for teaching a class.
- ❖ **Key Finding 5: Although approximately one-third perceived OER, open courseware, and open textbooks to be similar or greater in academic value to commercial resources, approximately half did not know their commercial value or the opportunities they present.** Open textbooks were rated as similar or more valuable by 36%, open courseware was rated similarly by 36%, and open educational resources by 45%, when compared to commercial resources. It is important to note that nearly half (48%, 52%, 44% respectively) expressed that they did not know their comparative value.
- ❖ **Key Finding 6: Many faculty perceived themselves as being likely to use OER in the future.** Almost three-quarters (73%) of respondents answered that they were either very likely or somewhat likely to use a portion of an open textbook, and half (51%) said they were very or somewhat likely use all of an open textbook.
- ❖ **Key Finding 7: Use patterns suggest that breaking OER into small units may increase their usefulness.** A much larger percentage of respondents reported using portions rather than entire open textbooks (22% vs. 8%, respectively) and open courseware (28% vs. 7% respectively).
- ❖ **Key Finding 8: Although more than a third of the respondents viewed themselves as likely to author OER in the future, relatively few reported having done so.** Respondents indicated that they were very likely or somewhat likely to author a portion of an open textbook (38%), a portion of an open course (35%), or other OER (42%) in the future. Relatively few, however, reported developing or having developed an open textbook (3%), open courseware (4%), or other OER (11%) at present.
- ❖ **Key Finding 9: Interactive practice questions were ranked highest among digital study aids for supporting student learning, indicating their importance as supplements to textbooks.** Other highly ranked digital study aids included video, interactive try-it-now activities, and PowerPoint slide shows.
- ❖ **Key Finding 10: Some libraries offer textbooks for students to check out, but many students and some faculty are unaware that they do.** Almost half (48%) of respondents indicated that their institutional libraries provide a copy of their textbook for check out. However, 23% did not know and 26% stated that their library did not provide checkout access to textbooks.
- ❖ **Key Finding 11: Few institutions or departments consider authoring OER in promotion and tenure decisions.** Very few of respondents indicated creating open textbooks (7%), open courseware (6%), and OER (8%) would be considered as a criterion for promotion and tenure. This could potentially leave a deficiency of incentives for authoring. Incentives for authors are important because faculty have very busy schedules and have to concentrate on their careers to succeed.
- ❖ **Key Finding 12: Private funding and fees for students are viewed as the most viable sources for funding open textbooks.** A small open materials fee in the student payment schedule when an open textbook is used in the course might be a sustainable approach to generating revenue to support the development and maintenance of open textbooks.

Introduction

The rising cost of higher education is becoming a barrier to enrollment and completion for an ever-increasing number of students. However, one expense holds potential for relief: the textbook. Although commercial textbook costs continue to climb, the use of open educational resources (OER), including open textbooks and open courseware, is easing the financial strain for some students. OER are teaching, learning and research resources in the public domain or licensed to permit their free use or re-purposing by others. Open textbooks differ from commercial textbooks by their license that allows the user to read online, download, or print the book at no additional cost.

Some states and institutions are taking action to lower costs of educational resources. In the fall of 2011, the Washington State Board of Community and Technical Colleges made available complete open course materials for 42 of their courses with highest enrollments, and more courses are on the way. Open courseware refers to course materials created and shared freely with the world via the Internet. Computer science professors at Stanford University have experimented with offering Massive Open Online Courses, and in fall 2011, 160,000 students enrolled in their Artificial Intelligence open course. In the K-12 arena, CK-12 offers dozens of open textbooks that are aligned to the Common Core Standards and, in many instances, to all state standards. Several states (e.g., Washington,¹ Utah²) are modifying these textbooks to be aligned with each standard for their individual state. By identifying, adopting and modifying existing high-quality, openly licensed resources the states are projecting they will be able to save taxpayers millions of dollars in their efforts to meet K-12 educational resource needs. For a state to follow the lead of these pioneers, the perceptions and knowledge of faculty are essential in the planning of an OER initiative. Do faculty and staff know about OER? Do they know the cost students pay for textbooks? What factors do they consider important in selecting a textbook or other course material?

¹ HB 2337 directs the Office of Superintendent of Public Instruction (OSPI) to support the Washington public K-12 school districts in learning about and adopting existing OER aligned with Washington and common core curricular standards (e.g., CK-12 FlexBooks & Curriki). The bill also directs OSPI to “provide professional development programs that offer support, guidance, and instruction regarding the creation, use, and continuous improvement of open courseware.”

² The Utah State Office of Education (USOE) will develop and support open textbooks in the key curriculum areas of secondary language arts, science, and mathematics. USOE will encourage districts and schools throughout the state to consider adopting these textbooks for use beginning fall 2012.

Methodology

To examine the OER climate in Florida's postsecondary institutions, the Florida Distance Learning Consortium (FDLC) conducted an online survey of higher education faculty and staff between January 18 and April 4, 2012. The purpose of the survey was to assess their perceptions of textbook quality, awareness of OER, open textbooks, and open courseware, and respondents' experience with open access materials. The survey was a follow-up to the Florida Open Access Textbooks in Higher Education Survey, which was administered in fall term of 2009.

The FDLC developed the revised statewide survey with input from the staff of the State University System of Florida Board of Governors and staff of the Division of Florida Colleges. The Consortium commissioned a measurement and statistics professional to assist with developing and analyzing the survey. All 39 state institutions were invited to participate. From participating institutions, faculty and staff were solicited by campus officials. Over 2,500 respondents ($n = 2,593$) from eight of Florida's 11 state universities and 22 of its 28 community colleges and state colleges agreed to participate in the anonymous online survey. Of the respondents, 916 (38%) reported employment by universities and 1,483 (62%) by colleges.

Parallel to the faculty and staff survey, a student survey was conducted to assess Florida postsecondary students' experiences and perceptions of textbooks, digital resources, and OER during the same period as the faculty and staff survey and is available from [the project website](#). It was a revised version of the 2010 [Florida Student Textbook Survey](#) (FDLC, 2011). On questions selected for their comparative value, responses on the 2012 student survey were examined for similarities and differences to the faculty and staff responses.

Results

Section 1: Open Textbooks

❖ **Key Finding 1: Faculty and staff are becoming more familiar with open textbooks, though relatively few have used them.**

Only 27% of respondents reported never having heard of open textbooks.³ By contrast, in the 2009 survey, 52% of respondents reported being “not at all familiar” with open textbooks. In the current survey, 6% reported having “used a part of or an entire open textbook” (see Table 1).

Table 1

How familiar are you with open textbooks?

Response	<i>n</i>	%
I have never heard of open textbooks.	624	26.9
I have heard of open textbooks but never looked for any.	934	40.2
I’ve looked at some open textbooks.	518	22.3
I’ve use a part of or an entire open textbook in my course(s).	140	6.0
I do not assign textbooks.	74	3.2
Other	34	1.5

Note. *n* = 2,324.

❖ **Key Finding 2: The most important factors in evaluating textbooks are how well they address course objectives, accuracy, currency, and consistency.**

For several of the following findings, the faculty and staff respondents were presented with a number of factors or characteristics and asked to rank the top 5, with 1 as the highest and 5 as the lowest of those ranked. These rankings are reported with the number of respondents who ranked a factor in their top 5, the median and mode. Median is the rank closest to the 50th percentile and the mode is the most common rank a factor was assigned. The implications were guided by examining the number of respondents who ranked a given factor (*n*), the median, and the mode.

- *Factors in choosing an open textbook:* Asked to rank the 5 most important factors when choosing an open textbook from among 7 factors and “other,” for which they were requested to specify the “other” factor. The most commonly ranked choices were “pertinence of the content to the objectives of a course” (*n* = 1,658, 87%), “accuracy of spelling, grammar, and facts” (*n* = 1,510, 79%), and “currency of information” (*n* = 1,475, 78%). For the choice, “pertinence of the content to the objectives of a course,” the most common rank was 1 (i.e., the highest rank) and the median rank was also 1 (see Table 2).

³ A definition of open textbooks was provided to respondents: “An open textbook is one that the publisher or author has given rights to the public to use, download, print, and in some cases modify the textbook, at no cost to the user. Print copies of some open textbooks are available through a publisher or print-on-demand service at a modest cost.”

Table 2***From the seven factors listed below, what factors do you consider to be the most important in choosing an open textbook?***

Factor	<i>n</i>	<i>n</i> top ranking	median	mode
Accuracy of spelling, grammar, and facts	1,510	434	2.0	1.0
Availability of ancillaries for instruction (e.g., PowerPoints, test banks)	1,366	93	4.0	4.0
Availability of digital resources for students (e.g., practice exercises, videos)	1,386	61	4.0	4.0
Pertinence of the content to the objectives of a course	1,658	948	1.0	1.0
Currency of information	1,475	239	2.0	2.0
Availability of a print version	943	45	4.0	5.0
Availability to access on multiple electronic devices	854	29	4.0	5.0
Other important factors	203	30	4.0	5.0

Note. *n* = 1,901.

- *Characteristics that determine quality of an open textbook:* Respondents were asked to rank the five most important characteristics that determine the quality of an open textbook from among eight characteristics and “other.” The most commonly ranked factors were “consistency of terminology and concepts” (*n* = 1,670, 88%), “currency of information” (*n* = 1,646, 87%), and “accuracy of spelling, grammar, and facts” (*n* = 1,614, 85%) (see Table 3).

Table 3***From the eight characteristics listed below, what characteristics would you consider to determine the quality of an open textbook?***

Characteristic	<i>n</i>	median	<i>n</i> top ranking	mode
Accuracy of spelling, grammar, and facts	1,614	2.0	597	1.0
Consistency of terminology and concepts	1,670	2.0	316	2.0
Currency of information	1,646	2.0	515	1.0
Editorial review	916	4.0	41	4.0
Peer review and recommendation	1,391	4.0	235	4.0
Quality of paper and binding	426	5.0	2	5.0
Reputation of author(s)	1,039	4.0	106	5.0
Reputation of publisher	548	5.0	19	5.0
Other	145	4.0	48	5.0

Note. *n* = 1,901.

- *Factors in deciding to use open textbooks:* When asked to rank the five most important factors that would influence a respondent’s decision to use an open textbook from among ten factors and “other,” the most commonly ranked factors were “currency of information” (*n* = 1,099, 75%), “desire to reduce costs to students” (*n* = 973, 67%), “accuracy of spelling, grammar, and facts” (*n* = 941, 64%), and “scope of coverage” (*n* = 880, 60%). The most common rank for “accuracy of spelling, grammar, and facts” was 1, and the median was 2 (see Table 4).

Table 4

From the ten factors below, what would be the most important factors in influencing your decision to use an open textbook?

Factor	<i>n</i>	n top ranking	median	mode
Accuracy of spelling, grammar, and facts	941	315	2.0	1.0
Availability of supplementary materials (e.g., test banks)	832	77	3.0	5.0
Currency of information	1,099	313	2.0	2.0
Desire to reduce cost to students	973	214	3.0	3.0
Online availability	754	70	4.0	4.0
Publication date	394	15	4.0	4.0
Recognition for reducing costs to students	309	25	4.0	5.0
Scope of coverage	880	191	3.0	3.0
Support from administration to use open textbooks	344	43	4.0	5.0
Time to find, review, and select open textbooks	662	150	4.0	5.0
Other	92	43	2.0	1.0

Note. *n* = 1,463.

❖ **Key Finding 3: In deciding to author open textbooks, faculty and staff value time, support, professional editing, and co-authors most highly.**

When respondents were asked to rank the 5 most important factors influencing their decision to create an open textbook from among 10 factors (plus “other”), the most commonly ranked factors were “time to develop an open textbook” (*n* = 1,292, 88%), “support from administration (e.g. financial support or release time)” (*n* = 926, 63%), “assurance of professional editing” (*n* = 878, 60%), and “availability of co-authors.” “Time to develop an open textbook” was most commonly ranked 1 and had a median of 1 (see Table 5).

Table 5

From the ten factors listed below, what would be the most important factors influencing your decision to create an open textbook?

Factor	<i>n</i>	<i>n</i> top ranking	median	mode
Time to develop an open textbook	1,292	910	1.0	1.0
Availability of other authors to co-develop a textbook	828	47	3.0	2.0
Assurance that the textbook would be peer-reviewed	708	55	3.0	3.0
Assurance that the textbook would be professionally edited	878	41	3.0	4.0
Availability of review criteria to authors	332	13	4.0	5.0
Availability of supplementary materials	604	22	4.0	4.0
Recognition for efforts toward promotion	491	51	3.0	5.0
Recognition for efforts toward tenure	277	36	4.0	5.0
Support from administration (e.g., financial support or release time)	926	157	3.0	3.0
Desire to reduce cost to students	677	85	4.0	5.0
Other	96	33	3.0	1.0

Note. *n* = 1,463.

Section 2: Open Courseware

❖ **Key Finding 4: Faculty are familiar with the term open courseware (80%) but less than one-quarter have used open courseware in support of their teaching.**

Only 20% of respondents indicated that they had not heard of open courseware; 21% (307 respondents) reported that they had used some open courseware, but only 1.5% (22 respondents) reported that they had used an entire open course (see Table 6). Slightly more of the respondents were familiar with the term open courseware (80%) than the term open textbooks (73%). This somewhat greater familiarity with open courseware may be due the higher visibility of sources of open courseware such as the [Open University](#) of Great Britain, [MIT OpenCourseWare](#), and [edX](#), than sources of open textbooks such as [Connexions](#), [OpenStax College](#), [OER Commons](#), [MERLOT](#), and [The Orange Grove](#).

Reasons for using open courseware: The 329 respondents who reported using open courseware were asked to identify the reasons they had done so. Fifty-five percent reported using it for their own courses; 63% reported adapting it for use in their own courses; 50% reported using it to prepare for teaching a class; 42% used it for self-education or self-improvement; 33% used it out of curiosity; and 7% used it to gain qualifications or to boost their careers (see Table 7). Clearly, the salient reasons reported for using open courseware were for the benefit of the respondents' own courses. In open-ended responses, other uses included "for student review," "to assess its quality and suitability for a given course," and "availability of excellent graphics: diagrams, charts, photography, video."

Table 6***How much experience have you had with open courseware?***

Response	<i>n</i>	%
I have not heard of it before.	291	20.0
I have heard of it but have not examined any.	524	36.0
I have visited one or more open courseware sites but have not used the material.	312	21.4
I have used some open courseware.	307	21.1
I have used an entire open courseware.	22	1.5

*Note. n = 1,463.***Table 7*****For what reasons have you used open courseware? Check all that apply.***

Response	<i>n</i>	%
To use for my own courses	183	55.3
To adapt for use in my own courses	207	62.5
To prepare for teaching a course	155	50.0
To gain qualifications or boost my career	22	6.7
For self-education or self-improvement	139	42.0
Out of curiosity	108	32.6
Other	19	5.7

Note. n = 329.

Section 3: Open Textbooks, Open Courseware, and Other Open Educational Resources

- ❖ **Key Finding 5: Although approximately one-third perceived OER, open courseware, and open textbooks to be similar or greater in academic value to commercial resources, approximately half did not know their commercial value or the opportunities they present.** When asked how to rate the academic value of OER compared to commercial products, approximately half of the respondents said they did not know (see Table 8). Among those that offered an evaluation, approximately half of these judged open resources to be similar in value to the commercial counterpart for each of the three types of resources, open textbooks, other OER, and open courseware. Of the respondents who judged the resources, more than two-thirds valued open resources as “similar in value” to or “more valuable” than commercial resources.

Table 8***How does the academic value of the following types of open resources compare to resources provided by commercial publishers?***

Open Educational Resource	More Valuable		Similar in Value		Less Valuable		Don't Know		Total	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Open textbooks	165	11.3	372	25.5	216	14.8	703	48.3	1,456	100.0
Other open educational resources	185	12.7	469	32.2	159	10.9	643	44.2	1,456	100.0
Open courseware	157	10.8	361	24.8	181	12.4	757	52.0	1,456	100.0

❖ **Key Finding 6: Many faculty perceived themselves as being likely to use OER in the future.**

Respondents were clearly more prone to use OER than to author them. In addition, they were more likely to use portions of open textbooks and open courses than whole books or courses (see Table 9). Almost three quarters (73%) of respondents answered that they were either very likely or somewhat likely to use a portion of an open textbook, and half (51%) said they were very or somewhat likely use all of an open textbook. Almost three quarters (73%) said they were very or somewhat likely to use other types of OER, and 64% said they were very or somewhat likely to use a portion of an open courseware.

Table 9***How likely are you to use the following types of open educational resources?***

Open Educational Resource	Very Likely		Somewhat Likely		Not at all Likely		Don't Know		Total	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
A portion of an open textbook	447	30.7	615	42.2	168	11.5	226	15.5	1,456	100.0
All of an open textbook	227	15.6	520	35.7	434	29.8	275	18.9	1,456	100.0
Other open educational resources	475	32.6	588	40.4	153	10.5	240	16.5	1,456	100.0
A portion of an open courseware	333	22.9	601	41.3	210	14.4	312	21.4	1,456	100.0
All of an open courseware	171	11.7	440	30.2	496	34.1	349	24.0	1,456	100.0

❖ **Key Finding 7: Use patterns suggest that breaking OER into small units may increase their usefulness.**

The level of use by respondents varied considerably by type of resource; half of the respondents reported having used OER other than open textbooks or open courseware. The term OER frequently refers to resources that are already be in small units such as videos, images, quizzes, lesson plans, etc. A much larger percentage of respondents reported using portions rather than entire open textbooks (22% vs. 8%, respectively) and open courseware (28% vs. 7%

respectively). Perhaps because open textbooks are easy to modify and re-mix with other sources, the fit of an entire open textbook for a course remains relatively uncommon (8%) (see Table 10). Open courseware frequently provides the course content in small units (e.g., modules, digital files) making it easy for faculty to select and use only the portions of a course that best fits their needs. In the 2009 survey, only 12% of all respondents reported using an open textbook or OER in their courses.⁴

Table 10
How often have you used the following types of open educational resources?

Open Educational Resource	Never		In 1 or 2 Courses		In 3 or 4 Courses		In 5 or More Courses	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
A portion of an open textbook	1,131	77.7	244	16.8	41	2.8	40	2.7
All of an open textbook	1,336	91.8	78	5.4	21	1.4	21	1.4
Other open educational resources	721	49.5	410	28.2	155	10.6	170	11.7
A portion of an open courseware	1,047	71.9	271	18.6	82	5.6	56	3.8
An entire open courseware	1,358	93.3	63	4.3	18	1.2	17	1.2

Note. *n* = 1,456.

❖ **Key Finding 8: Although more than a third of the respondents viewed themselves as likely to author OER in the future, relatively few reported having done so.**

More than a third of the respondents indicated that they were very likely or somewhat likely to author a portion of an open textbook (38%). Forty-two percent were very likely or somewhat likely to author other OER, and 35% a portion of an open courseware in the future (see Table 11).

Table 11
How likely are you to author the following types of open educational resources?

Open Educational Resource	Very Likely		Somewhat Likely		Not at all Likely		Don't Know		Total	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
A portion of an open textbook	177	12.2	375	25.8	528	36.3	376	25.8	1,456	100.0
All of an open textbook	85	5.8	204	14.0	800	54.9	367	25.2	1,456	100.0
Other open educational resources	186	12.8	421	28.9	477	32.8	372	25.5	1,456	100.0
A portion of an open courseware	126	8.7	378	26.0	545	37.4	407	28.0	1,456	100.0
All of an open courseware	62	4.3	184	12.6	783	53.8	427	29.3	1,456	100.0

⁴ The 2009 survey did not address open courseware.

Involvement in authoring OER: The percentages of respondents who reported developing or having developed different types of OER were:

1. Open textbooks (3%)
2. Open courseware (4%)
3. Other OER (11%)
4. None of the above (85%)

When asked to specify the relevant course name and number, if the respondent had developed or was currently developing OER, over 90 unique courses were identified by the 93 participants (3%) who responded to that question (see Table 12).

Table 12

Have you developed, or are you now developing, any of the following open educational resources? Select all that apply.

Item	<i>n</i>	%
Open textbook(s)	41	2.8
Open courseware	60	4.1
Other open educational resources	165	11.3
None of the above	1242	84.9

Note. n = 1,463.

Section 4: Additional Influential Factors

Many faculty are unaware of the prices of the textbooks they assign. Just over half of the respondents (52%) reported always being aware of textbook prices before selecting and assigning them; 27% reported being aware of them some of the time; 6% reported that they are rarely aware of the price; and 3% said they are never aware. The remainder (12%) reported that the question was not applicable to them (see Table 13).

Table 13

Are you aware of textbook prices before selecting and assigning textbooks?

Response	<i>n</i>	%
All of the time	1213	52.2
Some of the time	631	27.2
Rarely	137	5.9
Never	71	3.1
Not applicable	272	11.7

Note. n = 2,324

❖ **Key Finding 9: Interactive practice questions were ranked highest among digital study aids for supporting student learning, indicating their importance as supplements to textbooks.**

Respondents were asked to rank the 5 most useful study aids to support student learning from the 9 provided (with an option to specify “other”). The most commonly ranked study aids were “interactive practice questions” ($n = 1,292$, 88%), “video” ($n = 1,115$, 76%), “interactive ‘try it now’ activities” ($n = 1,086$, 74%), and PowerPoint slide shows ($n = 1,025$, 70%). “Interactive practice questions” and “interactive ‘try it now’ activities” were most commonly ranked 1 and both had a median of 2 (see Table 14).

Student ranking: The question was also asked on the student survey regarding the usefulness of the study aids to support the students’ own learning. The most commonly ranked study aids were “interactive practice questions” ($n = 12,733$, 91%), “PowerPoint slide shows” ($n = 10,704$, 76%), “flash cards” ($n = 9,780$, 70%), “video” ($n = 9,591$, 68%), and “interactive ‘try-it-now’ activities” ($n = 8,445$, 60%). “Interactive practice questions” were most commonly ranked 1 and had a median of 2.

Table 14

From the nine types of study aids listed below, what are the most useful study aids to support student learning?

Study Aid	<i>n</i>	<i>n</i> top ranking	median	mode
Interactive practice questions	1,292	553	2.0	1.0
Flash cards	532	21	4.0	5.0
PowerPoint slide shows	1,025	215	3.0	3.0
Video	1,115	183	3.0	2.0
Audio	455	10	4.0	5.0
Animations	604	48	3.0	3.0
Interactive ‘try it now’ activities	1,086	299	2.0	1.0
Online study groups	557	33	4.0	5.0
Online tutoring system provided by the college	520	47	4.0	5.0
Other	94	47	1.5	1.0

Note. n = 1,463.

❖ **Key Finding 10: Some libraries offer textbooks for students to check out, but many students and some faculty are unaware that they do.**

Almost half (48%) of respondents indicated that their institutional libraries provide a copy of their textbook for check out, 43% in print format only, less than 1% in digital format only, and 5% in both print and digital formats; 23% indicated that they did not know (see Table 15).

Student responses: To the same question on the student survey, 44% of students responded that their library provided textbooks for checkout, 29% in print format only, less than 1% in digital format only, and 14% in both print and digital formats; 47% indicated that they did not know.

Table 15***Does your institutional library provide a copy of your textbook(s) for check out?***

Response	<i>n</i>	%
Yes, in print format	628	43.1
Yes, in digital format	4	0.3
Yes, in both print and digital formats	72	4.9
I don't know	331	22.7
No	375	25.8
No, I do not assign textbooks	46	3.2

Note. n = 1,456.

❖ **Key Finding 11: Few institutions or departments consider authoring OER in promotion and tenure decisions.**

Only 7% of respondents indicated that creation of open textbooks would be considered as a criterion for promotion and tenure at their institution; 8% indicated that creation of other OER would be considered; 5% said creation of open courseware would be considered; and 8% said creation of digital textbooks would be considered (see Table 16).

Table 16***Which of the following factors does your institution consider as criteria for promotion or tenure? Select all that apply.***

Variable	<i>n</i>	%
Creation of digital textbooks	121	8.3
Creation of digital monographs	103	7.1
Creation of other digital course materials (e.g., workbook, lab manual, video, interactive activity)	133	9.1
Creation of peer-reviewed digital journal articles	289	19.8
Creation of open textbooks	98	6.7
Creation of other open educational resources	116	8.0
Creation of open courseware	80	5.5
Don't know	663	45.4
None of the above	460	31.5

Note. n = 1,459.

❖ **Key Finding 12: Private funding and fees for students are viewed as the most viable sources for funding open textbooks.**

Costs of open textbooks are highly variable and depend on a wide range of factors. Respondents were asked to rank the 6 most viable funding sources for developing and updating open textbooks of the 6 provided (and “other”). The results were unsystematic (see Table 17). The funding source “privately funded” was most commonly ranked 1, but had a median of 4 (meaning as many ranked it 5 or 6 as ranked it 1, 2, or 3). All the other sources had a median of 3. The most common rank of the source “student funded by a fee assessed when an open

textbook is used in a course” was 1, and it had the second highest number of top ranks of all the sources. Among the open-ended answers (“other”) were suggestions that professional organizations and donations could be viable sources.

Table 17

Please rank the following funding possibilities for the development and periodic updating of open textbooks with 1 as the most viable and 6 as the least viable.

Funding Possibility	<i>n</i>	<i>n</i> top ranking	median	mode
Privately funded	1,336	314	4.0	1.0
Federally funded	1,352	202	3.0	5.0
State funded	1,373	159	3.0	2.0
Institution funded	1,364	290	3.0	3.0
Student funded by a fee assessed when an open textbook is used in a course	1,309	311	3.0	1.0
Student funded by a technology fee assessed to all students	1,241	123	3.0	6.0
Other	107	32	5.0	6.0

Note. *n* = 1,463.

Student willingness to pay for open textbooks: A question on the student survey addressed the issue of funding through a student fee. It asked if the student respondents would be willing to pay \$5 to \$10 fee for lifetime access to an open textbook instead of paying for a standard commercial textbook. Students indicated strong support of the idea with 61% answering “yes,” 31% answering “maybe,” and only 6% answering “no.” Open-ended comments among the 1.4% answering “other” included numerous expressions of skepticism that such a small fee could be an alternative to paying for a commercial textbook. That skepticism might explain many of the “maybe” and “no” responses as well.

Discussion

The results suggest that open textbooks are becoming more widely discussed, although use is still limited. The finding that two-thirds of the respondents have not examined open textbooks presents an opportunity to increase awareness of quality open textbooks substantially. One way to approach this opportunity would be to show faculty examples of open textbooks in their field and encourage them to examine the books. Another approach would be to provide opportunities for them to learn where and how to locate quality open textbooks. Public awareness campaigns and targeted training for faculty and staff can help to make them aware of OER availability, the potential for students' savings, and their potential to help equalize students' opportunities for access to higher education. Open textbooks and other OER could be discussed and examined in professional development programs, higher education programs preparing postsecondary faculty as well as in education programs for preparing K-12 educators. The survey results underscore the importance of the 2012 Florida legislation that directs the Florida Virtual Campus to: "Promote and provide recommendations concerning the use and distribution of open-access textbooks and education resources as a method for reducing costs, and work with public postsecondary educational institutions in developing a standardized process for the review and approval of open-access textbooks" (HB 5201 Higher Education Conforming, Section 14, creating s. 1006.73(4)(f), Florida Statutes).

The Legislature recognized the need for dependable quality when it called for a standardized review and approval process for open textbooks. Although several organizations have established criteria for reviewers to use while evaluating open textbooks (e.g., [College Open Textbooks](#), [MERLOT](#), [Saylor Foundation](#), and [Textbook Equity](#)) no single authoritative standard yet exists. For faculty to perceive open textbooks as comparable in quality to commercial textbooks, the survey findings suggest that accuracy, currency, and consistency are essential. Furthermore, several faculty indicated in open-ended survey responses the concern that OER quality is in question because of uncertainty around the peer review process. Consistent with these concerns expressed by the respondents', Vukovic (2009) suggested that peer reviews are "an important mechanism for quality assurance" (p. 117). One approach to improving the quality of open textbooks in all of these regards is to engage the editorial services of a university press, such as the [University Press of Florida](#), which publishes the [Orange Grove Texts Plus \(OGT+\)](#) imprint and pays qualified faculty to review the open textbooks. There are no easy answers to how such services can be funded, obtained, and orchestrated. Survey respondents found private funding and student fees to be the most viable means of generating the required revenue. Some respondents, however, suggested that academic professional organizations could play a role. Development and sustainability are critical issues for an OER or open textbook initiative to address.

Perceptions of Academic Value

Faculty and staff perceptions of the academic value of OER were quite positive, especially considering that OER have sometimes been criticized for lack of academic value. However, approximately half of the respondents answered that they did not know how the value of OER compared to resources provided by commercial publishers. Ways in which the issue of open resource awareness and knowledge could be addressed by the administration include providing faculty and staff opportunities to examine samples of high quality print and digital

open resources in their field that have been peer reviewed and that demonstrate the factors that faculty have identified as determining quality: consistency, currency, and accuracy. Opportunity to observe where and how to search as well as contribute such resources could be presented in forums such as webinars, workshops, and videos. Further research could investigate the reasons why some respondents find open resources to be of lesser academic value (e.g., inaccuracies, lack of consistency, or lack of interactivity).

Encouraging Authorship

A deficiency of support and incentives for authoring could be a barrier to authorship. As is true of authorship in general, authoring open textbooks and OER is time-consuming and often goes uncompensated. As the data reflect, many promotion and tenure committees do not consider authoring open educational resources highly as evidence of scholarly accomplishment, which is of critical importance in the university publish-or-perish environment. Because universities generally emphasize research publications, and colleges generally do not, promotion and tenure decisions vary by type of institution, as well as by individual institution and department. Although the acceptance of digital scholarship seems to be edging upward, changes in these traditions are likely to be slow (Anderson & McPherson, 2011; Harley & Acord, 2011) until using open textbooks and other OER becomes more common and accepted in higher education.

Several different approaches have been employed to overcome the barriers to authorship. Possible measures to encourage authorship include: (a) promoting and supporting an institutional climate of sharing, (b) providing opportunities to experience and collaborate with others on the use of open educational resources, and (c) implementing practices that support the acquisition of skills and knowledge needed to fully understand and engage in the OER community. The last of these is suggested because one-quarter of the respondents reported that they did not know if they would be likely to author for each category of OER. A possible explanation for this is that the respondents did not have enough familiarity with OER in general to make an informed choice. One way in which states and institutions can encourage authoring and sharing is by offering faculty rewards and recognition as the University System of Ohio (2012) has done with its [Faculty Innovator Awards](#).

Participants also reported a stronger interest in authoring modules (i.e., “other OER), or portions of an open textbook or open course. This preference suggests a possible strategy for encouraging authorship of open textbooks and open courses. The approach could encompass identifying faculty on a campus who are interested in collaborating on OER development, organizing teams of authors, and determining support and administrative needs to facilitate such collaboration. These potential authors might benefit also from forums that unite authors from their disciplines at their own as well as other institutions for collaboration in the development of OER. Two examples are the [Art History Projects](#) of the [College Open Textbooks Community](#) and the [Open Michigan Health OER](#) network. A successful way in which the editors of [Writing Spaces: Readings on Writing](#), an open textbook series on expository writing, approached the lack of time and co-author issues was by developing anthologies of peer-reviewed essays solicited from writing instructors. At the time of this writing, the editors were working on their fourth volume of the series.

Engaging professional editing of OER is another means taken by institutions in an effort to support authors and addressing quality concerns when developing open textbooks. For example, the University Press of Florida has published a series of three calculus textbooks authored by two University of Florida professors. These authors received strong support from their department and provost, and were paid for their authorship. An alternative model is the for-profit approach taken by [Flat World Knowledge](#). This publisher provides open textbooks for free online, pays royalties to authors, and generates revenue by selling downloads, print versions, audio versions, and interactive study aids. Another for-profit open access model is the approach taken by [InTech](#), which collects fees from authors who are eager to publish their work and offers openly licensed books and chapters for download. Still another business model is that employed by [Bookboon](#), which offers free textbooks, although not openly licensed, with advertising targeted at the learner's major area of study. Bookboon, hires authors for the development of their textbooks. One opportunity to increase authorship of open textbooks might be for professional organizations to engage the volunteer services of distinguished, recently retired faculty who want to remain active in their field and have time to devote to writing and reviewing each other's work.

Use of Open Resources

Respondents reported more than 90 unique courses, associated with Florida Common Course Numbers, as being in preparation or in use for which OER had been developed. However, it was unclear from the survey whether the OER material produced is being shared in a manner that enables others to easily locate the resources. For example, resources can be disseminated through repositories such as [The Orange Grove](#), Florida's educational repository of digital and open resources. The respondents' reported expectations for future use of open textbooks and other OER is a very encouraging outlook for the future use of open materials. However, the number of open textbooks available for high enrollment courses is still limited. One of the reasons for this shortage is the scarcity of support, both financial and time, for the development and maintenance of open textbooks.

The data from the current survey show that reported use of open textbooks and other OER has grown since the 2009 faculty and staff survey. However, the literature points out that faculty typically do not use every chapter in a commercial textbook (Downes, 2001), and survey respondents indicated a preference for using portions (i.e. chapters, units, modules) rather than whole open textbooks and courses. If open resources are offered in a manner by which they can be broken apart for greater modularity, their utility could be enhanced. Examples of such modular offerings are found at [InTech](#), which offers not only whole open textbooks, but also the individual chapters of each book. Open courseware can also be a valuable source of OER in modular format.

Faculty and staff indicated that their desire to reduce costs to students would be an important factor in their decision to use an open textbook. Because nearly half of the respondents did not know the price of the assigned textbook for all of their courses, increasing faculty awareness of the textbook price might indirectly help to mitigate students' textbook costs. However, some respondents may not have been involved in the textbook selection process for the textbooks they use, and thus may not be aware of the price before assigning the book. For example, in the 2009 faculty survey, only 52% of respondents indicated that they

select the textbooks for their courses in all cases. This highlights the importance of providing those who are in a position to select alternatives with information about open textbooks in their field of study as well as opportunities to examine open textbooks. In the next iteration of the survey, an effort will be made to clarify whether respondents select their textbooks.

Libraries can play an important role in providing access to textbooks for students who cannot afford them. Some libraries offer textbooks for students to check out, but many students and some faculty are unaware that they do. However, almost half of the respondents reported that their libraries either did not provide textbooks for checkout or were unaware of whether this service was provided to students. Both the financial burden of purchasing textbooks and the shelf space required for storing printed textbooks could prove to be problematic. However, one way in which this issue could be addressed is to encourage the collaboration between faculty, librarians, and instructional designers to determine which publishers would provide free, digital copies of the textbook to the library for checkout.

Digital Study Aids

A comparison of results from the student survey and the faculty and staff survey revealed both differences and similarities. The students perceived interactive practice questions, flash cards, and PowerPoint slide shows as more useful to support their learning than the faculty did. The faculty perceived video, animations, interactive ‘try it now’ activities and online study groups as more useful than the students perceived them. As an example, the University of Florida College of Mathematics authors developed videos explaining and illustrating points in the open textbooks, as well as problem sets, which are offered through WebAssign. The students and faculty did not significantly differ on their usefulness rankings of audio and online tutoring systems provided by the college (See Appendix, Section 20). The most commonly ranked study aids by both faculty and students for supporting student learning were interactive activities from which students can receive feedback on their performance. For most subject areas, it is essential for learners to test and improve their knowledge and skills through practice and feedback. Faculty value quality supplements to the textbook such as interactive homework and test items, and these ancillaries are important factors in determining a textbook’s adoption (Harley, Lawrence, Acord, & Dixon, 2010). When creating open textbooks, open courseware, or other OER, consideration might be given to the production of these ancillaries. Faculty who develop such activities, especially those coordinated with textbooks, could be encouraged to share them openly and widely by contributing them to repositories that can control user access to resources.

Sustaining Open Textbooks

Finding a sustainable source of funding for developing and maintaining open textbooks and other OER can be challenging but is critical for their continued use. Once created, additional funds need to be available to ensure currency and accuracy of textbooks, open courses, and OER. Private funding has been an excellent catalyst for development. For example, the Washington State Board of Community and Technical Colleges’ [Open Course Library](#) is developing and making available complete, openly licensed course materials for its 81 courses with highest enrollments. The Open Course Library is funded by the Washington State Legislature and the [Bill and Melinda Gates Foundation](#). [Saylor Foundation](#) is making courses

and entire programs of study available free to anyone. Although just getting underway, [OpenStax College](#), which is funded by several foundations and Rice University, shows great promise to be an excellent source of high quality open textbooks and study aids. However, the reliable resources required for developing more open resources, along with updating and maintaining existing ones for the long term, surpass what foundations can provide.

One approach to sustainability currently in use is to require a materials fee when an open textbook is used in a course. This type of open materials fee is collected at the University of Florida for updating and maintaining the calculus open textbook series and related ancillaries. Federal, state, and institutional sources seem to be strained for at least the near term; however, the states of Washington, Utah, and California have funded or are considering funding open textbook initiatives.

In addition to open textbooks, one potential means for dramatically reducing textbook cost is bulk digital licensing arrangements with publishers in which the institution charges the student a textbook fee. For example, Indiana University's [eTexts@IU](#) program has negotiated with several publishers to offer faculty the option of providing all students registered in the class access to digital textbooks through an eText fee at a lower cost than students would pay for the print version. To further enhance the value for students, their access to that textbook is maintained as long as they are enrolled at the institution. At the conclusion of Indiana's pilot program, 60% of the students participating reported preferring digital textbooks to print. Five other institutions have since replicated IU's pilot study.

Open textbooks, open courses, and OER hold the potential for addressing student costs. However, it is doubtful that OER will ever be able to address all of an institution's instructional resource needs. In addition, the support of commercial publishers appears to be largely untapped, but could be a viable resource for ancillaries that could supplement open textbooks. As can be seen with Inkling and other digital textbook providers, the textbook model is changing from providing a static PDF or HTML document to one that is both interactive and collaborative. This, coupled with the availability of new authoring tools and the ubiquity of mobile devices, suggests that the open textbook market would probably benefit from a free platform on which students can not only access their content, but also highlight, annotate, link to videos, engage in adaptive interactive exercises, share notes, and participate in collaborative and other social interactions. There are many future research studies needed to provide a clearer picture of how to sustain open textbooks and OER, encourage their use and authorship, evaluate their effectiveness in supporting student success, and identify how to implement engaging and collaborative features in open textbooks that will support student learning preferences.

Conclusion

To conclude, many opportunities exist to help to facilitate the reduction of textbook costs, whether through the development of open textbooks or negotiation with publishers for bulk licensing agreements. Institutions can be extremely diverse in their student demographics, skills, and knowledge. As more states are tying institutional funding to student completion rates, the benefits of developing or modifying open textbooks holds potential for addressing some of the unique institution needs that are specific its student population. Possible benefits include providing immediate access to course materials, addressing their diversity issues, improving completion rates, and lowering student costs. The high cost of textbooks is of concern because it is causing student to not purchase the required textbook, not register for a course, take fewer courses, and drop courses (FDLC, 2012, July). Libraries are one of the potential support systems that could be used by institutions to address the issue of students who have to delay purchase or fail to purchase a required textbook. However, open communication between faculty, librarians, and administrators is essential to negotiate effectively with publishers to enable free, seamless access to digital textbooks through institutional libraries. When the assigned textbook for a course is an open textbook, every student has access to the textbook from the first day of class.

This research has revealed that faculty perceive themselves as likely to use OER, but few have actually authored any type of OER. Both the OER literature and the findings from this study suggest that a deficiency of support, incentives, and rewards for authoring could be a barrier to authoring and updating open textbooks (Guntram, Geser, Salzburg, Research EduMedia Group, 2012). Promotion and tenure are important incentives for faculty research and publication. However, as evidenced by the findings, the consideration of authoring open textbooks and other OER as a criterion for tenure and promotion appears to be very limited in academia. Among the strategies that address some of these barriers are three that can be implemented at the state or institution level. Identifying potential authors to work collaboratively on open textbooks and employing public recognition and rewards, such as the University System of Ohio's (2012) Innovator Awards, are potential ways in which a state or an institution could increase both awareness and availability of open resources. A key means by which administrators can help bring open education development and adoption to their institutions is by promoting an environment of sharing, one that supports authorship, use, and acquisition of knowledge necessary to participate in an open education community. Another strategy is to promote the development of small discrete units (e.g., learning modules, assignments, chapters), which appear from the findings to meet both authoring and use preferences.

The business of open and commercial digital textbooks is rapidly changing, opening new possibilities for reducing costs while improving educational resources, and consequently, student success. Open textbooks represent an important student cost saving in higher education, but there are still many issues and questions that need to be addressed in future research. Sustainability issues and the impact of open textbooks and open courseware on learning will undoubtedly be major areas of research in the next decade.

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Appendix

Section 1: Demographics

Table A1

Descriptive Statistics for Participant Demographics

Variable	<i>n</i>	%
Position		
Full-time teaching faculty member	1,444	56.6
Part-time teaching faculty member	229	9.0
Non-teaching faculty member (e.g., research faculty)	48	1.9
Staff member (e.g., librarian, instructional designer)	118	4.6
Adjunct faculty member (i.e., temporary instructor)	383	15.0
Administrator	260	10.2
Other	60	2.4
Course Taught		
General Studies courses	755	29.6
Lower Division courses	1,287	50.5
Upper Division courses	861	33.8
Graduate courses	611	24.0
Do not teach	178	7.0
Criteria for Promotion/Tenure		
Creation of digital textbooks	121	8.3
Creation of digital monographs	103	7.1
Creation of other digital course materials (e.g., workbook, lab manual, video, interactive activity)	133	9.1
Creation of peer-reviewed digital journal articles	289	19.8
Creation of open textbooks	98	6.7
Creation of other open educational resources	116	8.0
Creation of open courseware	80	5.5
Don't know	663	45.4
None of the above	460	31.5

Section 2: Frequency of Participants' Teaching Discipline

Table A2

Frequency of Participants' Teaching Discipline

Discipline	<i>n</i>	%
Agriculture, Agriculture Operations, and Related Sciences	50	2.0
Architecture and Related Services	28	1.1
Area, Ethnic, Cultural, Gender and Group Studies	24	0.9
Biological and Biomedical Sciences	213	8.4
Business, Management, Marketing and Related Support services	221	8.7
Communication, Journalism, and Related Programs	139	5.5
Communications Technologies/Technicians and Support services	26	1.0
Computer and Information Sciences and Support services	131	5.1
Construction Trades	12	0.5
Education	204	8.0
Engineering	71	2.8
Engineering Technologies and Engineering Related Fields	34	1.3
English Language and Literature/Letters	243	9.5
Family and Consumer Sciences/Human Sciences	16	0.6
Foreign Languages, Literatures, and Linguistics	79	3.1
Health Professions and Related Programs	294	11.5
History	78	3.1
Homeland Security, Law Enforcement, Firefighting and Related Protective Services	30	1.2
Legal Professions and Studies	38	1.5
Liberal Arts and Sciences, General Studies and Humanities	207	8.1
Library Science	42	1.6
Mathematics and Statistics	235	9.2
Mechanic and Repair Technologies/Technicians	11	0.4
Multi/Interdisciplinary Studies	48	1.9
Natural Resources and Conservation	27	1.1
Parks, Recreation, Leisure and Fitness Studies	19	0.7
Personal and Culinary Services	20	0.8
Philosophy and Religious Studies	62	2.4
Physical Sciences	143	5.6
Precision Production	3	0.1
Psychology	101	4.0
Public Administration and Social Service Profession	37	1.5
Social Sciences	201	7.9
Theology and Religious Vocations	7	0.3
Transportation and Materials Moving	7	0.3
Visual and Performing Arts	89	3.5
Technology Education/Industrial Arts	36	1.4

Section 3: Developing Educational Resources

Table A3

Developing Open Educational Resources

Item	<i>n</i>	%
Developed or developing open educational resources		
Open textbook(s)	41	2.8
Open courseware	60	4.1
Other open educational resources	165	11.3
None of the above	1242	84.9

Note. *n* = 1,463.

Section 4: Reasons for Using Open Courseware

Table A4

Reasons for Using Open Courseware

Item	<i>n</i>	%
Reasons for using open courseware		
To use for my own courses	183	55.3
To adapt for use in my own courses	207	62.5
To prepare for teaching a course	155	50.0
To gain qualifications or boost my career	22	6.7
For self-education or self-improvement	139	42.0
Out of curiosity	108	32.6
Other	19	5.7

Note. *n* = 331.

Section 5: Open Textbook Experiences and Perceptions

Table A5

Descriptive Statistics for Open Textbook Experiences and Perceptions

Item	<i>n</i>	%
Familiarity with open textbooks		
I have never heard of open textbooks.	624	26.9
I have heard of open textbooks but never looked for any.	934	40.2
I've looked at some open textbooks.	518	22.3
I've use a part of or an entire open textbook in my course(s).	140	6.0
I do not assign textbooks.	74	3.2
Other	34	1.5
Experience with open courseware		
I have not heard of it before.	291	20.0
I have heard of it but have not examined any.	524	36.0
I have visited one or more open courseware sites but have not used the material.	312	21.4
I have used some open courseware.	307	21.1
I have used an entire open courseware.	22	1.5
Awareness of textbook prices before selecting and assigning textbooks		
All of the time	1213	52.2
Some of the time	631	27.2
Rarely	137	5.9
Never	71	3.1
Not applicable	272	11.7
Institutional library textbook(s) check-out access		
Yes, in print format	628	43.1
Yes, in digital format	4	0.3
Yes, in both print and digital formats	72	4.9
I don't know	331	22.7
No	375	25.8
No, I do not assign textbooks	46	3.2
Open educational resources have the potential to reduce students' educational costs.		
Strongly Disagree	82	5.6
Disagree	42	2.9
Neutral	328	22.5
Agree	617	42.4
Strongly Agree	387	26.6
Open educational resources have the potential to reduce course development costs.		
Strongly Disagree	153	10.5
Disagree	219	15.0
Neutral	544	37.4
Agree	374	25.7
Strongly Agree	166	11.4

Section 6: Use of OER

Table A6

Frequency of Open Educational Resources Use

Open Educational Resource	Never		In 1 or 2 Courses		In 3 or 4 Courses		In 5 or More Courses	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
A portion of an open textbook	1,131	77.7	244	16.8	41	2.8	40	2.7
All of an open textbook	1,336	91.8	78	5.4	21	1.4	21	1.4
Other open educational resources	721	49.5	410	28.2	155	10.6	170	11.7
A portion of an open courseware	1,047	71.9	271	18.6	82	5.6	56	3.8
An entire open courseware	1,358	93.3	63	4.3	18	1.2	17	1.2

Section 7: Value of Open Resources Compared to Commercial Publisher Resources

Table A7

Academic Value of Open Resources Compared to Commercial Publisher Resources

Open Educational Resource	More Valuable		Similar in Value		Less Valuable		Don't Know		Total	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Open textbooks	165	11.3	372	25.5	216	14.8	703	48.3	1,456	100.0
Other open educational resources	185	12.7	469	32.2	159	10.9	643	44.2	1,456	100.0
Open courseware	157	10.8	361	24.8	181	12.4	757	52.0	1,456	100.0

Section 8: Likelihood of Authoring and Using OER

Table A8

Likelihood of Authoring & Using Open Educational Resources

Open Educational Resource	Authoring Open Educational Resources										
	Very Likely		Somewhat Likely		Not at all Likely		Don't Know		Total		
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	
A portion of an open textbook	177	12.2	375	25.8	528	36.3	376	25.8	1,456	100.0	
All of an open textbook	85	5.8	204	14.0	800	54.9	367	25.2	1,456	100.0	
Other open educational resources	186	12.8	421	28.9	477	32.8	372	25.5	1,456	100.0	
A portion of an open courseware	126	8.7	378	26.0	545	37.4	407	28.0	1,456	100.0	
All of an open courseware	62	4.3	184	12.6	783	53.8	427	29.3	1,456	100.0	
Open Educational Resource	Using Open Educational Resources										
	A portion of an open textbook	447	30.7	615	42.2	168	11.5	226	15.5	1,456	100.0
	All of an open textbook	227	15.6	520	35.7	434	29.8	275	18.9	1,456	100.0
	Other open educational resources	475	32.6	588	40.4	153	10.5	240	16.5	1,456	100.0
	A portion of an open courseware	333	22.9	601	41.3	210	14.4	312	21.4	1,456	100.0
	All of an open courseware	171	11.7	440	30.2	496	34.1	349	24.0	1,456	100.0

Section 9: Factors in Choosing an Open Textbook

The faculty respondents were presented with 8 factors to consider when *choosing* an open textbook. The respondents were then asked to select the 5 most important factors from the list. Several descriptive statistics were calculated to assess these data. The *n* in Table A9 represents the number of people (out of 1,901) that selected a factor for their top-5 list of factors to consider. The data revealed the pertinence of the content to the objectives of a course (*n* = 1,658, 87.2%) and accuracy of spelling grammar and facts (*n* = 1,510, 79.4%) were the most common factors selected in the participants' top-5 list. Availability to access on multiple devices (*n* = 854, 44.9%) and other factors (*n* = 203, 10.7%) were the least common factors selected to the participants' top-5 list.

The other statistics calculated for these data were the median (i.e., center of ranking distribution) and mode (i.e., most common ranking). The median statistic represents the participants' median importance ranking among those who selected the factor for their top-5 list. The mode statistic represents the most common ranking for a factor among those who selected the factor for their top-5 list. Pertinence of the content to the objectives of a course was the most frequent factor selected, and was also the factor with the highest median importance ranking (median = 1.0). The pertinence factor also had a mode of 1.0, indicating that 1.0 (i.e., a top ranking) was the most common ranking for the factor. Accuracy of spelling, grammar and facts had a median importance ranking of 2.0 and a mode of 1.0. This indicates that a number 2 ranking best represented the center of the distribution, however, the most frequent ranking for accuracy of spelling, grammar and facts was 1.0 (top ranking). The availability to access on

multiple devices ($n = 854$, 44.9%) and other factors (203, 10.7%) were the least frequent factors selected to consider when choosing an open textbook.

Table A9

Five Most Important Factors for Choosing an Open Textbook

Factor	n	n top ranking	median	mode
Accuracy of spelling, grammar, and facts	1,510	434	2.0	1.0
Availability of ancillaries for instruction (e.g., PowerPoints, test banks)	1,366	93	4.0	4.0
Availability of digital resources for students (e.g., practice exercises, videos)	1,386	61	4.0	4.0
Pertinence of the content to the objectives of a course	1,658	948	1.0	1.0
Currency of information	1,475	239	2.0	2.0
Availability of a print version	943	45	4.0	5.0
Availability to access on multiple electronic devices	854	29	4.0	5.0
Other important factors	203	30	4.0	5.0

Note. $n = 1,901$.

Section 10: Characteristics that Determine Quality of an Open Textbook

The respondents were presented with 9 characteristics to consider when *determining the quality* of an open textbook. The respondents were then asked to select the 5 most important characteristics from the list. The descriptive statistics described above were calculated for these data. The n represents the number of people (out of 1,901) that selected a characteristic for their top-5, the median represents the center of the ranking distribution among those who selected a characteristic, and the mode represents the most common ranking among those who selected a characteristic (see Table A10).

Consistency of terminology and concepts ($n = 1,670$, 87.8%), currency of information ($n = 1,646$, 86.6%) and accuracy of spelling, grammar and facts ($n = 1,614$, 84.9%) were the most common characteristics selected to the participants' top-5 list. The median for all 3 of these characteristics was 2.0. This indicates that the middle of the ranking distribution was 2.0 (2nd most important ranking) for all 3 characteristics. The mode was 1.0 for accuracy of spelling, grammar and facts, and currency of information. This indicates that a top-ranking was the most common ranking for these characteristics. Consistency of information was selected to the top-5 list with more frequency than the other characteristics; however, the most common ranking among those who ranked consistency of information was a 2.0. The quality of the paper and binding ($n = 426$, 22.4%) and other characteristics ($n = 145$, 7.6%) were the least common characteristics selected to the participants' top-5 list.

Table A10***Five Most Important Characteristics for Determining the Quality of an Open Textbook***

Characteristic	<i>n</i>	median	<i>n</i> top ranking	mode
Accuracy of spelling, grammar, and facts	1,614	2.0	597	1.0
Consistency of terminology and concepts	1,670	2.0	316	2.0
Currency of information	1,646	2.0	515	1.0
Editorial review	916	4.0	41	4.0
Peer review and recommendation	1,391	4.0	235	4.0
Quality of paper and binding	426	5.0	2	5.0
Reputation of author(s)	1,039	4.0	106	5.0
Reputation of publisher	548	5.0	19	5.0
Other	145	4.0	48	5.0

Note. *n* = 1,901.

Section 11: Most Useful Digital Study Aids to Support Student Learning

The respondents were presented with 10 study aids to support student learning. The respondents were then asked to select the 5 most useful study aids from the list. The descriptive statistics described above were calculated for these data. Interactive practice questions (*n* = 1,292, 88.3%), video (*n* = 1,115, 76.2%), interactive ‘try it now’ activities (*n* = 1,086, 74.2%), and PowerPoint slide shows (*n* = 1,025, 70.1%) were the most common study aids selected to make the respondents’ top-5 list of useful study aids (see Table A11). Interactive practice questions and interactive ‘try it now’ activities had a median of 2.0 (i.e., 2nd most useful). The center of the ranking distribution was 3.0 for PowerPoint slides and video. A top ranking (mode = 1.0) was the most common ranking for interactive practice questions and interactive ‘try it now’ activities among those who selected these study aids to their top-5 list. Audio (*n* = 455, 31.1%), online tutoring systems provided by the college (*n* = 520, 35.5%) and other study aids (*n* = 94, 6.4%) were the least common study aids selected to make the participants’ top-5 list.

Table A11***Five Most Useful Digital Study Aids to Support Student Learning***

Study Aid	<i>n</i>	<i>n</i> top ranking	median	mode
Interactive practice questions	1,292	553	2.0	1.0
Flash cards	532	21	4.0	5.0
PowerPoint slide shows	1,025	215	3.0	3.0
Video	1,115	183	3.0	2.0
Audio	455	10	4.0	5.0
Animations	604	48	3.0	3.0
Interactive ‘try it now’ activities	1,086	299	2.0	1.0
Online study groups	557	33	4.0	5.0
Online tutoring system provided by the college	520	47	4.0	5.0
Other	94	47	1.5	1.0

Note. *n* = 1,463.

Section 12: Factors in Deciding to Use Open Textbooks

The respondents were presented with 11 factors to consider when making the *decision to use* an open textbook. The respondents were then asked to select the 5 most important factors from the list. The descriptive statistics indicated that currency of information ($n = 1,099$, 75.1%), desire to reduce costs to students ($n = 973$, 66.5%), accuracy of spelling, grammar, and facts ($n = 941$, 64.3%) and scope of coverage ($n = 880$, 60.2%) were the most common factors selected for the participants' top-5 list (see Table A12). The median for accuracy of spelling, grammar and facts and currency of information was 2.0, indicating the centers of these ranking distributions was a 2nd most important rating. Desire to reduce student costs and scope of coverage both had median of 3.0. Accuracy of spelling, grammar, and facts was the only frequently selected factor with a mode of 1.0. This indicates that a top ranking was the most common ranking among those who selected accuracy for their top-5 list. Recognition for reducing costs to students ($n = 309$, 21.1%) and other important factors ($n = 92$, 6.3%) were the least common factors selected to the participants' top-5 list.

Table A12

Five Most Important Factors for Decision to Use an Open Textbook

Factor	<i>n</i>	n top ranking	median	mode
Accuracy of spelling, grammar, and facts	941	315	2.0	1.0
Availability of supplementary materials (e.g., test banks)	832	77	3.0	5.0
Currency of information	1,099	313	2.0	2.0
Desire to reduce cost to students	973	214	3.0	3.0
Online availability	754	70	4.0	4.0
Publication date	394	15	4.0	4.0
Recognition for reducing costs to students	309	25	4.0	5.0
Scope of coverage	880	191	3.0	3.0
Support from administration to use open textbooks	344	43	4.0	5.0
Time to find, review, and select open textbooks	662	150	4.0	5.0
Other	92	43	2.0	1.0

Note. $n = 1,463$.

Section 13: Factors Influencing the Decision to Author an Open Textbook

The respondents were presented with 11 factors influencing their *decision to create* an open textbook. The respondents were then asked to rank the 5 most important factors from the list. Time to develop an open textbook ($n = 1,292$, 88.3%), support from administration ($n = 926$, 63.3%), assurance of professional editing ($n = 878$, 60.0%) and availability of co-authors ($n = 828$, 56.6%) were the most common factors selected for the participants' top-5 list of factors influencing their decision to create an open textbook (see Table A13). Time to develop an open textbook had the best median ranking (1.0), was selected with the most frequency, and a top-ranking was the most common ranking among those who selected time as a top-5 factor.

The other factors selected to the participants' top-5 list with relative frequency had median rankings of 3.0. Recognition of efforts toward tenure ($n = 277$, 18.9%) and other important factors ($n = 96$, 6.6%) were the least common factors selected to the participants' top-5 list of factors influencing their decision to create an open textbook.

Table A13

Five Most Important Factors Influencing Decision to Create an Open Textbook

Factor	<i>n</i>	<i>n</i> top ranking	median	mode
Time to develop an open textbook	1,292	910	1.0	1.0
Availability of other authors to co-develop a textbook	828	47	3.0	2.0
Assurance that the textbook would be peer-reviewed	708	55	3.0	3.0
Assurance that the textbook would be professionally edited	878	41	3.0	4.0
Availability of review criteria to authors	332	13	4.0	5.0
Availability of supplementary materials	604	22	4.0	4.0
Recognition for efforts toward promotion	491	51	3.0	5.0
Recognition for efforts toward tenure	277	36	4.0	5.0
Support from administration (e.g., financial support or release time)	926	157	3.0	3.0
Desire to reduce cost to students	677	85	4.0	5.0
Other	96	33	3.0	1.0

Note. $n = 1,463$.

Section 14: Most Viable Open Textbook Funding Options

The respondents were presented with 7 potential open textbook funding possibilities. The respondents were then asked to select the 6 most viable funding possibilities from the list.

Table A14

Six Most Viable Open Textbook Funding Possibilities

Funding Possibility	<i>n</i>	<i>n</i> top ranking	median	mode
Privately funded	1,336	314	4.0	1.0
Federally funded	1,352	202	3.0	5.0
State funded	1,373	159	3.0	2.0
Institution funded	1,364	290	3.0	3.0
Student funded by a fee assessed when an open textbook is used in a course	1,309	311	3.0	1.0
Student funded by a technology fee assessed to all students	1,241	123	3.0	6.0
Other	107	32	5.0	6.0

Note. $n = 1,463$.

Section 15: Research Question 1: Factors in Choosing an Open Textbook by Institution

Type

Research Question 1. Are there statistically significant differences between university faculty and college faculty on their importance rankings of the following 8 factors to consider when *choosing* an open textbook: accuracy of spelling, grammar, and facts; availability of ancillaries for instruction (e.g., PowerPoints, test banks); availability of digital resources for students (e.g., practice exercises, videos); pertinence of the content to the objectives of a course; currency of information; availability of a print version; availability to access on multiple electronic devices; other important factors?

H₀: There will not be significant differences between the university faculty and college faculty on their importance rankings of the 8 factors to consider when choosing an open textbook.

H_A: There will be significant differences between the university faculty and college faculty on their importance rankings of the 8 factors to consider when choosing an open textbook.

Several Mann-Whitney tests were conducted to determine if there were significant differences between the university faculty and college faculty on their rankings of the 8 factors to consider when choosing an open textbook. The Mann-Whitney test is the non-parametric equivalent of the independent samples t-test. It is being utilized in this case because the dependent variable was ordinal scaled. Participants ranked 5 of the 8 factors, and the ranking (1 = most important to 5 = least important) of the factor represented the dependent variable for each test.

The descriptive statistics and Mann-Whitney statistics are listed in Tables A15a and A15b, respectively. The tests revealed significant differences between the college faculty and university faculty on the following importance rankings: availability of ancillaries for instruction (e.g., PowerPoints, test banks), availability of digital resources for students (e.g., practice exercises, videos), pertinence of the content to the objectives of a course and currency of information.

The university faculty ranked availability of ancillaries and availability of digital resources for students significantly higher (i.e., less important) than the college faculty, $U = 204,014.50$, $p < .01$ and $U = 214,562.00$, $p < .01$, respectively. However, the college faculty ranked pertinence of the content to the objective of a course and currency of information significantly higher (i.e., less important) than the university faculty, $U = 319,820.50$, $p < .05$ and $U = 254,402.00$, $p < .05$, respectively. These data suggest that the college faculty may be placing more importance on those resources, which are not readily available at their institutions.

Table A15a**Descriptive Statistics for Research Question 1**

Factor	Education Institution	<i>n</i>	Median	Mean Rank	Sum of Ranks
Accuracy of spelling, grammar, and facts	College	837	2.0	746.77	625,047.50
	University	673	2.0	766.36	515,757.50
	Total	1,510	2.0		
Availability of ancillaries for instruction (e.g., PowerPoints, test banks)	College	774	4.0	651.08	503,939.50
	University	592	4.0	725.88	429,721.50
	Total	1,366	4.0		
Availability of digital resources for students (e.g., practice exercises, videos)	College	780	4.0	665.58	519,152.00
	University	606	4.0	729.44	442,039.00
	Total	1,386	4.0		
Pertinence of the content to the objectives of a course	College	914	1.0	851.59	778,350.50
	University	744	1.0	802.37	596,960.50
	Total	1,658	1.0		
Currency of information	College	787	3.0	758.74	597,132.00
	University	688	2.0	714.27	491,418.00
	Total	1,475	2.0		
Availability of a print version	College	521	4.0	472.36	246,100.00
	University	422	4.0	471.55	198,996.00
	Total	943	4.0		
Availability to access on multiple electronic devices	College	493	4.0	435.61	214,756.50
	University	361	4.0	416.42	150,328.50
	Total	854	4.0		
Other important factors	College	109	5.0	104.58	11,399.00
	University	94	4.0	99.01	9,307.00
	Total	203	4.0		

Note. Significant differences in boldface.

Table A15b**Mann-Whitney Statistics for Research Question 1**

Factor	Mann-Whitney <i>U</i>	<i>z</i>	Sig.
Accuracy of spelling, grammar, and facts	274,344.50	-0.89	.372
Availability of ancillaries for instruction (e.g., PowerPoints, test banks)	204,014.50	-3.58	.000
Availability of digital resources for students (e.g., practice exercises, videos)	214,562.00	-3.05	.002
Pertinence of the content to the objectives of a course	319,820.50	-2.33	.020
Currency of information	254,402.00	-2.07	.038
Availability of a print version	109,743.00	-0.05	.962
Availability to access on multiple electronic devices	84,987.50	-1.20	.229
Other important factors	4,842.00	-0.72	.473

Section 16: Research Question 2: Use of OER by Institution Type

Research Question 2. Are there statistically significant differences between university faculty and college faculty on their course usage of the following 5 open educational resources: a portion of an open textbook, all of an open textbook, other open educational resources, a portion of an open courseware and an entire open courseware?

H_0 : There will not be significant differences between the university faculty and college faculty on their course usage of the 5 open educational resources.

H_A : There will be significant differences between the university faculty and college faculty on their course usage of the 5 open educational resources.

Several Mann-Whitney tests were conducted to determine if there were significant differences between the university faculty and college faculty on their course use of the 5 open educational resources. The Mann-Whitney is being utilized in this case because the dependent variable was ordinal scaled. Participants indicated their use of all 5 open educational resources. The faculty use (1 = never, 2 = in 1 or 2 courses, 3 = in 3 or 4 courses, 4 = in 5 or more courses) of each open educational resource represented the dependent variable for each test.

The descriptive statistics and Mann-Whitney statistics are listed in Tables A16a and A16b, respectively. The tests revealed that the college faculty used a portion of an open courseware significantly more than their university faculty counterparts, $U = 248,907.00$, $p < .05$. The tests failed to reveal significant differences between the college faculty and university faculty on their use of the remaining open educational resources.

Table A16a

Descriptive Statistics for Research Question 2

Open Educational Resource	Education Institution	<i>n</i>	Median	Mean Rank	Sum of Ranks
A portion of an open textbook	College	803	1.0	729.71	585,958.00
	University	653	1.0	727.01	474,738.00
	Total	1456	1.0		
All of an open textbook	College	803	1.0	728.46	584,957.00
	University	653	1.0	728.54	475,739.00
	Total	1456	1.0		
Other open educational resources	College	803	2.0	738.78	593,240.50
	University	653	1.0	715.86	467,455.50
	Total	1456	2.0		
A portion of an open courseware	College	803	1.0	745.03	598,258.00
	University	653	1.0	708.17	462,438.00
	Total	1456	1.0		
An entire open courseware	College	803	1.0	731.41	587,319.00
	University	653	1.0	724.93	473,377.00
	Total	1456	1.0		

Note. Significant differences in boldface.

Table A16b

Mann-Whitney Statistics for Research Question 1

Open Educational Resource	Mann-Whitney <i>U</i>	<i>z</i>	Sig.
A portion of an open textbook	261,207.00	-0.17	.867
All of an open textbook	262,151.00	-0.01	.994
Other open educational resources	253,924.50	-1.12	.263
A portion of an open courseware	248,907.00	-2.11	.035
An entire open courseware	259,846.00	-0.67	.501

Section 17: Research Question 3: Usefulness of Study Aids by Institution Type

Research Question 3. Are there statistically significant differences between university faculty and college faculty on their usefulness rankings of the following 9 study aids to support student learning: Interactive practice questions; flash cards; PowerPoint slide shows; video; audio; animations; interactive ‘try it now’ activities; online study groups; online tutoring system provided by the college; other?

H_0 : There will not be significant differences between the university faculty and college faculty on their usefulness rankings of the 9 study aids to support student learning.

H_A : There will be significant differences between the university faculty and college faculty on their usefulness rankings of the 9 study aids to support student learning.

Several Mann-Whitney tests were conducted to determine if there were significant differences between the university faculty and college faculty on their usefulness rankings of the 9 study aids to support student learning. The Mann-Whitney is being utilized in this case because the dependent variable was ordinal scaled. Participants indicated their usefulness rank for 5 of the 9 study aids. The usefulness rank (1 = most useful to 5 = least useful) of each study aid represented the dependent variable for each test.

The descriptive statistics and Mann-Whitney statistics are listed in Tables A17a and A17b, respectively. The tests revealed that the college faculty ranked online study groups significantly higher (i.e., less useful) than the university faculty, $U = 34,714.50$, $p < .05$. The tests failed to reveal significant differences between the college faculty and university faculty on their rankings of the remaining study aids.

Table A17a**Descriptive Statistics for Research Question 3**

Study Aid	Education Institution	<i>n</i>	Median	Mean Rank	Sum of Ranks
Interactive practice questions	College	709	2.0	642.44	455,486.50
	University	583	2.0	651.44	379,791.50
	Total	1,292	2.0		
Flash cards	College	298	4.0	262.86	78,331.00
	University	234	4.0	271.14	63,447.00
	Total	532	4.0		
PowerPoint slide shows	College	576	3.0	514.88	296,573.50
	University	449	3.0	510.58	229,251.50
	Total	1,025	3.0		
Video	College	630	3.0	565.36	356,175.50
	University	485	3.0	548.44	265,994.50
	Total	1,115	3.0		
Audio	College	249	4.0	227.14	56,557.50
	University	206	4.0	229.04	47,182.50
	Total	455	4.0		
Animations	College	340	4.0	302.25	102,766.00
	University	264	3.0	302.82	79,944.00
	Total	604	3.0		
Interactive 'try it now' activities	College	595	2.0	540.34	321,502.00
	University	491	2.0	547.33	268,739.00
	Total	1,086	2.0		
Online study groups	College	283	4.0	293.33	83,013.50
	University	274	4.0	264.20	72,389.50
	Total	557	4.0		
Online tutoring system provided by the college	College	288	4.0	252.13	72,613.50
	University	232	4.0	270.89	62,846.50
	Total	520	4.0		

Note. Significant differences in boldface; *n* = 1,463.

Table A17b***Mann-Whitney Statistics for Research Question 3***

Study Aid	Mann-Whitney <i>U</i>	<i>z</i>	Sig.
Interactive practice questions	203,791.50	-0.45	.650
Flash cards	33,780.00	-0.64	.520
PowerPoint slide shows	128,226.50	-0.24	.814
Video	148,139.50	-0.89	.373
Audio	25,432.50	-0.16	.873
Animations	44,796.00	-0.04	.968
Interactive 'try it now' activities	144,192.00	-0.38	.708
Online study groups	34,714.50	-2.23	.025
Online tutoring system provided by the college	30,997.50	-1.46	.143

Section 18: Research Question 4: Decision Factors by Institution Type

Research Question 4. Are there statistically significant differences between university faculty and college faculty on their importance rankings of the following 10 factors influencing their potential decision to *create* an open textbook: time to develop open a textbook; availability of other authors to co-develop a textbook; assurance that the textbook would be peer-reviewed; assurance that the textbook would be professionally edited; availability of review criteria to authors; availability of supplementary materials; recognition for efforts toward promotion; recognition for efforts toward tenure; support from administration (e.g., financial support or release time); desire to reduce cost to students.

H_0 : There will not be significant differences between the university faculty and college faculty on their importance rankings of the 10 factors influencing their potential decision to create an open textbook.

H_A : There will be significant differences between the university faculty and college faculty on their importance rankings of the 10 factors influencing their potential decision to create an open textbook.

Several Mann-Whitney tests were conducted to determine if there were significant differences between the university faculty and college faculty on importance rankings of the 10 factors influencing their potential decision to create an open textbook. The Mann-Whitney is being utilized in this case because the dependent variable was ordinal scaled. Participants indicated their importance rank for 5 of the 10 factors. The importance rank (1 = most important to 5 = least important) of each factor represented the dependent variable for each test.

The descriptive statistics and Mann-Whitney statistics are listed in Tables A18a and A18b, respectively. The tests revealed significant differences between the college faculty and university faculty on 3 of the 10 factors: recognition for efforts toward promotion, recognition for efforts toward tenure and desire to reduce costs to students. The college faculty ranked

recognition for efforts toward promotion and recognition for efforts toward tenure significantly higher (i.e., less important) than the university faculty, $U = 23,757.50$, $p < .01$ and $U = 7,567.00$, $p < .01$, respectively. The university faculty ranked desire to reduce cost to students significantly higher (i.e., less important) than the college faculty, $U = 44,930.00$, $p < .05$.

Table A18a

Descriptive Statistics for Research Question 4

Open Educational Resource	Education Institution	<i>n</i>	Median	Mean Rank	Sum of Ranks
Time to develop open a textbook	College	728	1.0	638.23	464,631.00
	University	564	1.0	657.18	370,647.00
	Total	1292	1.0		
Availability of other authors to co-develop a textbook	College	449	3.0	414.44	186,085.00
	University	379	2.0	414.57	157,121.00
	Total	828	3.0		
Assurance that the textbook would be peer-reviewed	College	385	3.0	361.82	139,300.00
	University	323	3.0	345.78	111,686.00
	Total	708	3.0		
Assurance that the textbook would be professionally edited	College	479	3.0	438.84	210,206.50
	University	399	3.0	440.29	175,674.50
	Total	878	3.0		
Availability of review criteria to authors	College	194	4.0	166.19	32,241.50
	University	138	4.0	166.93	23,036.50
	Total	332	4.0		
Availability of supplementary materials	College	377	4.0	300.59	113,324.00
	University	227	4.0	305.67	69,386.00
	Total	604	4.0		
Recognition for efforts toward promotion	College	205	4.0	273.11	55,987.50
	University	286	3.0	226.57	64,798.50
	Total	491	3.0		
Recognition for efforts toward tenure	College	127	4.0	154.42	19,611.00
	University	150	3.0	125.95	18,892.00
	Total	277	4.0		
Support from administration (e.g., financial support or release time)	College	510	3.0	458.28	233,722.00
	University	416	3.0	469.90	195,479.00
	Total	926	3.0		
Desire to reduce cost to students	College	426	3.0	318.97	135,881.00
	University	251	4.0	373.00	93,622.00
	Total	677	4.0		

Note. Significant differences in boldface.

Table A18b***Mann-Whitney Statistics for Research Question 4***

Open Educational Resource	Mann-Whitney <i>U</i>	<i>z</i>	Sig.
Time to develop open a textbook	199,275.00	-1.13	.261
Availability of other authors to co-develop a textbook	85,060.00	-0.01	.994
Assurance that the textbook would be peer-reviewed	59,360.00	-1.07	.284
Assurance that the textbook would be professionally edited	95,246.50	-0.09	.931
Availability of review criteria to authors	13,326.50	-0.07	.943
Availability of supplementary materials	42,071.00	-0.36	.720
Recognition for efforts toward promotion	23,757.50	-3.67	.000
Recognition for efforts toward tenure	7,567.00	-3.04	.002
Support from administration (e.g., financial support or release time)	103,417.00	-0.67	.502
Desire to reduce cost to students	44,930.00	-3.57	.000

Section 19: Research Question 5: Promotion and Tenure Considerations by Institution

Type

Research Question 5. Are there statistically significant differences between university faculty and college faculty on the following 7 factors their institution considers for promotion of tenure: creation of digital textbooks; creation of digital monographs; creation of other digital course materials (e.g., workbook, lab manual, video, interactive activity); creation of peer-reviewed digital journal articles; creation of open textbooks; creation of other open educational resources; creation of open courseware?

H₀: There will not be significant differences between the university faculty and college faculty on the factors their institution considers for promotion of tenure.

H_A: There will be significant differences between the university faculty and college faculty on the factors their institution considers for promotion of tenure.

Several chi-squares tests of independence were conducted to determine if there was a significant difference between the university faculty and college faculty on the factors their institution considers for promotion. The chi-square test of independence is a non-parametric measure of association between 2 categorical (i.e., nominal scaled) variables. The observed and expected.

A chi-square test of independence was conducted to determine if there was a significant relationship between the participants' gender and whether they agreed to transfer to a mental health court (yes vs. no). The observed and expected frequencies for each test are listed in Table A19a. The chi-square statistics are listed in Table A19b. The chi-square tests revealed significant differences between the university faculty and college faculty on the following factors that are considered for promotion or tenure: creation of digital textbooks, creation of digital monographs, and creation of peer-reviewed digital journal articles.

The university faculty (6.7%) were more likely than the college faculty (4.0%) to work at an institution that considered the creation of digital textbooks for promotion/tenure, $\chi^2(1) = 8.61, p < .01$. The university faculty (5.9%) were also more likely than the college faculty (3.2%) to work at an institution that considered the creation of digital monographs for promotion/tenure, $\chi^2(1) = 9.78, p < .01$. However, the overall likelihood that an institution considered the creation of digital textbooks or digital monographs was relatively small despite these statistical differences. A larger difference was found between the university faculty (18.6%) and college faculty (7.4%) in regards to working at an institution that considered the creation of peer-reviewed digital journal articles, $\chi^2(1) = 67.44, p < .01$.

Table A19a

Observed and Expected Frequencies for Research Question 5

Factor for Promotion/Tenure			Educational Institution		Total
			College	University	
Creation of digital textbooks	Yes	Observed	53	68	121
		Expected	68.6	52.4	121.0
	No	Observed	1280	951	2231
		Expected	1264.4	966.6	2231.0
Creation of digital monographs	Yes	Observed	43	60	103
		Expected	58.4	44.6	103.0
	No	Observed	1290	959	2249
		Expected	1274.6	974.4	2249.0
Other digital course materials	Yes	Observed	71	62	133
		Expected	75.4	57.6	133.0
	No	Observed	1262	957	2219
		Expected	1257.6	961.4	2219.0
Creation of peer-reviewed digital journal articles	Yes	Observed	99	190	289
		Expected	163.8	125.2	289.0
	No	Observed	1234	829	2063
		Expected	1169.2	893.8	2063.0
Creation of open textbooks	Yes	Observed	47	51	98
		Expected	55.5	42.5	98.0
	No	Observed	1286	968	2254
		Expected	1277.5	976.5	2254.0
Other open educational resources	Yes	Observed	66	50	116
		Expected	65.7	50.3	116.0
	No	Observed	1267	969	2236
		Expected	1267.3	968.7	2236.0
Creation of open courseware	Yes	Observed	39	41	80
		Expected	45.3	34.7	80.0
	No	Observed	1294	978	2272
		Expected	1287.7	984.3	2272.0

Note. Significant differences in boldface.

Table A19b***Chi-Squares for Research Question 5***

Factor	Pearson Chi-Square	df	Sig.
Creation of digital textbooks	8.61	1	.003
Creation of digital monographs	9.78	1	.002
Creation of other digital course materials	0.62	1	.430
Creation of peer-reviewed digital journal articles	67.44	1	.000
Creation of open textbooks	3.16	1	.075
Creation of other open educational resources	0.00	1	.967
Creation of open courseware	2.12	1	.146

Section 20: Research Question 6: Study Aid Usefulness by Group

Research Question 6. Are there statistically significant differences between the faculty and students on their usefulness rankings of the following study aids to support student learning: interactive practice questions, flash cards, PowerPoint slides, video, audio, animations, interactive ‘try it now’ activities, online study groups, online tutoring system provided by the college?

H₀: There will not be significant differences between the faculty and students on their usefulness rankings.

H_A: There will be significant differences between the faculty and students on their usefulness rankings.

Several Mann-Whitney tests were conducted to determine if there were significant differences between the faculty and students on their usefulness rankings of the study aids. The descriptive statistics and Mann-Whitney statistics are listed in Tables A20a and A20b, respectively. The tests revealed significant differences on the usefulness rankings for 7 of 9 study aids. The students perceived interactive practice questions, flash cards and PowerPoint slide shows as *more useful* than the faculty. The faculty perceived video, animations, interactive ‘try it now’ activities and online study groups as *more useful* than the students. The students and faculty did not significantly differ on their usefulness rankings of audio and online tutoring systems provided by the college.

Table A20a***Descriptive Statistics for Study Aids Rankings by Group***

Study Aid	Group	<i>n</i>	Median	Mean Rank	Sum of Ranks
Interactive practice questions	Faculty	1,292	2.0	7,470.43	9,651,802
	Student	12,733	2.0	6,966.58	88,705,523
	Total	14,025	2.0		
Flash cards	Faculty	532	4.0	7,117.79	3,786,663
	Student	9,780	3.0	5,049.81	49,387,165
	Total	10,312	3.0		
PowerPoint slide shows	Faculty	1,025	3.0	6,268.46	6,425,167
	Student	10,704	3.0	5,826.37	62,365,417
	Total	11,729	3.0		
Video	Faculty	1,115	3.0	4,654.90	5,190,208
	Student	9,591	3.0	5,434.72	52,124,363
	Total	10,706	3.0		
Audio	Faculty	455	4.0	2,635.19	1,199,011
	Student	5,071	4.0	2,775.01	14,072,090
	Total	5,526	4.0		
Animations	Faculty	604	3.0	2,707.42	1,635,280
	Student	5,556	4.0	3,121.06	17,340,600
	Total	6,160	4.0		
Interactive 'try it now' activities	Faculty	1,086	2.0	3,953.76	4,293,780
	Student	8,445	3.0	4,870.45	41,130,966
	Total	9,531	3.0		
Online study groups	Faculty	557	4.0	1,816.16	1,011,603.50
	Student	3,618	5.0	2,129.85	7,705,796.50
	Total	4,175	4.0		
Online tutoring system provided by the college	Faculty	520	4.0	2,325.17	1,209,090.50
	Student	4,190	4.0	2,359.26	9,885,314.50
	Total	4,710	4.0		

Table 20b***Mann-Whitney Statistics***

Open Educational Resource	Mann-Whitney <i>U</i>	<i>z</i>	Sig.
Interactive practice questions	7,634,512.00	-4.56	.000
Flash cards	1,558,075.00	-16.00	.000
PowerPoint slide shows	5,072,257.50	-4.09	.000
Video	4,568,038.00	-8.18	.000
Audio	1,095,271.00	-1.87	.061
Animations	1,452,570.00	-5.61	.000
Interactive 'try it now' activities	3,703,539.00	-10.56	.000
Online study groups	856,200.50	-6.18	.000
Online tutoring system provided by the college	1,073,630.50	-0.56	.576



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