

# Performance Audit Report

## NORTH DAKOTA UNIVERSITY SYSTEM OPEN EDUCATIONAL RESOURCES

Report No. NP-007-17

September 4, 2018

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STATE AUDITOR**

**Office of the State Auditor  
Division of NDUS Performance Audit**

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## *Transmittal Letter*

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Sept. 4, 2018

State Board of Higher Education  
Members of the North Dakota Legislative Assembly

We are pleased to submit this performance audit. The subject matter of this audit included certain aspects of the utilization of open educational resources within the North Dakota University System.

We conducted this audit under the authority granted within North Dakota Century Code Section 54-10-30. Included in the report are the audit scope and objectives, findings and recommendations, and management responses.

Craig Hashbarger, CPA, CIA, CFE was the audit manager. Inquiries or comments relating to this audit may be directed to the audit manager by calling (701) 239-7274. We wish to express our appreciation to the staff and management of North Dakota University System for the courtesy, cooperation, and assistance they provided to us during this audit.

Respectfully submitted,

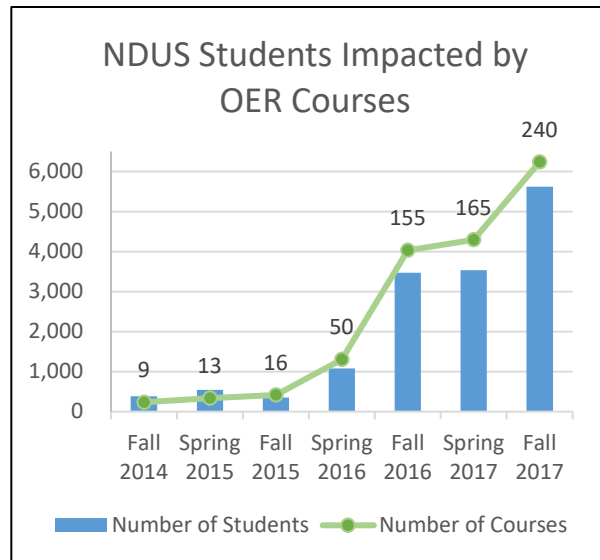
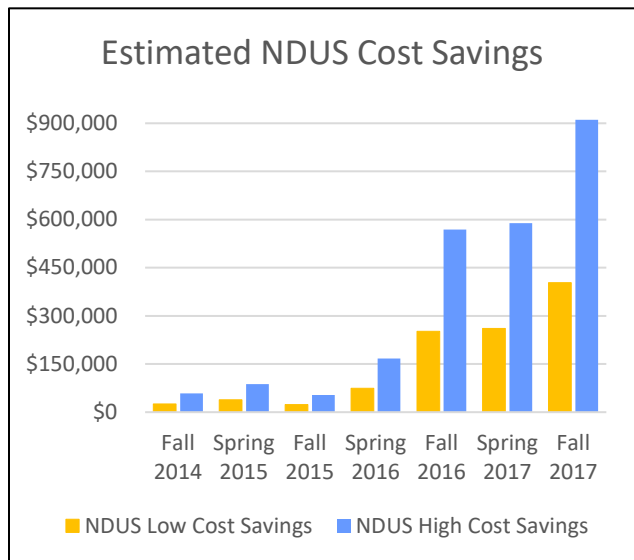
/S/

Joshua C. Gallion  
State Auditor

# Report Highlights

## Textbook Cost Savings

The North Dakota University System (NDUS) Open Educational Resources (OER) initiative has impacted at least 14,994 students in 648 courses and saved students an estimated \$1.1 million to \$2.4 million.



## Pros and Cons

While OER has demonstrated substantial cost savings for students and other non-financial benefits, it is not necessarily a viable solution in all circumstances. OER are currently limited for certain academic areas of study and lack the same extent of supplementary materials. Also, faculty expressed concerns regarding the consistency of quality of OER.

## Barriers and Incentives

Barriers exist which could limit the ability of NDUS to sustain its OER initiative. We have identified incentives which can help overcome those barriers and sustain or expand OER within the NDUS.

### BARRIERS

- Time & Effort to Implement
- Lack of OER Awareness
- Complexity of OER

### INCENTIVES

- Faculty Stipends
- Additional Release Time
- NDUS OER Portal
- OER Summits
- System-Level Dedicated Staff
- Expertise & Support from Librarians
- Training & Knowledge Sharing

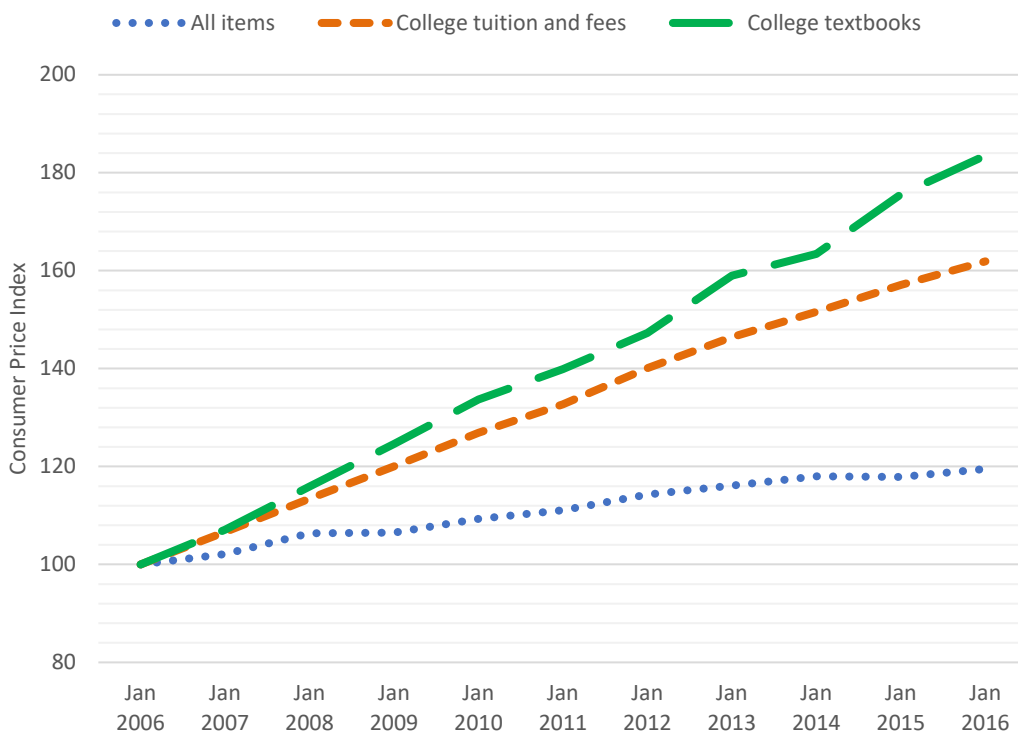
# Background Information

## Cost of Educational Materials

Textbook costs represent a significant component of the cost of higher education. According to the College Board's Annual Survey of Colleges, the average estimated cost of books and supplies in the 2017-18 school year for a two-year and four-year institution was \$1,420 and \$1,250, respectively. Those amounts represented an additional cost to students of approximately 40% and 13% of tuition for a two-year and four-year education, respectively (The College Board, 2017).

The U.S. Bureau of Labor Statistics data indicates college textbook costs have increased 88% between January 2006 and July 2016. This exceeds the overall cost increase in college tuition and fees (63%) and the overall Consumer Price Index of all items (21%) during the same period (U.S. Bureau of Labor Statistics, 2016).

Chart 1: Consumer Price Index for Tuition and Textbooks



Source: U.S. Bureau of Labor Statistics, 2016

## ***Open Educational Resources Defined***

The Hewlett Foundation, an organization supportive of OER, defines Open Educational Resources as:

Teaching, learning and research materials in any medium – digital or otherwise – that reside in the public domain or have been released under an open license that permits no-cost access, use, adaptation and redistribution by others with no or limited restrictions. (Hewlett Foundation, n.d.)

A key element of OER is that it either resides in the public domain or has been released under an open license.

It is important to note OER takes many forms and can be used to supplement, rather than replace traditional course materials. In our testing of potential OER courses, interviews and other audit procedures, we identified numerous courses in which OER was used in addition to traditional materials. The use of OER as a supplement, rather than a replacement for traditional materials either enhanced the educational experience, reduced the direct cost to the student, or both. These instances deserve recognition; however, they are not reflected in the direct cost savings in Objective 1. We also noted instances in which faculty utilized internally generated materials, such as lecture notes created by the faculty themselves, thereby saving students the cost of purchasing materials, but which did not meet the definition of OER; those instances, too, are not reflected in our reported results.

## ***North Dakota University System's OER Initiative***

In response to the increasing cost of textbooks, beginning in 2013 the North Dakota Legislature and NDUS explored the concept of OER to reduce textbook costs for students. In the 2013 Legislative Session, the state legislature passed a resolution to research OER. In March 2013, an OER working group comprised of representatives from across NDUS issued a white paper which encouraged use of OER and encouraged NDUS and its institutions to “seek funding for the system to reward faculty who...adopt an open source textbook”; while maximizing faculty academic freedom by “not requiring the use of open textbooks” (North Dakota University System Workgroup on Open Textbooks, 2013). In October 2014, the State Board of Higher Education expressed its support for OER in adopting its strategic plan, including a strategy to “increase the use of open educational resources” (State Board of Higher Education, 2017).

In the 2015 Legislative Session, the legislature appropriated \$110,000 of funding for “open education resources training” (the amount was reduced to \$107,250 by the 2016 allotment). According to NDUS grant reports, approximately \$30,000 was used for “system-wide faculty training and workshops,” with the remaining approximately \$77,000 being disbursed as institution-level grants. The “system-wide faculty training and workshops” consisted largely of two system-wide conferences, one held at Valley City State University in October 2015, and another in October 2016 at University of North Dakota’s campus. The institution-level grants were awarded in two rounds, the first awarded April 2016 and the second in December 2016. They were disbursed in the form of individual grants based on proposals submitted by the institutions, and generally were used to offer stipends to faculty as an incentive to adopt OER.

The institution-level funds were awarded as follows:

- University of North Dakota – 7 grants, \$47,640
- Valley City State University – 1 grant, \$10,000
- North Dakota State College of Science – 1 grant, \$9,910
- Mayville State University – 1 grant, \$8,500
- Lake Region State College – 1 grant, \$1,500

We did not specifically evaluate the individual results of each underlying grant; however, in our first objective we reported on the extent of OER use prior to the OER initiative which will demonstrate the extent of use of OER both before and after the NDUS OER initiative was launched.

The 11 colleges and universities in the NDUS, along with the abbreviations that will be used throughout this report, are as follows:

- Bismarck State College (BSC)
- Dakota College at Bottineau (DCB)
- Dickinson State University (DSU)
- Lake Region State College (LRSC)
- Mayville State University (MaSU)
- Minot State University (MiSU)
- North Dakota State College of Science (NDSCS)
- North Dakota State University (NDSU)
- University of North Dakota (UND)
- Valley City State University (VCSU)
- Williston State College (WSC)



# Audit Results – Objective 1

## Statement of Objective and Conclusion

The first objective of our audit was to answer the following question:

- To what extent has the North Dakota University System adopted open educational resources, and what is the resulting direct financial impact on students?

We identified the NDUS is utilizing OER to some extent at all 11 institutions, in at least 648 courses and impacting a minimum of 14,994 students. The direct cost savings to students, for courses which exclusively utilized OER without requiring a purchased textbook, ranged from \$1.1 million to \$2.4 million.

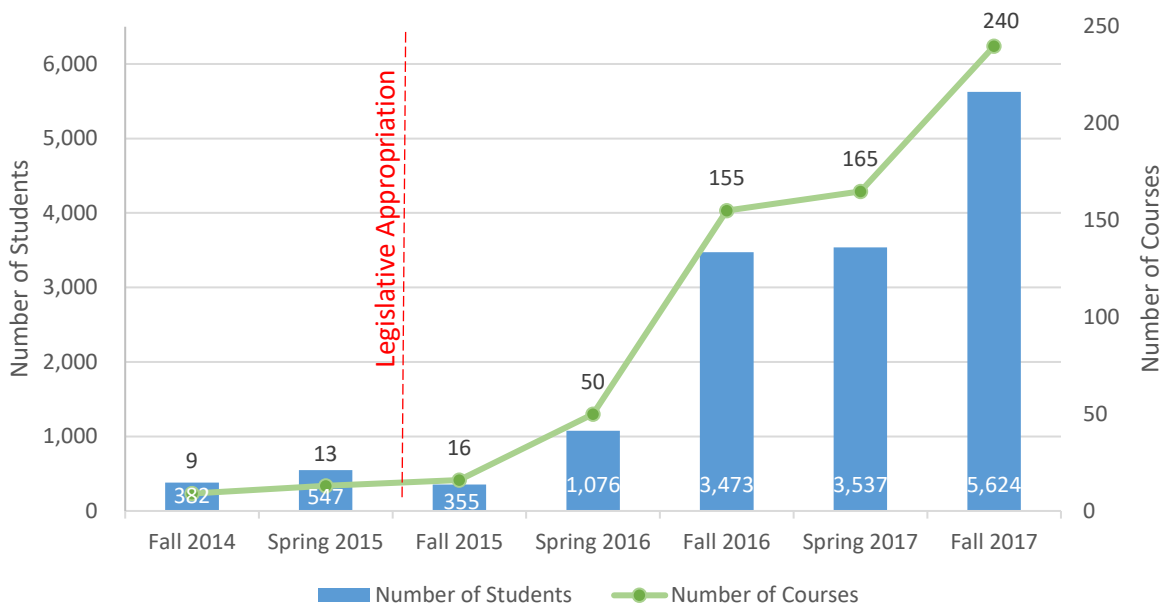
## Methodologies, Findings, Recommendations, and Responses

### Number of Courses and Students Impacted

To identify the number of students impacted, we obtained a listing from management of each institution of all known sections of courses which exclusively used OER starting with the Fall 2014 semester and ending in the Fall 2017 semester (summer semesters were excluded due to much lower enrollment and impact). We then tested the accuracy of the OER listing by obtaining and reviewing the course syllabus for selected sections.

We calculated the enrollment of these courses from reports we generated from Peoplesoft/Campus Solutions. As previously noted, for purposes of this analysis, we included only courses that used OER materials exclusively (that is, if a course partially utilized OER but also required a purchased textbook, it was excluded from these results).

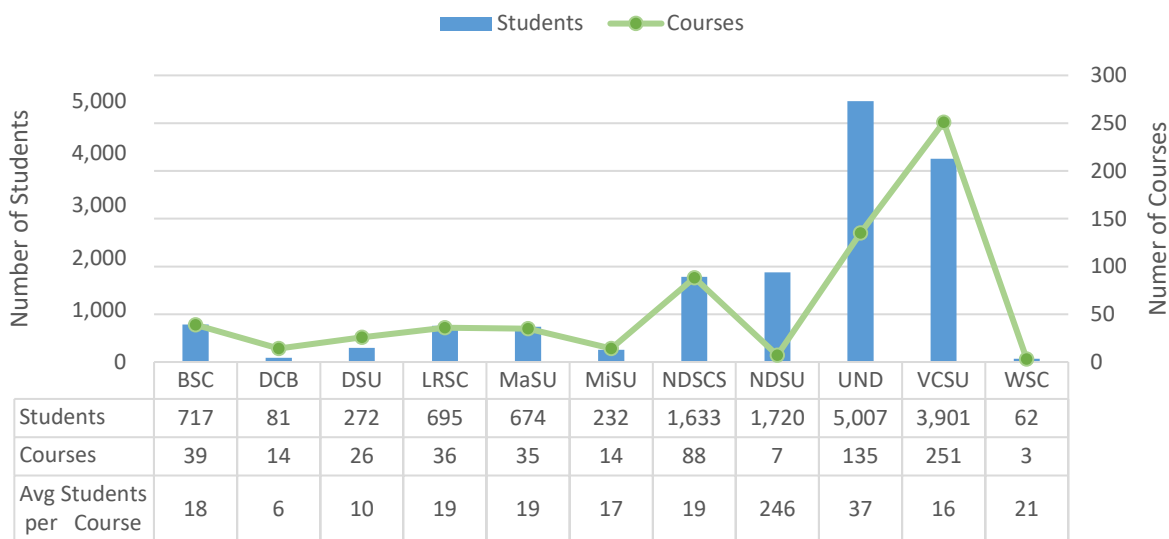
Chart 2: NDUS Students Impacted by OER Courses



The chart above illustrates the number of NDUS students impacted by OER courses each semester. The cumulative total for the seven semesters was 648 OER courses with 14,994 students impacted. The chart shows a dramatic increase in OER utilization beginning with the Spring 2016 semester, which strongly correlates with the timing of the NDUS OER initiative. As previously noted, the legislative funding became available Fall 2015, the first “OER Summit” was held October 2015, and the first round of institution-level grants were awarded in April 2016. Therefore, it is expected the first significant increase in OER would occur in the Fall 2016 semester. From the Fall 2015 semester to the Fall 2017 semester, the number of courses utilizing exclusively OER increased from 16 to 240, and the number of students impacted increased from 355 to 5624, an increase of nearly 1500%.

The student impact of OER courses is broken down by institution in the chart below.

Chart 3: Impact of OER Courses by Institution (Fall 2014 - Fall 2017)



As illustrated above, during the period Fall 2014 through Fall 2017, VCSU had, by far, the largest number of courses at 251, while UND impacted the largest number of students at 5,007.

### Emphasis on High-Enrollment Courses

It is also noteworthy that, while NDSU had adopted OER for the second-lowest number of course sections at seven, 1,720 students were impacted, because those seven course sections were from a high-enrollment course (Introduction to Psychology). This illustrates how focusing OER efforts on high-enrollment courses can lead to significant cost savings for students.

To further illustrate, we calculated the additional savings that could be realized if one general education course were converted to OER across the entire NDUS. During Fall 2017, out of 79 sections of Psychology 111 (Introduction to Psychology), 12 of those sections used OER materials. If all 79 sections had used OER, there would have been an additional estimated savings of \$250,770 to \$373,146 for Fall 2017 semester alone.

Our research found several OER initiatives outside of North Dakota already emphasize high-enrollment courses in their efforts. To focus OER efforts in areas that would have the greatest impact, University of Kansas and University of Oklahoma prioritized awarding OER grants to

projects offering the highest potential savings to students based on class enrollment and cost of existing materials (University of Kansas Libraries; University Libraries The University of Oklahoma). The Alabama Community College System gave priority consideration to general education courses and collaborative projects that would result in OER adoption department-wide or across multiple institutions (Alabama Commission on Higher Education and Alabama Community College System).

#### **Recommendation 1-1**

**We recommend NDUS institutions prioritize OER implementation efforts on high enrollment courses, such as general education courses, to realize the largest impact for students.**

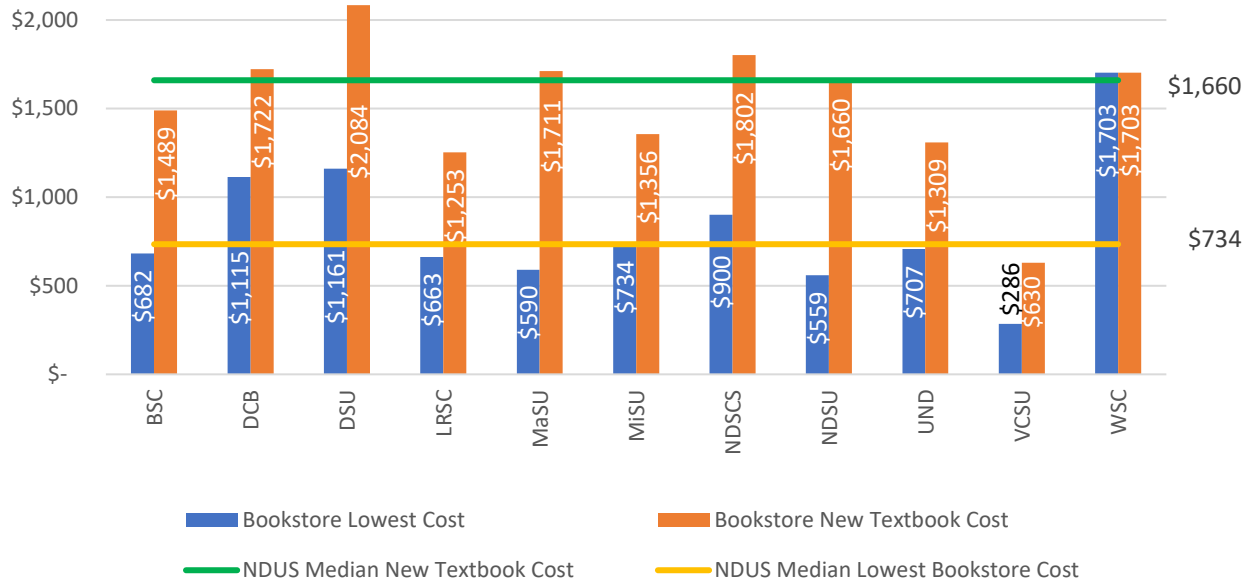
#### **NDUS Response:**

**Agree. The NDUS campuses support this recommendation. General education courses were among the top courses for which faculty utilized stipends in 2017-2018 to review OER resources for implementation.**

### **Direct Cost Savings to Students**

To identify the direct financial impact of OER on students, we first identified a means for approximating the cost of textbooks and other course materials. We selected ten general education courses comprising of 31 credits, which are available at all 11 of the NDUS institutions (the listing of courses used can be found in Appendix B). We researched the textbook requirements and costs for those courses at each institution based on actual Spring 2018 prices. We identified the cost to purchase the books from each bookstore new, as well as, where available, the cost to purchase used versions, and the cost to rent hard copies or electronic copies. The median textbook cost for these ten courses ranged from a low of \$734 to a high of \$1,660. It should be noted that third-party vendor prices were excluded due to the variability in prices and limited availability of materials. We calculated savings based on both the low and the high median textbook costs, with the understanding the actual savings to students would most likely fall in the middle of this range.

Chart 4: Lowest versus Highest Bookstore Cost by Institution



\*Note: VCSU utilized OER course materials for half of the courses we selected for this test. This greatly contributed to VCSU having the lowest overall textbook costs in this test.

We reviewed several outside studies which used different methodologies to calculate textbook costs, and we compared these to our own calculation. These studies provided the following results:

Table 1: Estimated Annual Textbook Costs – Based on 10 Courses Per Year

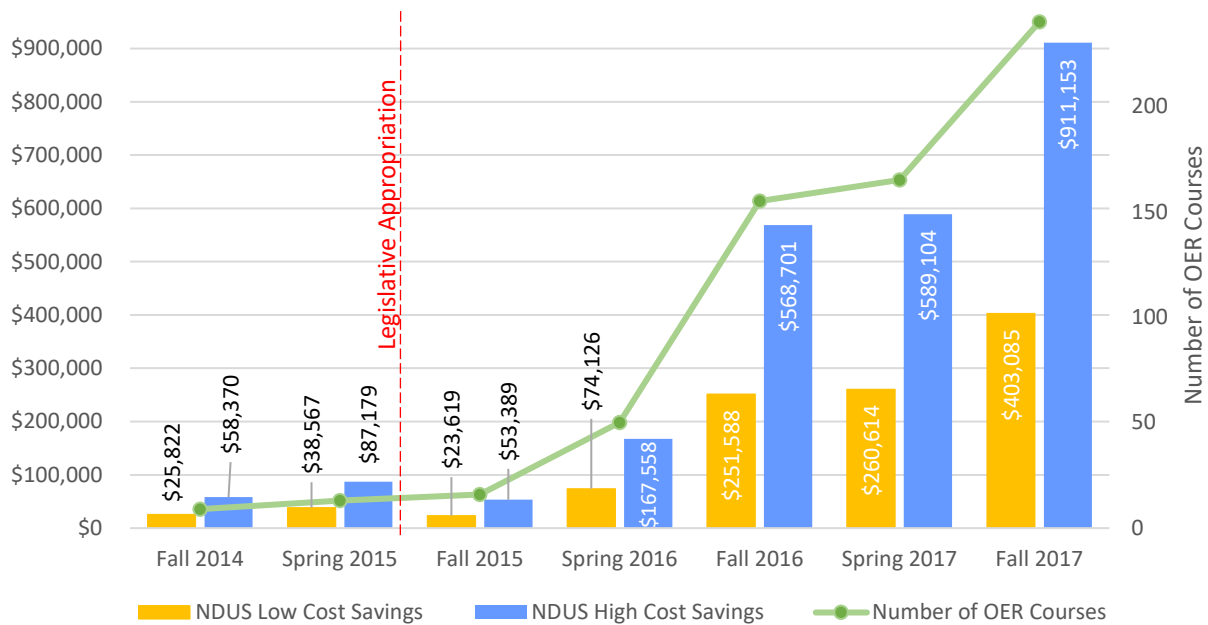
Study	Est. Annual Textbook Costs
NACS	\$510 - \$800
Open Textbooks: The Billion-Dollar Solution	\$1,280
California State University System	\$1,400 - \$2,000
State Auditor’s Calculations – NDUS	\$734 - \$1,660

Note: Data for NACS from National Association of College Stores (2017), for Open Textbooks from Senack, E. (2015), and for California State University System from Ozdemir, O. & Hendricks, C. (2017).

Based on the above, our calculated range of textbook costs at NDUS appear to fall within the ranges identified in various outside studies.

Using the median high and low textbook costs from our test of 10 NDUS courses, we computed the per credit cost and multiplied it by the number of credit hours per course and number of students. The estimated OER cost savings through Fall 2017 semester are as follows:

Chart 5: Estimated NDUS Cost Savings



The cumulative total for the 7 semesters was 648 OER courses with estimated savings ranging from \$1.1 million to \$2.4 million, which is approximately **10 to 20 times** the initial legislative appropriation for this OER initiative. The estimated savings broken down by institution can be found in Appendix C. Summer semester OER data was not readily available from all 11 institutions, and it would be relatively insignificant due to the much lower enrollment during summer semesters. For that reason, the summer semesters were excluded from the total estimated savings calculation and the charts. However, using only the partial data received, OER saved students an additional \$71,000 to \$159,000 during the summer semesters.

The NDUS OER initiative has been a success in terms of cost savings for students. With continued support for OER, additional cost savings can be attained. In Objective 2 we will identify and report on some of the other positive, as well as some of the negative aspects of OER. In Objective 3 we will report on some of the significant barriers which may prevent further OER adoption and may prevent sustained OER use in the future. We will also explore some incentives which could encourage sustaining and increasing the level of OER utilization across the NDUS.

## ***Audit Results – Objective 2***

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### ***Statement of Objective and Conclusion***

The second objective of our audit was to answer the following question:

- What are some of the significant positive and negative aspects of open educational resources?

We identified both positive and negative aspects of OER, which are outlined below. Based on the results of our testing, the positive aspects appear to support continued and increased usage of OER materials where practical. However, the negative aspects indicate OER is not necessarily an appropriate solution in all circumstances.

### ***Methodologies, Findings, Recommendations, and Responses***

To identify the positive and negative aspects of OER, we reviewed outside studies, conducted online faculty and student surveys, and interviewed faculty, administration, and staff. We compiled this information to recognize the most frequently mentioned positive and negative aspects of OER.

#### **Positive Aspects**

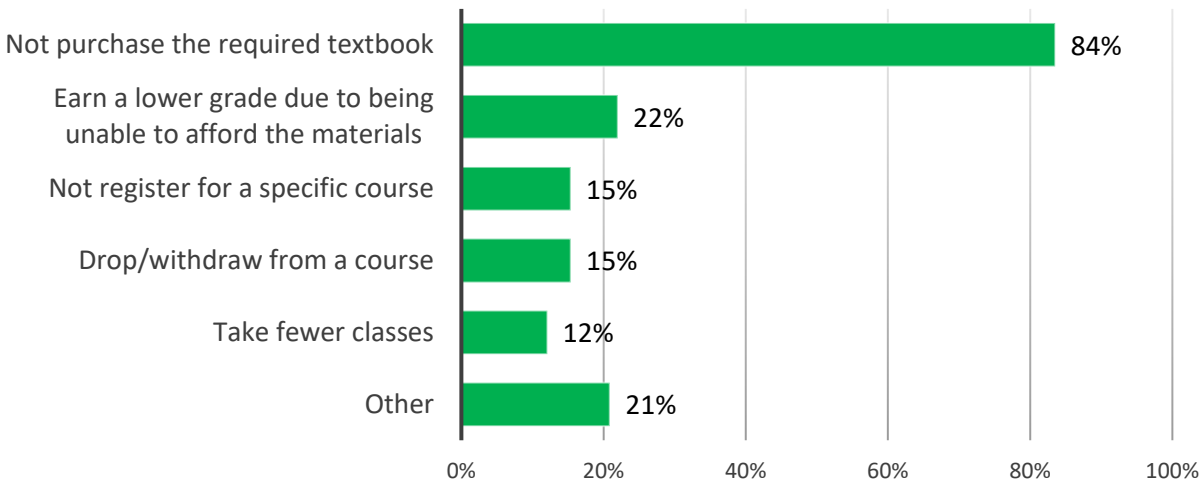
- Cost Reduction
- Adapability of Course Materials
- Option to have Permanent Electronic and Hard Copy Access to Course Materials
- Similar or Better Outcomes

#### **Cost Reduction**

As is reported in Objective 1, OER has the benefit of reducing the direct financial cost of course materials for students. We estimated the direct financial impact on students was between \$403,000 and \$911,000 in the Fall 2017 semester alone, and between \$1.1 million and \$2.4 million during the period covered by the audit.

NDUS faculty and administration noted the impact of textbook costs on student outcomes. In our faculty survey, nearly 96% of responding faculty stated that cost was either somewhat important or very important in making their textbook selection decisions. Sixty-seven percent of responding faculty stated cost is the most important positive factor regarding OER. Also, in our interviews with faculty and administration, cost savings was the most frequently mentioned benefit of OER. NDUS students, not surprisingly, were overwhelmingly cost-sensitive with respect to textbook costs. More than 99% of students participating in our survey stated that cost was either a “somewhat important” or “very important” factor in selecting course materials. Participating students also stated the cost of textbooks had the following impacts on their behavior, as is illustrated by the following chart.

Chart 6: Textbook Costs Caused...



Included in the “other” category, as well as was mentioned during our focus group with North Dakota Student Association student leaders, was the fact students often would wait to purchase the book until after the start of classes and verify with the instructor that the textbook was “really required” for the course. Some other mentions included sharing a book, purchasing a “questionable” electronic-only version of a textbook (e-book), among others.

External studies also have identified the impact of textbook costs on students. According to a November 2017 Colorado Open Educational Resources Council report, 89% of respondents to the underlying survey partially or fully agreed with the statement “Textbook costs have become a serious affordability barrier to students” (Spilovoy, 2017). An October 2016 survey by Florida Virtual Campus concluded that “the high cost of textbooks is negatively impacting student access, success, and completion” (Florida Virtual Campus, 2016).

Sixty-eight percent of participating students stated knowing the cost of course materials at time of registration would either somewhat or greatly influence their decision to enroll in a specific course or section. In our discussions with NDUS students and faculty, it was suggested to have information on the textbook requirements for all courses available at the time of registration. This information provides transparency and allows students to make better-informed decisions about the cost of their education. This would also give students the opportunity to show their preference for either OER or traditional course materials, particularly when there are both OER and non-OER sections for the same course. Santa Anna College found OER courses filled more quickly than non-OER courses since providing students the capability to search for OER courses during registration (Kushida, Coyne, Jenkins, & Knight, 2018).

There is also a legal basis for early disclosure of textbook requirements. As stated in the Higher Education Opportunity Act of 2008, institutions should disclose, “to the maximum extent practicable,” details of the materials requirements for each course for registration purposes (Higher Education Opportunity Act, 2008). Some states, such as California, Oregon, Texas, and Washington, have passed legislation requiring institutions to add labels in course schedules and registration systems for courses that use free textbooks or OER. Several institutions outside these states have also begun labeling OER courses (Lieberman, 2017).

## **Recommendation 2-1**

**We recommend, to the greatest extent possible, NDUS institutions disclose course material requirements, as well as specifically label courses that use OER, at time of registration.**

### **NDUS Response:**

**Agree. The NDUS is reviewing some of the ways in which textbook options are being presented to students. Campus bookstore managers report that, at present, textbook lists are largely compiled from the list of courses for which a student is enrolled. However, the managers also indicate that vendors are beginning to offer contracted services that enable students to view textbook prices prior to enrollment. The NDUS will have a better estimate of the additional costs to college bookstore to purchase this functionality in the near future.**

**It is important to acknowledge that not all students prefer OER resources and therefore an array of textbook options from a variety of vendors is more responsive to the diversity of students enrolled in the NDUS. Students at the North Dakota Student Association meeting on October 12, 2018 cautioned that the availability of an OER textbook should not be the determining factor in the selection of college textbooks.**

## **Adaptability of Course Materials**

OER, by definition, have the attribute of being adaptable. That is, they may be tailored by the user (in this case, primarily faculty) to accommodate the instructional objectives of the course. The “possibility of adaptation, modification, and customization” of open textbooks was one of the critical motivations for 24% of the participants in the study on instructor and student experiences with open textbooks in the California State University system published in March 2017 (Ozdemir & Hendricks, 2017).

According to the Educause article, “OER: The Future of Education is Open,” the adaptable nature of OER enables faculty to have additional freedom in terms of course design, rather than designing courses based upon a commercial textbook (Young, Daly, & Stone, 2017). A report issued by the Washington State Board for Community and Technical Colleges found that the ability to “modify, update and revise OER” enabled more current course content as well as student involvement in creation of content (Chae & Jenkins, 2015).

In our survey of NDUS faculty, approximately 30% of faculty surveyed indicated the ability to create and design their own course materials was a positive benefit of OER. In our faculty interviews, the ability to adapt the course materials was the third most frequently cited benefit of OER.

## **Option to have Permanent Electronic and Hard Copy Access to Course Materials**

Another identified advantage of OER is the flexibility to access the textbook in either electronic or hard copy format, based on the needs and preferences of each individual student. A common misconception about OER is that they are only available electronically; this is not true. Generally, OER is readily available in electronic format at no cost, but due to the nature of OER



licenses, a student who prefers a hard copy can print one for the cost of the paper and ink. Some individual faculty have worked with the college or university bookstore to make printed and bound copies of OER available to students for optional purchase. Also, some OER organizations, most notably Rice University's OpenStax, make hardcover versions available as a convenience, either for direct purchase or through the institution's bookstore, for a nominal fee.

According to a California State University system study, 20% of responding faculty cited "accessibility" as a motivating factor for implementation of OER; faculty noted that provision of electronic and printed copy options "helped increase accessibility to course textbooks and satisfy different student preferences." In the same study, 40% of faculty stated their students appreciated the ability to access them online at any time from any digital device (Ozdemir & Hendricks, 2017).

In our survey of NDUS students, more than 80% of responding students indicated the option to use electronic version, hard copy or both, was very or somewhat important. In the same survey, 68% of the students stated that the ability to permanently retain a copy of the textbook was either "very important" or "somewhat important." Unlike most of the other options for purchasing or renting textbooks, either the electronic or hard copy, or both, of OER texts may be retained by the student indefinitely and used by the student as a permanent reference.

### **Similar or Better Outcomes**

The outside studies we reviewed generally concluded that OER resulted in at least similar outcomes to traditional course materials. A California State University system study concluded, "For the most part, faculty felt that the OER materials were thorough and complete and that students learned as well with the OER materials as with the traditional textbook for the class" (Ozdemir & Hendricks, 2017). A research article written by John Hilton III also noted a similar result (Hilton III, 2016).

A study was also performed within the NDUS by Virginia Clinton, a professor at UND, which compared the results before and after converting to OER in one of her courses. She found student learning was either better or not affected by the adoption of OER, and students liked the OER and commercial textbooks similarly (Clinton, 2018).

In our individual interviews of faculty and staff, the fact OER is of "comparable" or "acceptable" quality compared to traditional materials was the second-most cited positive factor. Of faculty surveyed who expressed an opinion, nearly half indicated quality of materials was similar or better, and approximately 60% of faculty surveyed indicated similar or better student outcomes.

Students who participated in our survey agreed. Nearly 80% of the students who had taken an OER class indicated quality was similar or better; more than 80% indicated illustrations were similar or better; and more than 86% of responding students indicated contribution to learning was similar or better.

## Significant Negative Aspects

- Time and Effort to Implement
- Lack of Ancillary Materials
- Materials not Available in Certain Subject Matter Areas
- Lower Perceived Quality of Materials

### **Time and Effort to Implement**

The most widely-expressed concern identified in our analysis was the additional time and effort required to implement OER. The details of this will be discussed at length in Objective 3.

### **Lack of Ancillary Materials**

One frequently identified disadvantage OER currently has versus traditional course materials is the lack of ancillary, or supplementary, resources. Based on our faculty interviews, current publisher materials offer lecture slides, study guides, online homework systems, online quizzes, etc. While some existing OER databases provide ancillary materials, these are currently limited in availability. The lack of supplementary materials further increases the time and effort required on the part of faculty to implement OER.

The lack of or weakness in online homework systems and other supplementary materials was mentioned the most often as a negative aspect of OER during the faculty and staff interviews. Also, there were frequent comments in the faculty survey stating the deficiency of ancillary materials with a negative drawback of OER.

### **Materials not Available in Certain Subject Matter Areas**

Another commonly cited weakness with respect to OER is the lack of availability of OER materials for certain subjects. This lack of availability was mentioned 11 times in our 70 interviews. In our faculty survey, nearly 34% cited lack of availability of suitable materials as a negative factor regarding OER. An Inside Higher Ed article cites a 2015-16 OER study, in which 49% of faculty stated there were not enough OER resources in their fields (Straumsheim, 2016).

Even among faculty and administrators who have successfully implemented OER, they noted that OER is not available or even necessarily appropriate for all disciplines or all levels of courses.

The following charts group the OER courses that have been implemented in the NDUS by level and subject area. The first chart indicates that over half of the OER courses are in the prep and 100 level courses. Almost another quarter of the OER courses have been implemented in the 200 level courses. The next chart shows the breakdown of OER courses by subject. Five subjects make up more than 50% of the OER courses. English has seen the largest number of OER courses, followed by math, education, biology, and psychology.

Chart 7: OER Courses by Level

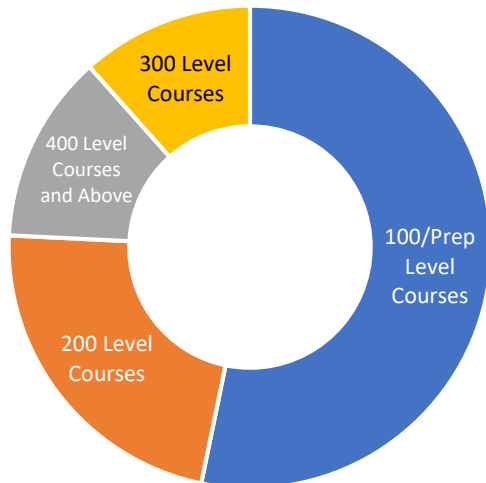
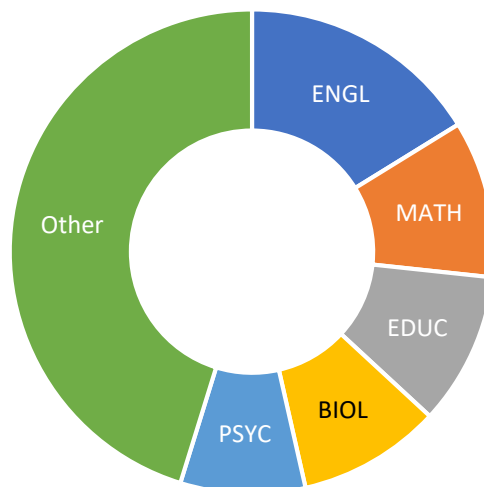


Chart 8: OER Courses by Subject



### Lower Perceived Quality of Materials

Many OER databases provide opportunities for the materials to be peer reviewed and corrections submitted. However, OER is not necessarily subjected to the same quality control processes as traditional publisher-produced materials.

In our interviews and surveys of NDUS faculty, staff and administration, the quality of OER materials was a common theme. In our survey of faculty, more than 40% stated quality of OER materials was a negative factor, and quality concerns were mentioned in more than 27% of our interviews.

WSU Libraries' article *Open Educational Resources (OERs): Tools for Affordable Learning: Benefits and Challenges of OERs* notes that "OERs may be produced with little added support for copy-editing and design. In addition, some may not be updated as frequently as the education community might like" (Washington State University Libraries, n.d.).

## ***Audit Results – Objective 3***

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### ***Statement of Objective and Conclusion***

The third objective of our audit was to answer the following question:

- What are some of the significant incentives and barriers to expanded implementation of open educational resources?

We identified three significant barriers preventing further OER implementation, and we identified incentives which have been found to be effective in overcoming these barriers.

### ***Methodologies, Findings, Recommendations, and Responses***

To identify the significant barriers and incentives to OER, we reviewed external and internal studies, conducted online faculty and student surveys, and interviewed faculty and staff.

#### **OER Challenges to Sustainability**

Based on the results in Objectives 1 and 2, OER has demonstrated a significant net positive impact on NDUS students. The next issue concerns sustainability of OER. What are the significant factors which can either encourage or hinder sustained and/or expanded use of OER in North Dakota? Within the OER studies we reviewed, as well as our surveys and interviews with administration, staff, and faculty, there was virtually unanimous agreement that selection of course materials is a critical aspect of academic freedom and, as such, should be left to faculty. Therefore, the factors we identified in this objective focus on eliminating barriers for those who have volunteered or would voluntarily consider adopting OER.

#### **Significant Barriers**

- Time and Effort to Implement
- Lack of OER Awareness
- Complexity of OER

#### **Time and Effort to Implement**

As noted in Objective 2, the most widely-expressed concern identified in our analysis was the additional time and effort required to implement OER. The additional time necessary to implement OER varies by instructor and program. However, according to a study on Achieving the Dream's OER Degree Initiative, 63% of the participating instructors stated the time commitment developing an OER course was at least 1.5 times as much as that of a traditional course (Griffiths, et al., 2017). Contract provisions, as currently structured, do not compensate faculty for the additional time to develop OER, which means additional time invested by faculty in implementing OER is essentially "donated" by the implementing faculty.

In our faculty survey, nearly 79% of respondents indicated time and effort was a somewhat significant or very significant barrier to OER implementation. Sixty one percent of respondents identified the lack of a contractual incentive to implement OER as a somewhat or very

significant barrier to OER implementation. Our faculty and staff interviews produced similar results.

Results outside of North Dakota have been similar. A report on OER in Colorado cites an Instructional Technology Council survey of its member colleges, in which 76% of survey respondents identified the time needed to locate/evaluate resources as a top challenge (Spilovoy, 2017). In another report of OER usage in the Washington Community and Technical College System, lack of time for course redesign was the “primary barrier to performing the often time-intensive work of finding, adapting and creating OER” (Chae & Jenkins, 2015).

### **Lack of OER Awareness**

Another significant barrier revealed in our analysis was a general lack of awareness regarding OER. More than half of the respondents to our faculty survey stated they had no or limited knowledge of OER: in the survey, 36% of respondents indicated they were not aware of or didn’t know much about OER. Another 22% of respondents indicated they were somewhat aware of OER but weren’t sure how OER could be used.

A 2016 Babson Survey Research Group survey indicated 58% of U.S. participating college and university faculty surveyed said they were not aware of OER (Straumsheim, 2016). Another report cited an Instructional Technology Council survey of its member colleges in which 70% of survey respondents identified lack of faculty awareness of OER as a top challenge (Spilovoy, 2017).

### **Complexity of OER**

Even among faculty that stated they were aware of OER, many expressed uncertainty regarding copyright and open licensing and frustration in locating suitable OER materials. In our survey of faculty, 63% expressed concerns regarding copyright and open licensing concepts, and 73% noted the difficulty in selecting and navigating the various OER databases. Lack of OER expertise across the university system was the most mentioned barrier in interviews with NDUS faculty, staff and administrators.

Copyright, open licensing and public domain considerations can make using OER more difficult. As mentioned in the background information, a key element of OER is that it resides in the public domain or has been released under an open license. There are many types of open licenses, and each has different permissions attached to it. The users of OER either need to be familiar with the rules attached to open licenses or have access to someone with that level of expertise.

The large number and variety of OER databases, along with a lack of consistency in how these databases are maintained, can add an element of complexity to the process of selecting OER materials. For example, the Lumen Learning web site includes 13 unique links to OER databases of books. Each of those databases, in turn, contains dozens or hundreds of books. In our review of these databases, we searched only four of the 13 databases using the keyword “chemistry,” and we found 291 options for that one topic.

## Significant Incentives

- Faculty Stipends
- Additional "Release Time"
- NDUS OER Portal or Database
- System-Wide OER Conferences ("Summits")
- System-Level Dedicated Staff
- Expertise and Support from Librarians
- Institution-Level Training and Knowledge Sharing

### Faculty Stipends

Generally, faculty, staff and leadership were in favor of the concept of offering stipends to faculty for development of OER courses. As previously noted, approximately \$77,000 of the legislative appropriation for OER was used to award stipends to faculty, which helped save students between \$1.1 million and \$2.4 million. In our faculty survey, approximately 76% of survey respondents identified stipends and/or "release time" as either "somewhat important" or "very important" as an incentive to encourage adoption of OER. In our interviews of faculty, approximately one in four interviewees identified stipends as an effective incentive.

A study on OER in Colorado reported 82% of respondents identified "grant programs to encourage OER adoption and creation" as an activity which leadership would encourage, given adequate funding and support (Spilovoy, 2017). According to the report *Open Textbooks: The Billion-Dollar Solution*, a 2011 University of Massachusetts, Amherst OER initiative was funded with mini grants ranging from \$1,000 to \$2,500; in this initiative, \$60,000 invested in the grant program generated more than \$851,000 in savings to students (Senack, 2015).

### Recommendation 3-1

**To the extent NDUS continues to allocate funding in pursuit of its OER strategy, we recommend NDUS continue offering stipends to recognize and encourage faculty efforts in implementing OER courses.**

#### NDUS Response:

**Agree. To the extent funding is available to the NDUS, the NDUS supports the use of stipends to enable faculty to review and implement OER resources.**

### Additional "Release Time"

Additional release time, defined as a reduction in the teaching load to allow time for other activities, is another way to compensate for the extra time and effort necessary to implement an OER course. According to a study on Achieving the Dream's OER Degree Initiative, instructors typically receive either stipends or release time (Griffiths, et al., 2017). In another paper on the incentives and barriers to OER adoption, a top incentive identified to overcome the time and effort barrier is institutional support for the adoption of OER, whether in the form of course load reduction, curricular research assistance, or library support for finding and adopting OER (Belikov & Bodily, 2016).

### **Recommendation 3-2**

**Where stipends are not available or do not adequately cover the time and effort required, we recommend NDUS explore offering additional “release time” for faculty implementing OER.**

#### **NDUS Response:**

**Agree. However, “release time” is not necessarily at no cost to the institution. In some cases, the institution will need to hire an adjunct to cover the faculty member on release time and/or cover that expense and/or loss of FTE through other means.**

### **NDUS OER Portal or Database**

We discovered in our interviews most faculty weren't aware of OER being used by other institutions. To easily access those materials as a potential resource for their courses, faculty expressed an interest in having a database which includes OER materials adopted and created within the NDUS.

The Texas higher education board recommended a statewide OER portal after a feasibility study demonstrated a portal would reduce the time and effort to develop, implement and update OER (Texas Higher Education Coordinating Board, 2018). The Open Oregon portal provides links to content that have been used successfully by other Oregon community college and university instructors. To date there are links to over 400 low-cost (under \$30) or no-cost materials included on the portal (Higher Education Coordination Commission, n.d.). Refer to Figure 1 on the following page for a screenshot of the Open Oregon portal.

Figure 1: Open Oregon Educational Resources Portal

**Open Oregon Educational Resources**

ABOUT CALENDAR **RESOURCES** FAQ GRANTS Z-DEGREE CONTACT

## Resources

Browse or search the table below to find out what other Oregon community college instructors are using to reduce textbook costs in their courses. If you see a name and email address, feel free to contact that person about their class.

[Use this short form to submit your own course materials!](#)

Search table by keyword

School Type:  Discipline:

INSTITUTION	COURSE	COURSE MATERIALS	LINKS	NAME
Linn-Benton Community College	AA 224	Strizver, I. (2014). Type rules! : The designer's guide to professional typography (Fourth ed.).	Available in the library via EBSCO concurrent use ebook purchase	
Linn-Benton Community College	AA 226	Lupton, E. (2010). Thinking with type : A critical guide for designers, writers, editors, & students (2nd rev. and expanded ed.). New York: Princeton Architectural Press.	Available in the library via Ebrary Academic Complete	
Treasure Valley Community College	ABSE Math 3	OpenStax Prealgebra	<a href="http://cnx.org/contents/caa57dab-41c7-455e-bd6f-f443cda5519c@9.724">http://cnx.org/contents/caa57dab-41c7-455e-bd6f-f443cda5519c@9.724</a>	<a href="#">Julie Pfaff</a>
Lane Community College	ANTH 103	Cultural Anthropology Tutorials, an online resource authored and copyright by Dennis O'Neil from Palomar College.	<a href="http://anthro.palomar.edu/tutorials/cultural.htm">anthro.palomar.edu/tutorials/cultural.htm</a>	<a href="#">Denise Couch</a>

On an August 2018 webinar hosted by WCET, all presenters stated having a portal or database of the OER materials developed and/or used across the system early on would have assisted with the discovery of OER materials. One presenter discussed that at University of Maryland University College there were 12 different OER materials created for the same course because there wasn't an inventory of OER materials across the system. The work could have been done once and reused across the system. The presenter stated this database will be a "game changer for how we discover, design, share, and continually improve the resources" (WCET, 2018).

### Recommendation 3-3

**We recommend NDUS sponsor the development of a system-wide OER portal or database to encourage more cost-effective sharing, reuse and revision of existing OER materials. We recommend management consider including links to existing**



**OER portals and databases and individual OER materials adopted within the NDUS.**

**NDUS Response:**

Agree. The NDUS supports this recommendation and further suggests coordinating with the Online Dakota Information Network, ODIN, a membership of North Dakota academic, public, state agencies, schools, and special libraries. ODIN has extensive technological strength and could potentially house North Dakota's OER resources. Three campuses—UND, VCSU, and NDSU—have recently collaborated to propose their vision of a “Great Plains Open Textbook Network” that would take advantage of existing OERs across NDUS, as well as bringing in schools across North Dakota, and thus easing the transition from high school to college/university, and improving retention across NDUS.

The proposed “Great Plains Open Textbook Network” would take advantage of existing ODIN infrastructure and leverage resources and expertise within the system. This system-wide portal would include links to every NDUS institution, searchable by course, institution, program, and more. It also has the advantage, by being hosted at ODIN, of being accessible to all K-12 school libraries.

The three campuses plan in continue seeking state and grant funds to support their proposal.

**System-Wide OER Conferences (“Summits”)**

As noted in the background section, NDUS held two system-wide OER summits which provided faculty and other NDUS stakeholders with information regarding adoption and implementation of OER. In our various interviews, most faculty who had adopted OER had attended one or both summits. It was also noted in the interviews, faculty who were familiar with OER had either attended a summit or learned about OER from another faculty who had attended one or both summits.

According to Community College Consortium for Open Educational Resources (CCCOER), one way to broaden OER awareness and promote collaboration between institutions is to host an OER summit (Dali, 2017). Lumen Learning also has found OER events to be a proven, high impact way to generate OER awareness and provide opportunities for attendees to learn from and collaborate with each other (Lumen Learning). Other notable OER programs across the nation used OER conferences as a component of their OER initiatives. Some of these programs include Open Oregon, University of Massachusetts, California State University, and others (Hofer, 2018; Online Learning Consortium, n.d.; UMassAmherst Libraries, n.d.).

**Recommendation 3-4**

**We recommend the NDUS continue to use OER Summits or similar system-wide events as part of future OER initiatives to promote information sharing and collaboration among the NDUS institutions.**

### **NDUS Response:**

**Agree. OER summits have been successful to date. UND hosted the most recent summit in October 2016, with attendees from across the state, and has plans to host a second, similar event in April 2019. Coordination and frequency of system-wide summits is largely dependent on available funding.**

### **System-Level Dedicated Staff**

The system-wide efforts would likely not have been possible without an NDUS-level individual to facilitate and support the OER initiative. During the early days of the NDUS OER initiative, NDUS' Director of Distance Education was the NDUS' primary administrator with respect to the initiative. She administered the institution-level grant program, organized the 2015 and 2016 OER summits, and used various media to promote the NDUS' OER efforts and results. She also applied for external funding and was awarded an OER Research Fellowship from the Hewlett Foundation. The NDUS eliminated this position in the end of 2016.

According to *Free to Learn*, the greatest potential impact of OER cannot be reached without the active support and leadership of those in higher education governance (Plotkin, 2010). An article on strategic implementation of OER defines OER initiatives as a change process. As such, it is critical to designate a leader(s) to oversee and lead the OER initiative. Research has supported the importance of leadership in practically any innovation process (Jung, Bauer, & Heaps, 2017).

Many OER programs have recognized the need for a position to coordinate and ensure accountability for OER goals, such as Santa Ana College, Houston Community College, Florida Virtual Campus, and others (Kushida, Coyne, Jenkins, & Knight, 2018; Smith, 2018; Florida Virtual Campus, 2018).

### **Recommendation 3-5**

**To the extent NDUS continues to support and sustain its OER initiatives, we recommend NDUS consider allocating system-level staff to facilitate, administer, support and ensure accountability for NDUS' OER initiatives.**

### **NDUS Response:**

**Agree. To the extent funding is available, the NDUS supports this recommendation. See also the NDUS response to Recommendation 3-6 and the use of library staff to support OER efforts, should limited staffing become an option.**

### **Expertise and Support from Librarians**

In our interviews with librarians, more than half mentioned they currently have a limited role in OER and would be willing to have more involvement in the institutions' OER initiatives.

Librarians are in a unique position to provide support for OER. They are experts in finding and evaluating information sources and understanding copyright and licensing matters (Spilovoy, 2018). The Library as Open Educational Leader project found most faculty agreed and

appreciated their expertise in searching for materials and interpreting open licenses (West, 2018). A review of the OER Degree Initiative led by Achieving the Dream suggested greater support from librarians may further reduce the burden of OER course development (Griffiths, et al., 2017).

NDUS faculty, too, recognized the role librarians could play. Seventy-three percent of our faculty survey respondents indicated support or assistance from service units, such as librarians, would encourage their adoption of OER. Librarians have played a key role in the NDUS OER initiative at certain institutions, most notably UND and MaSU.

### **Recommendation 3-6**

**We recommend NDUS recognize and encourage a greater level of involvement of librarians in future OER initiatives.**

#### **NDUS Response:**

**Agree. The NDUS views both campus library staff, ODIN staff and other library resources as necessary components of the System's OER initiative and will continue to work with them.**

### **Institution-Level Training and Knowledge Sharing**

Our faculty survey indicated overwhelming support for various knowledge-sharing and training initiatives. Seventy-three percent of respondents indicated department/institution-wide knowledge sharing would encourage their adoption of OER, and 71% said individual and/or group training programs would be a motivation.

The Colorado OER report found that many states and institutions with successful initiatives fund library and faculty workshops. The report went on to recommend regular virtual meetings with OER interest groups (Spilovoy, 2017). Washington Community and Technical College System noted the importance of training regarding use of OER and a support system with local experts (Chae & Jenkins, 2015). Another study identified the importance of “providing training, course development supports, and mechanisms to collaborate on course development with colleagues” (Griffiths, et al., 2017).

In our interviews with faculty, staff and administrators, providing training and knowledge sharing opportunities, such as conferences and meetings, smaller working groups and workshops, and discussions with “OER champions” and colleagues were the most mentioned incentives for adopting OER. These activities naturally lead to collaboration. Across the NDUS, faculty communication, both formal and informal, was a point of emphasis for faculty we interviewed.

The NDUS collaborative OER projects discussed in the next section of this report share a common theme: they all involved collaboration at the faculty/department level. In our interviews with faculty, there were similar accounts of one or more faculty members attending a summit/training or exploring OER and then sharing this information with others. Several faculty attributed hearing about OER from other faculty who had attended a summit and/or implemented OER for one or more courses.

### **Recommendation 3-7**

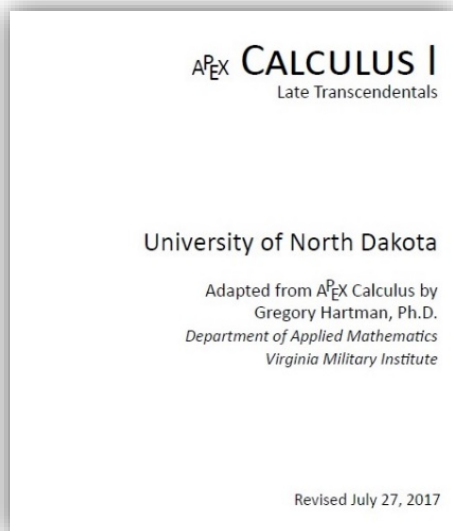
**We recommend NDUS support activities that will enable OER knowledge sharing within and among its institutions, such as conferences, training opportunities, regular working groups or workshops, and discussions led by early adopters and colleagues.**

#### **NDUS Response:**

**Agree. The NDUS supports this request. The frequency and extent to which conferences, training, workshops and discussions are offered will be determined by the level of funding and staffing available to support this recommendation through state and/or grant funds.**

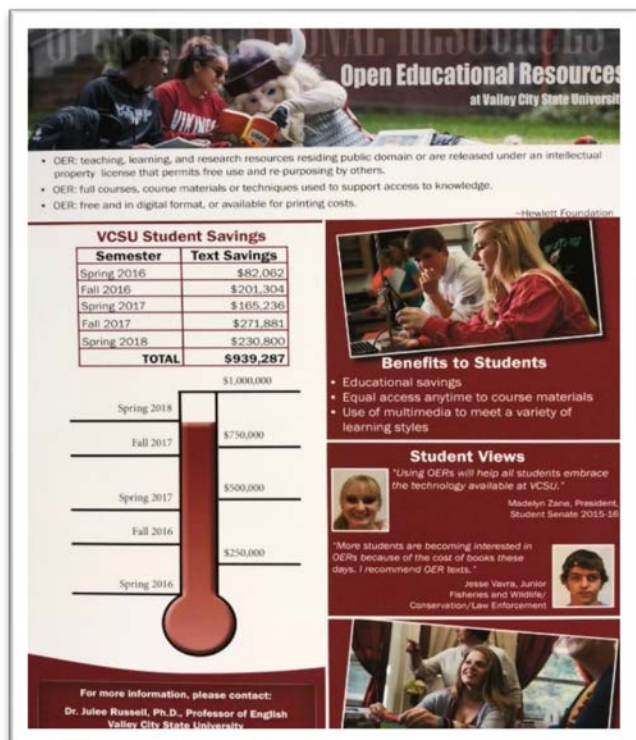
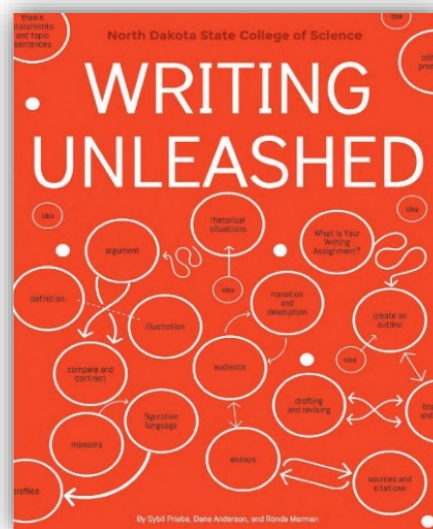
## Individual Cases: NDUS Collaborative OER Projects

In our analysis of OER incentives, we identified three examples of OER initiatives warranting specific recognition due to impacting relatively high numbers of students.



At UND, the Department of Mathematics developed a textbook for Calculus I, II and III, funded by a combination of NDUS funds and UND funds. The Calculus I text was first used by the department in Fall 2016, Calculus II in Spring 2017, and Calculus III in Summer 2017. Based on our testing, the OER text has been used by 2,117 students through Fall 2017 and is currently still in use. According to UND's application for OER funding, at the time this book was developed, the new textbook price for the existing Calculus I-III book was \$314.

Prior to the NDUS OER initiative, the NDSCS Department of English and Humanities adopted an OER textbook to replace its traditional Composition II textbook and later wrote an OER textbook for its Composition I courses. From Fall 2014 through Fall 2017, 1,449 students have used these OER textbooks for these courses.



VCSU has promoted and ingrained OER into its campus culture. As shown in Chart 3 in Objective 1, VCSU had offered by far the largest number of OER courses (at least 251 sections through Fall 2017). Just one example that illustrated VCSU's OER awareness efforts are posters displayed prominently throughout campus showcasing student cost savings, other benefits, and student testimonials.

# ***Overall Scope and Methodology***

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## ***Purpose and Authority***

This performance audit of the NDUS has been conducted by the Office of the State Auditor pursuant to authority within North Dakota Century Code Chapter 54-10.

Performance audits are defined as engagements that provide assurance or conclusions based on an evaluation of sufficient, appropriate evidence against stated criteria, such as specific requirements, measures, or defined business practices. Performance audits provide objective analysis so management and those charged with governance and oversight can use the information to improve performance and operations, reduce costs, facilitate decision making by parties with responsibility to oversee or initiate corrective action, and contribute to public accountability. The purpose of this report is to provide analysis, findings and recommendations with respect to the audit objectives.

## ***Scope***

We conducted this performance audit in accordance with *Generally Accepted Government Auditing Standards*. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

The criteria for this engagement consisted primarily of comparing OER to traditional textbooks and course materials. In our first objective, we evaluated the direct cost savings to students by comparing the average cost of traditional course materials to OER, which are, by definition, available at no direct cost to the student. In our second and third objectives, the attributes of OER identified in our report are to be considered in relation to traditional course materials.

The subject matter for these objectives consisted primarily of academic textbooks and other course materials utilized by the NDUS institutions.

## ***Methodology***

To accomplish our objectives, we performed the following procedures:

We reviewed external studies providing information about students' and faculty attitudes regarding course materials generally, and OER specifically. We conducted interviews, surveys and focus groups of members of administration, faculty, support staff, and students within the NDUS. Note: the detailed faculty and student survey questions and results can be found in Appendix D and Appendix E, respectively.

We reviewed external studies regarding the average cost of course materials, and we identified actual course material costs for selected general education courses at each institution based on bookstore.

We obtained and reviewed data from each institution regarding the extent of use of OER at each institution and reviewed course records to obtain evidence regarding the accuracy of this information. Based on the identified OER courses, we calculated an

estimate of cost savings based on enrollment figures and our calculated median “high” and “low” textbook costs.

### ***Relevant Laws, Policies, Contracts and Agreements***

We noted there generally are not written policies regarding selection of course materials which are significant in the context of our audit objectives. The NDUS and its institutions have policies promoting faculty academic freedom, which also applies to the selection of textbooks and other materials.

## *Appendix A: Textbook Cost-Savings Measures*

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In recent years, there has been an increasing number of options available to reduce, or at least slow the growth of the cost of course materials. Some of the alternatives include:

- OER, defined and discussed at length within this report
- Purchasing used textbooks from the bookstore
- Renting physical textbooks
- Renting or purchasing e-books
- Purchasing or renting textbooks through third-party websites

Other cost-saving measures were identified, including, for example, “inclusive access” arrangements and maintaining a copy on reserve at the institution’s library. However, for purposes of this report we focused on the above items.

Bookstores have offered students the option to purchase used textbooks for years. Used books are beneficial because they allow students to purchase a book of generally comparable quality to the “new” version at a lower cost. However, in the semester when a publisher releases a more current edition of its textbook, used textbooks are not an option. Also, there is typically a limited supply of used textbooks; therefore, they are not necessarily available to all students who register for a course.

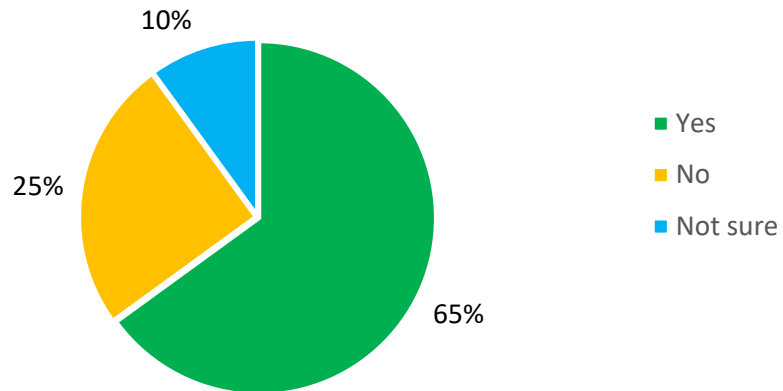
A more recent development has been the ability to rent physical textbooks. Often the cost to rent books can be lower than the price to purchase a new or used copy of the book. However, the book cannot be excessively marked up, highlighted or damaged. Also, if a student needs to retake the course, he or she would be required to pay the full rental cost again.

With the continuing innovations in technology, e-books are available for many courses. The cost of e-books often is the lowest-cost option available from the bookstore. However, e-books generally have restrictions on printing the materials. Also, e-books often include a built-in expiration date; thus, a student re-taking a course might need to purchase access to the materials again.

Third-party websites, such as Amazon and Chegg, offer new and used textbooks for purchase or rent. In many cases books can be purchased from these sites at a lower cost than offered by the bookstore. The supply and prices of books from these sites can be unpredictable, and quantities may not be available, or may not be available at the price identified in our testing. Using third parties also adds an element of risk of receiving substandard or nonconforming products, and there are potentially additional shipping costs and delays. What’s more, books purchased online lose the convenience of being able to charge the cost of the book to the student’s account, which would further limit some students’ ability to access the materials. In our survey of student leaders, 66% stated that they had on at least one occasion paid more to purchase a book from the bookstore due to their ability to charge it to their student account.

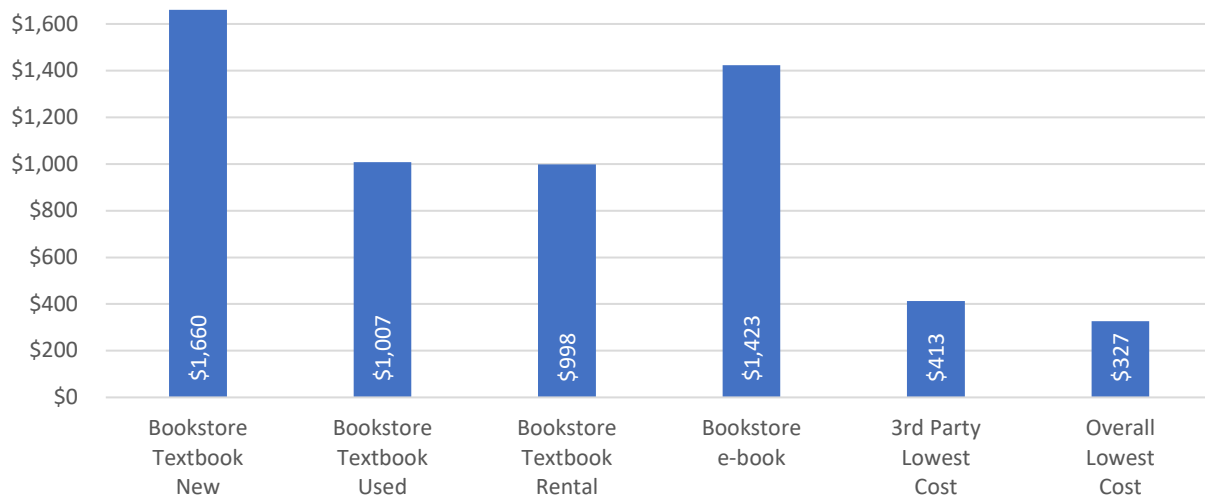


### Students who Paid More to Charge to Student Account



The following chart illustrates the impact on the median cost of textbooks for students versus the new book cost, assuming the students took advantage of each of the various available cost saving measures. For purposes of the computations below, when no option for that cost-saving measure was available, the “new” textbook cost was used.

### Median NDUS Yearly Textbook Costs



## ***Appendix B: Courses Selected for Testing***

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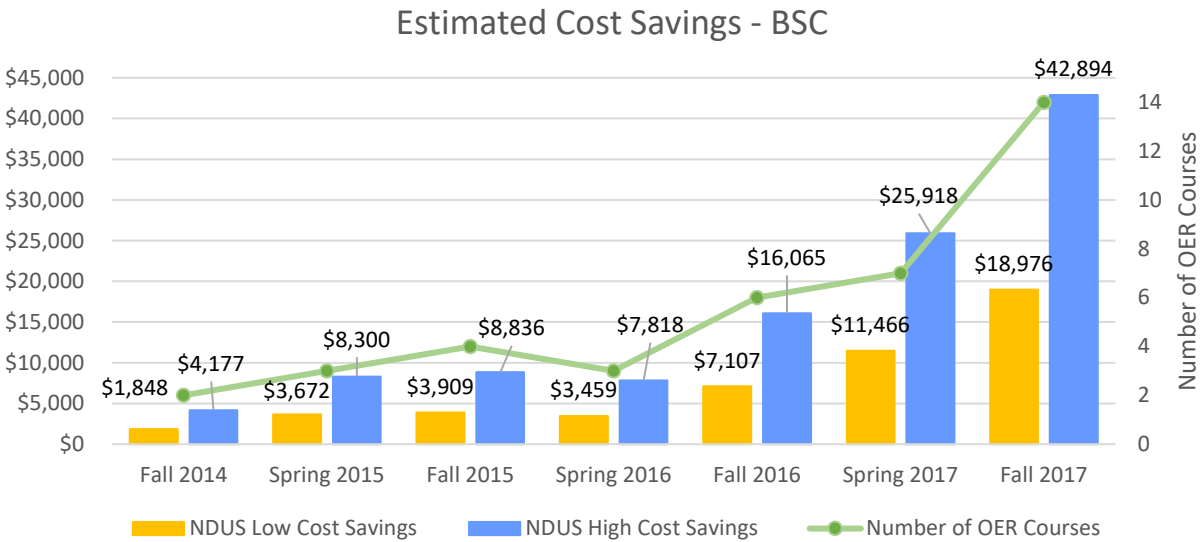
The courses selected for our analysis of high/low textbook costs at NDUS institutions consisted of the following courses totaling 31 credit hours:

- Chemistry 115 – Introduction to Chemistry\*
- Communications 110 – Fundamentals of Public Speaking
- Economics 201 – Principles of Microeconomics
- English 110 – College Composition I
- English 120 – College Composition II
- History 103 – US History to 1877\*
- Mathematics 103 – College Algebra
- Mathematics 146 – Applied Calculus\*
- Psychology 111 – Introduction to Psychology
- Sociology 110 – Introduction to Sociology

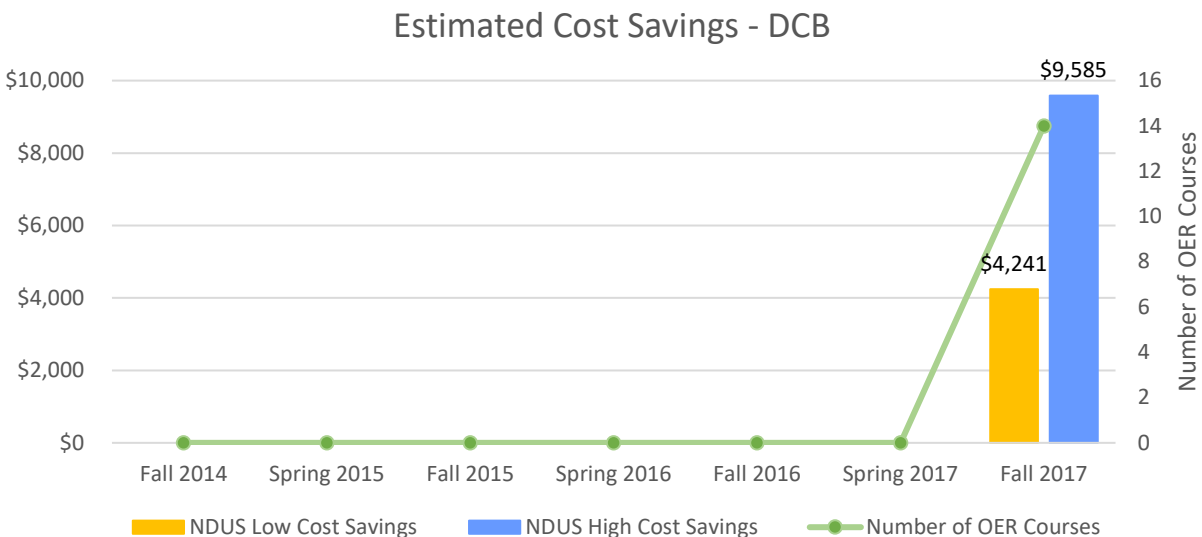
\*Note: at some of the smaller institutions, this course was not available in the Fall 2017 semester. In those individual instances, Chemistry 117 or 122 were substituted for Chemistry 115; History 104 was substituted for History 103, and Mathematics 105 was substituted for Mathematics 146.

## Appendix C: Institution-Level Charts

The following charts depict the estimated cost savings for each institution. Refer to the 'Audit Results – Objective 1' section for details on how the estimated cost savings were computed.

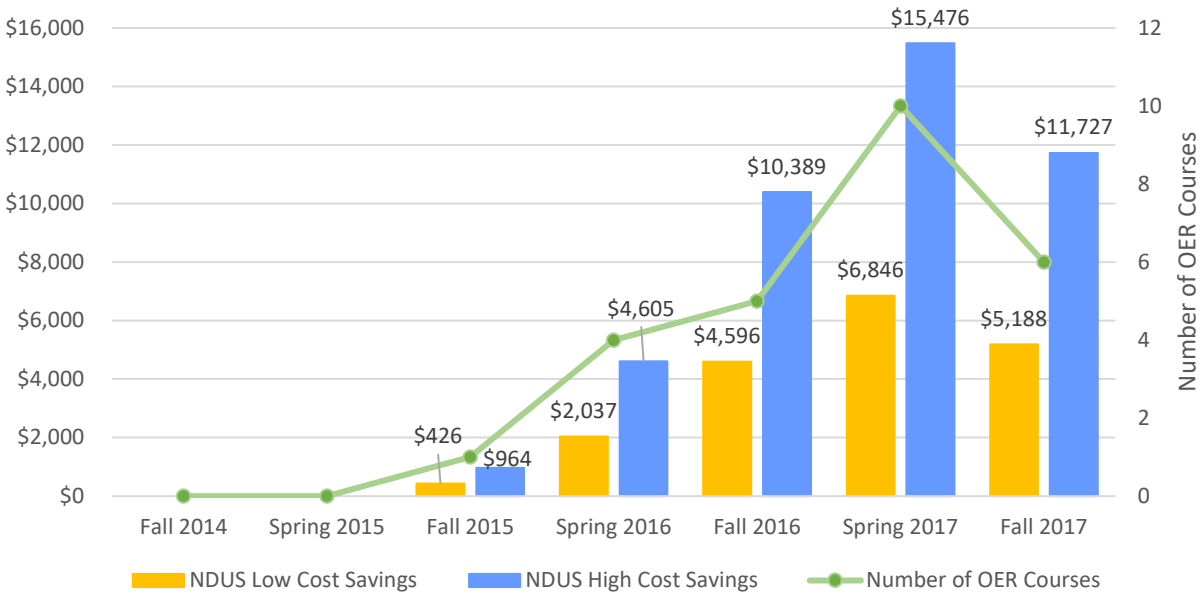


The cumulative total for the seven semesters at BSC was 39 OER courses with an estimated savings ranging from \$50,437 to \$114,008.



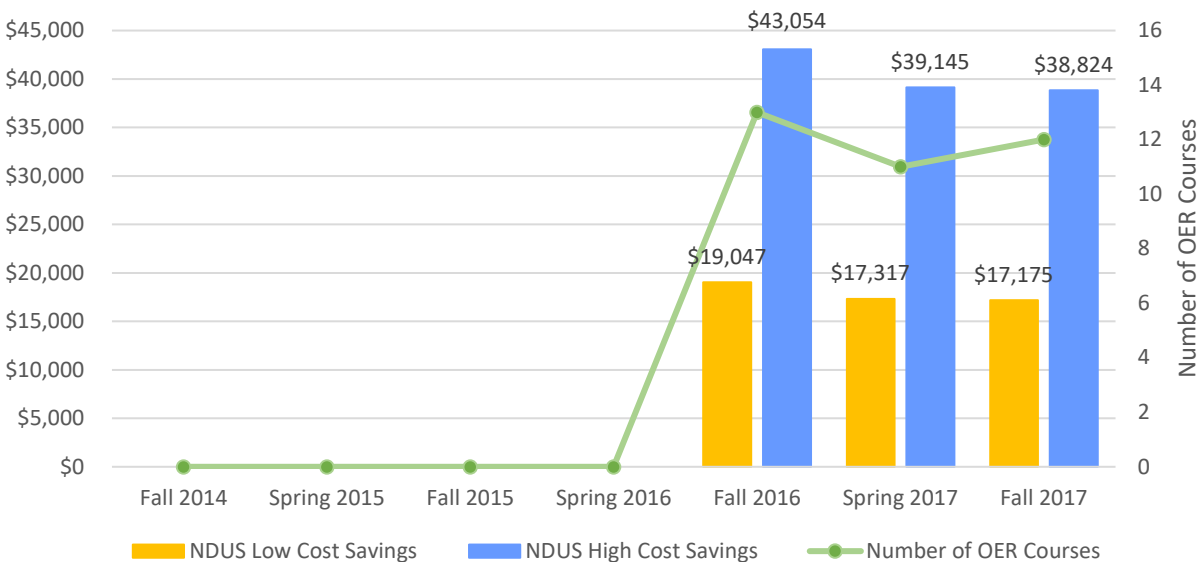
The cumulative total for the seven semesters at DCB was 14 OER courses with an estimated savings ranging from \$4,241 to \$9,585.

### Estimated Cost Savings - DSU



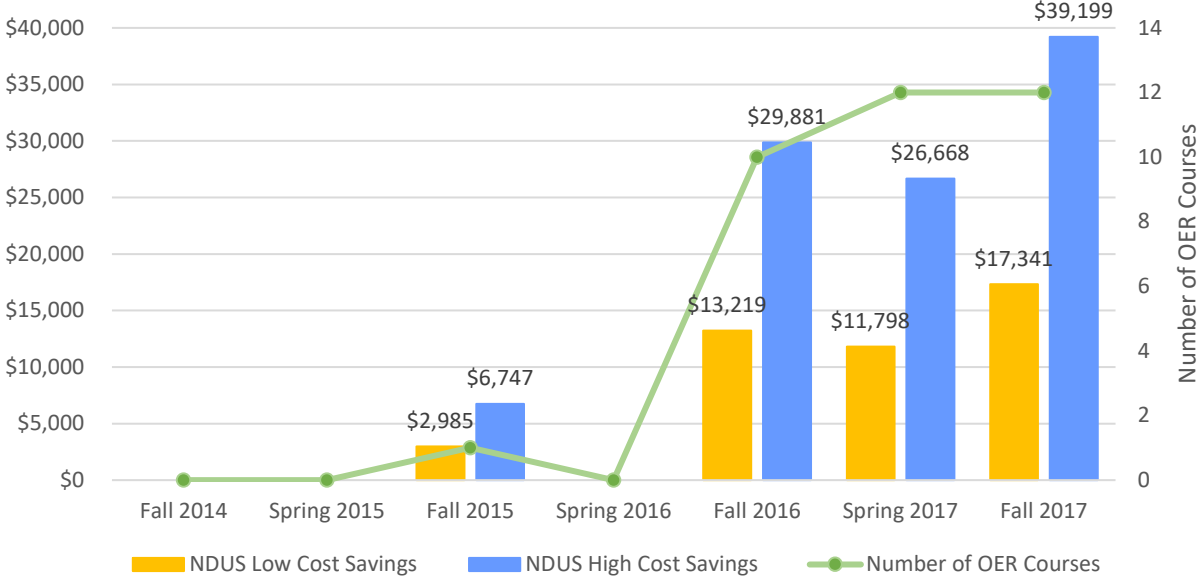
The cumulative total for the seven semesters at DSU was 26 OER courses with an estimated savings ranging from \$19,093 to \$43,161.

### Estimated Cost Savings - LRSC



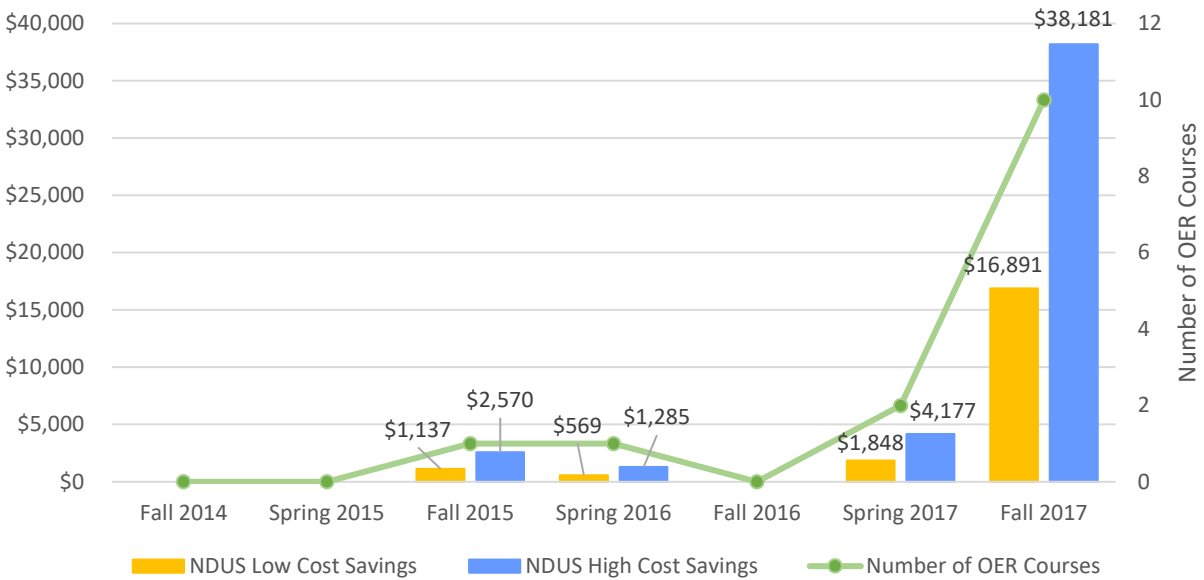
The cumulative total for the seven semesters at LRSC was 36 OER courses with an estimated savings ranging from \$53,539 to \$121,023.

### Estimated Cost Savings - MaSU



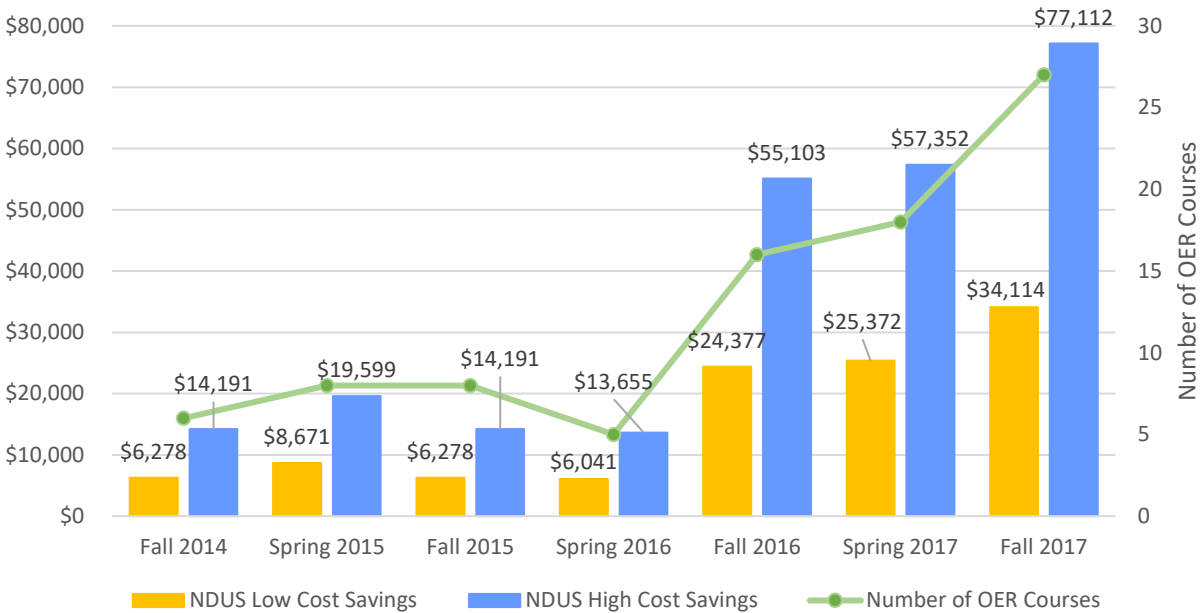
The cumulative total for the seven semesters at MaSU was 35 OER courses with an estimated savings ranging from \$45,343 to \$102,495.

### Estimated Cost Savings - MiSU



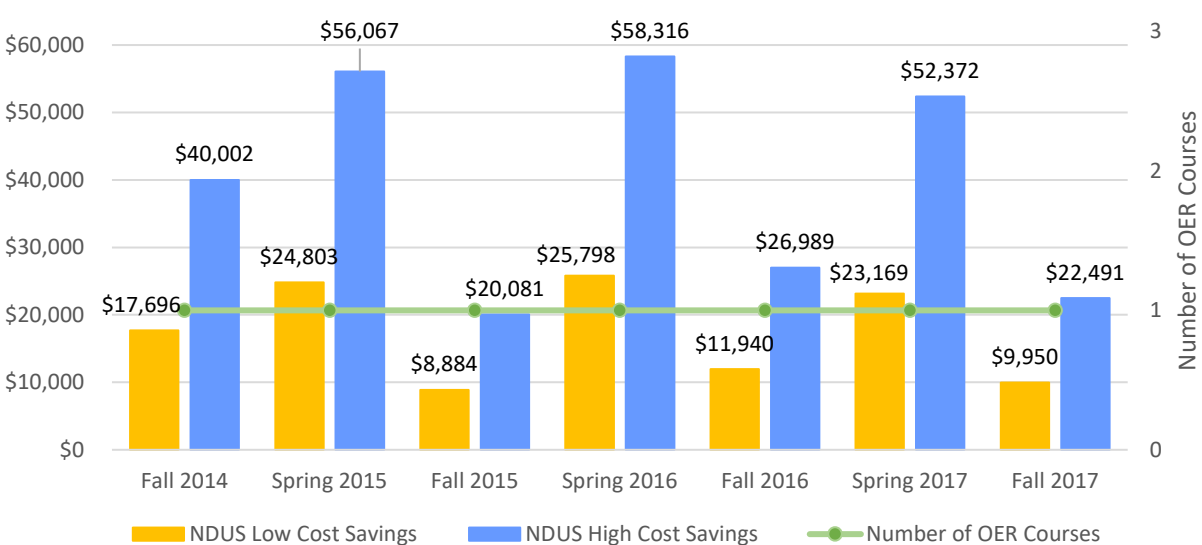
The cumulative total for the seven semesters at MiSU was 14 OER courses with an estimated savings ranging from \$20,445 to \$46,213.

### Estimated Cost Savings - NDSCS



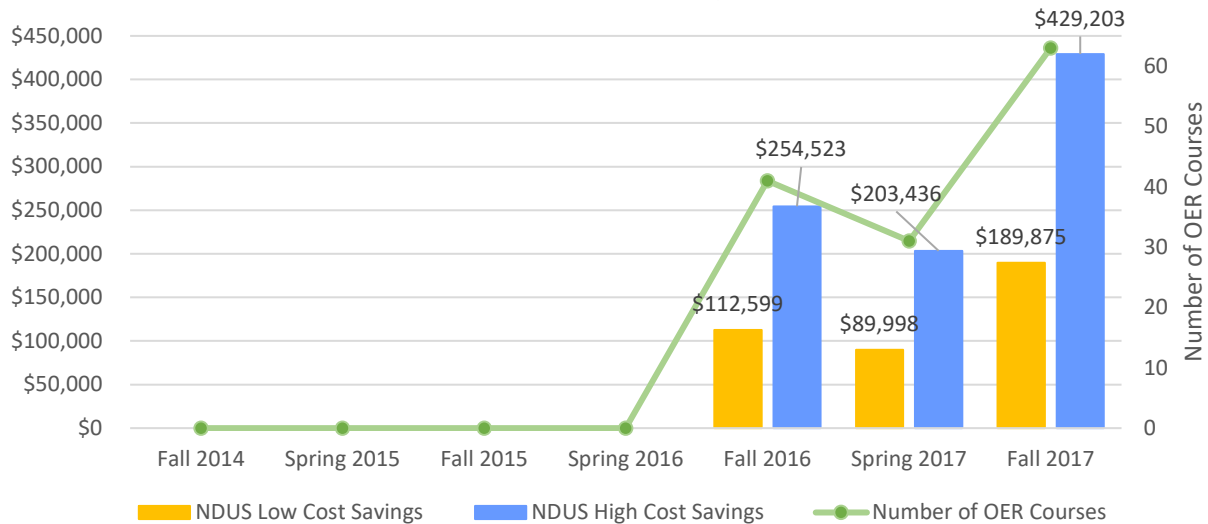
The cumulative total for the seven semesters at NDSCS was 88 OER courses with an estimated savings ranging from \$111,131 to \$251,203.

### Estimated Cost Savings - NDSU



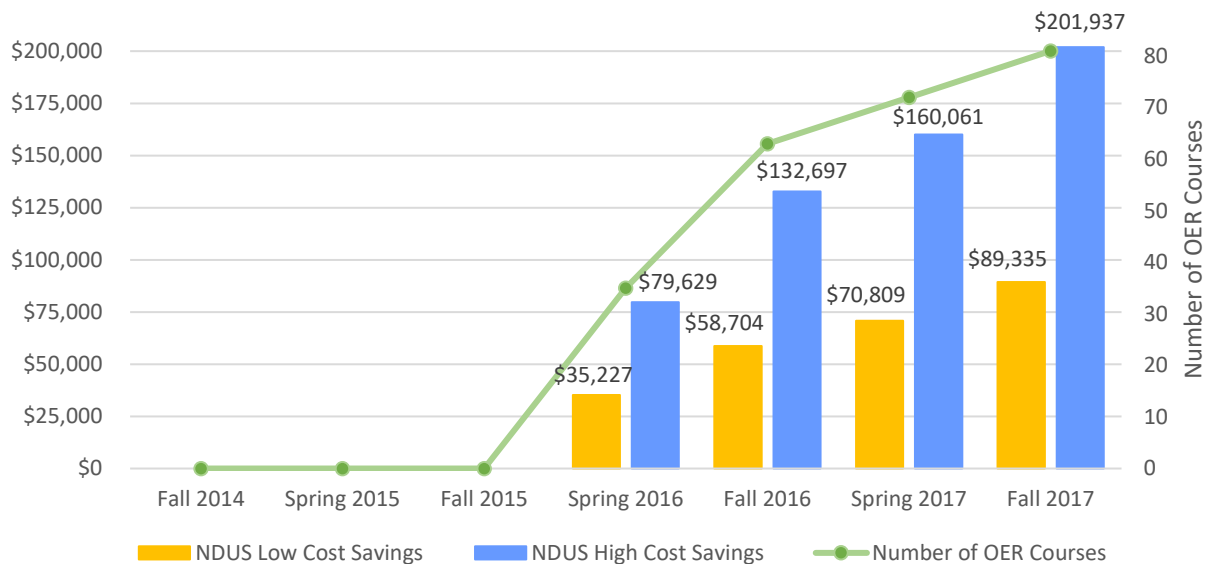
The cumulative total for the seven semesters at NDSU was 7 OER courses with an estimated savings ranging from \$122,240 to \$276,318. Although there was only one OER course offered each semester, it was a high-enrollment course which led to the large cost savings.

### Estimated Cost Savings - UND



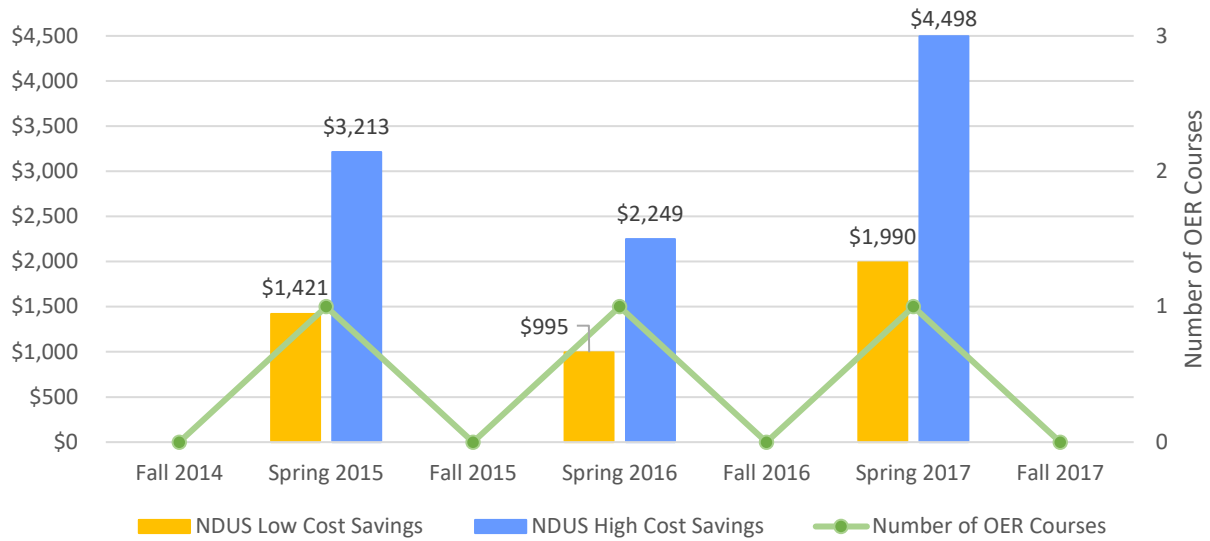
The cumulative total for the seven semesters at the UND was 135 OER courses with an estimated savings ranging from \$392,472 to \$887,162. Several of these courses were high enrollment courses which led to the large cost savings.

### Estimated Cost Savings - VCSU



The cumulative total for the seven semesters at VCSU was 251 OER courses, by far the highest number of courses of all NDUS institutions, with an estimated savings ranging from \$254,075 to \$574,324.

### Estimated Cost Savings - WSC



The cumulative total for the seven semesters at WSC was 3 OER courses with an estimated savings ranging from \$4,406 to \$9,960.

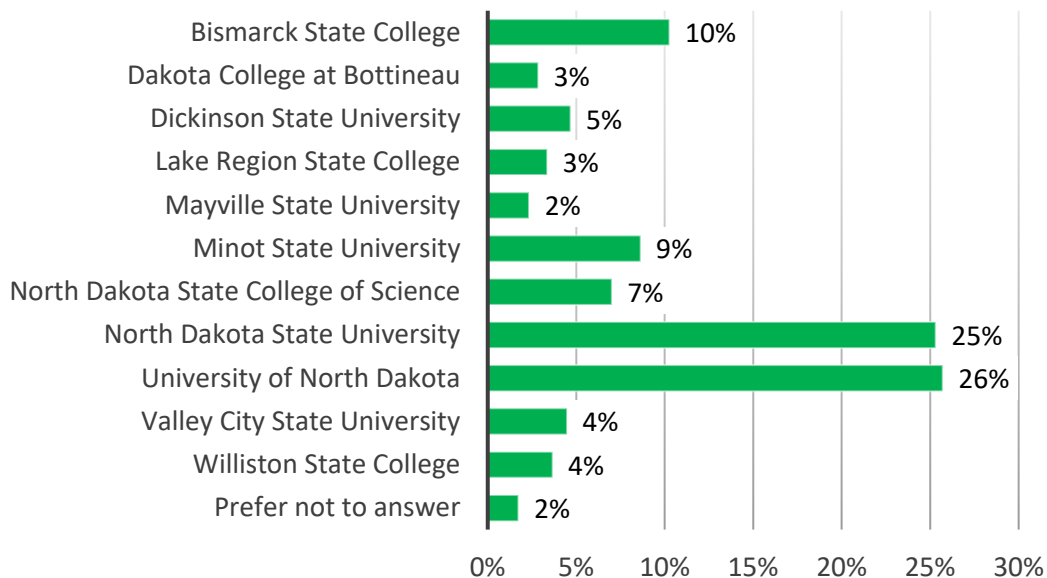


## Appendix D: Faculty Survey Results

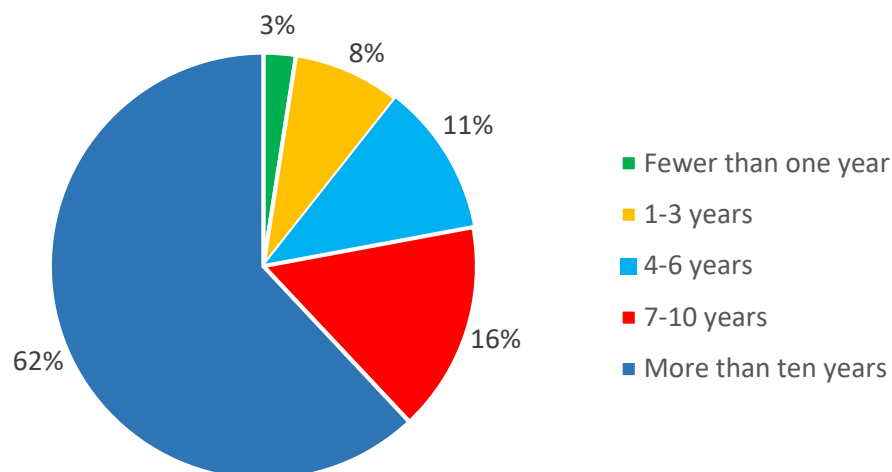
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The faculty survey consisted of the following questions and results. It was sent to all faculty at all NDUS institutions. A total of 3,673 surveys were sent, and 989 surveys were completed.

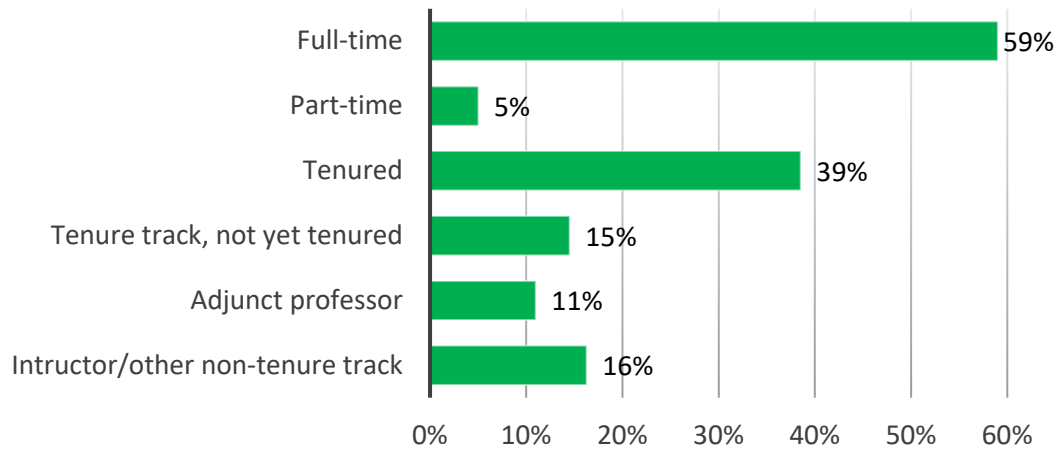
1. What is your current primary institution?



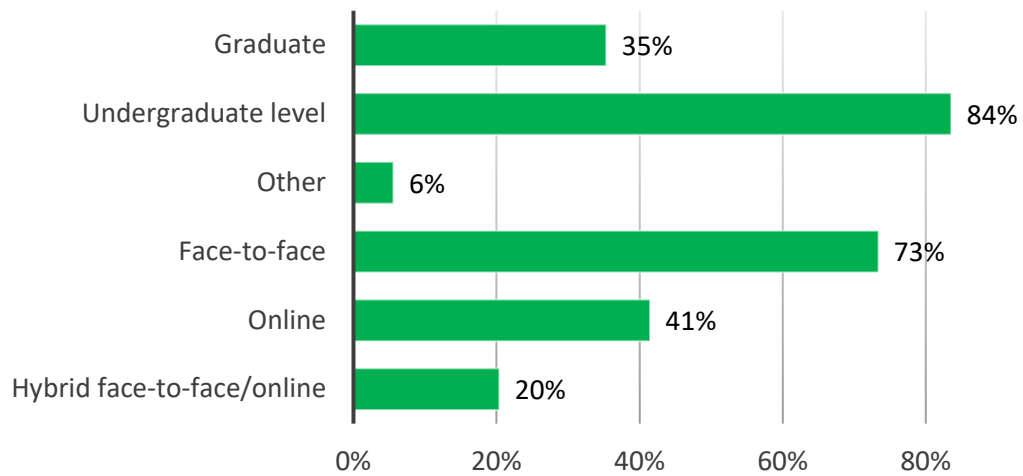
2. How many years (including current year) of teaching experience do you have?



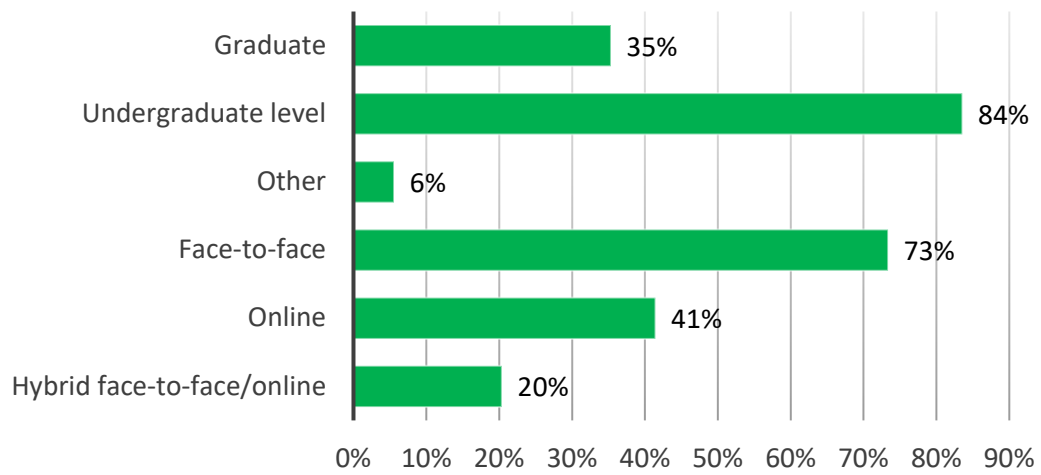
3. Current Teaching Status (select all which apply)



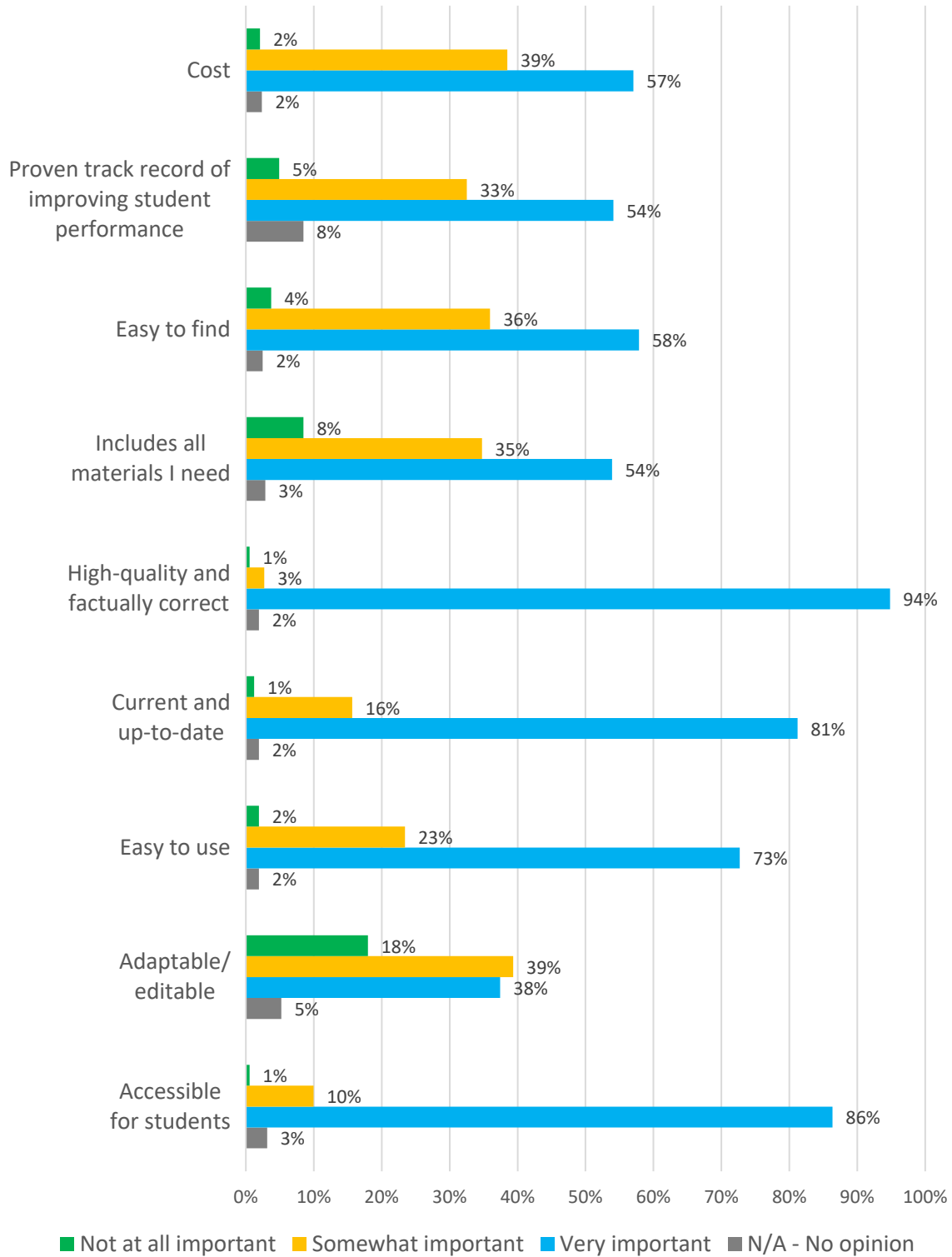
4. Which of the following have you taught during the most recent academic year (2017-2018)? (check all that apply)



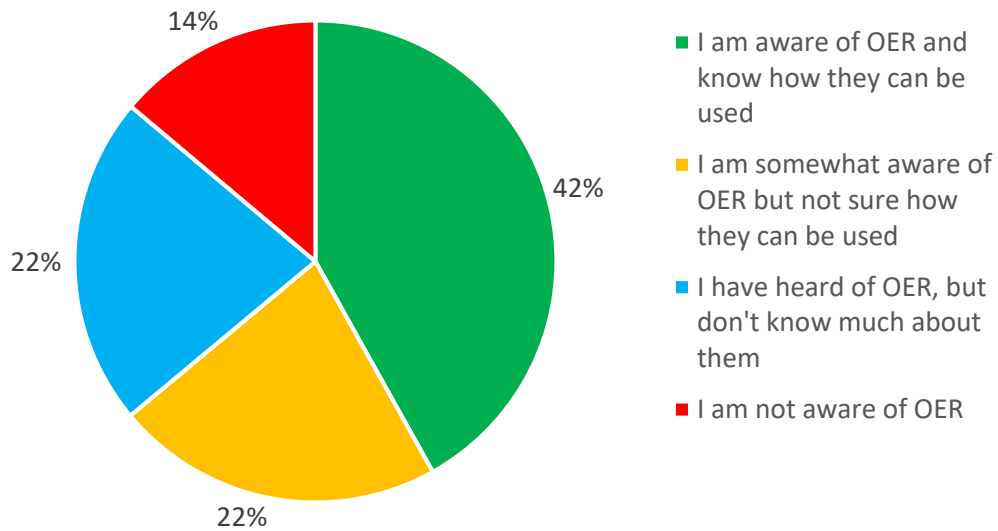
5. Who has a role in selecting the educational resources you use in the courses you teach?  
(please check all which apply)



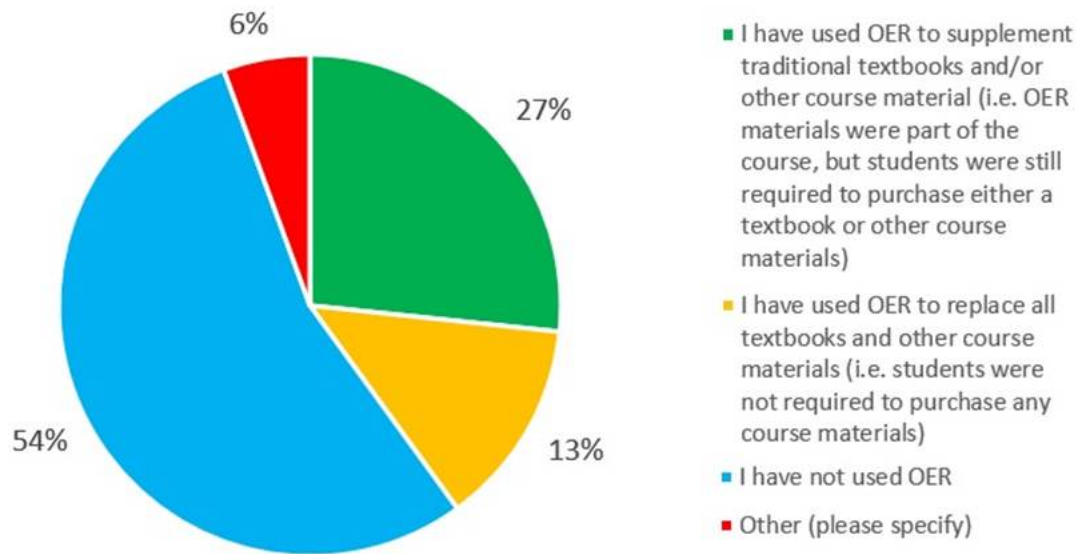
6. When selecting course materials, how important are the following factors to you?



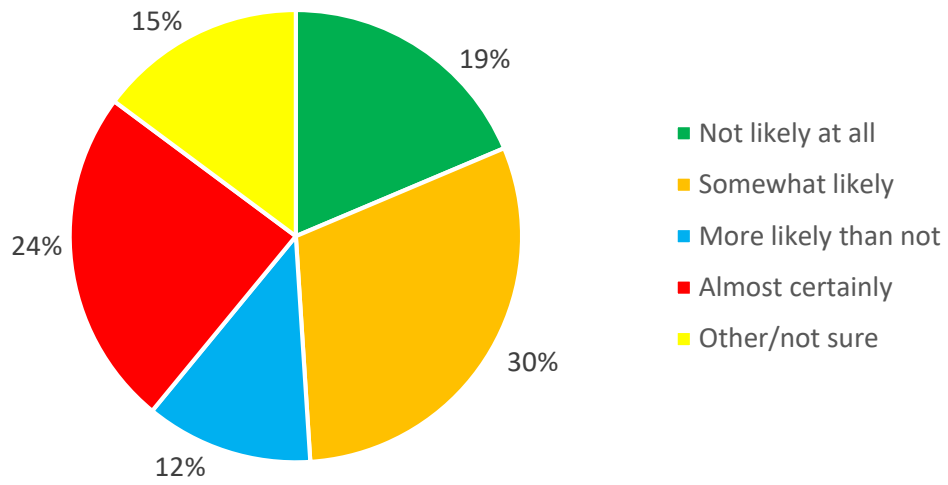
7. How aware are you of Open Educational Resources (OER)?



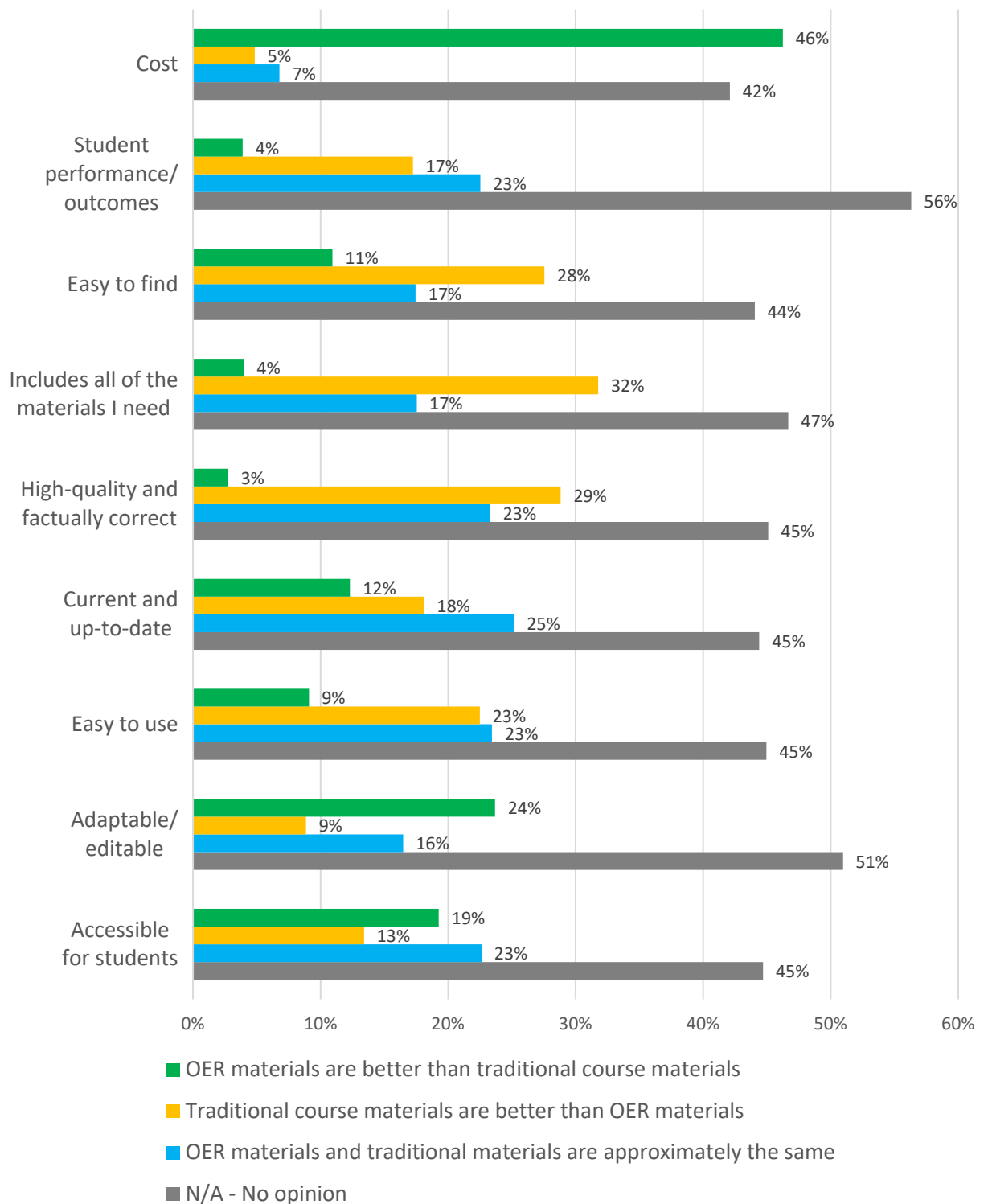
8. Please select the statement which best describes your level of experience with respect to OER:



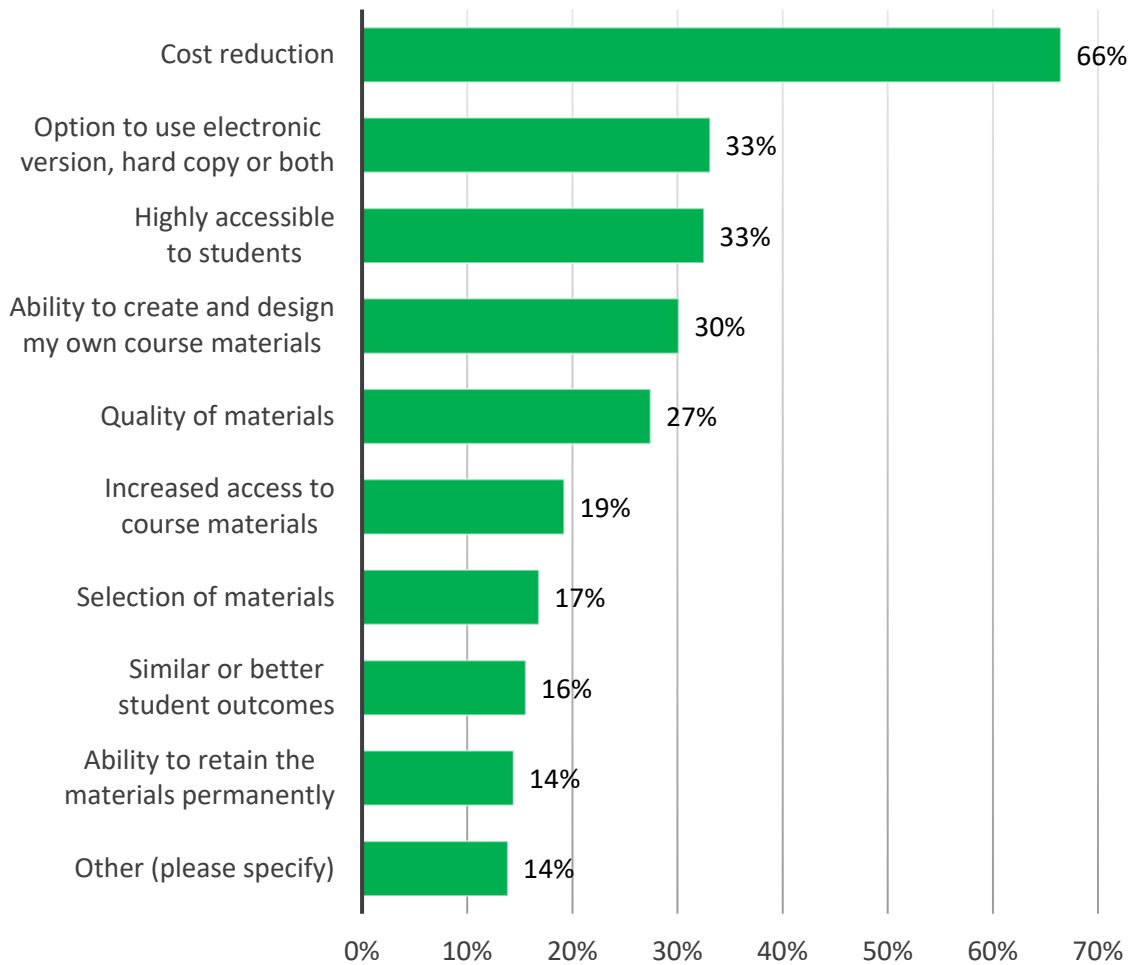
9. How likely are you to use OER (or use OER again) within the next three academic years?



10. How would you compare OER to that of traditional (publisher-provided) resources, with respect to the following factors?

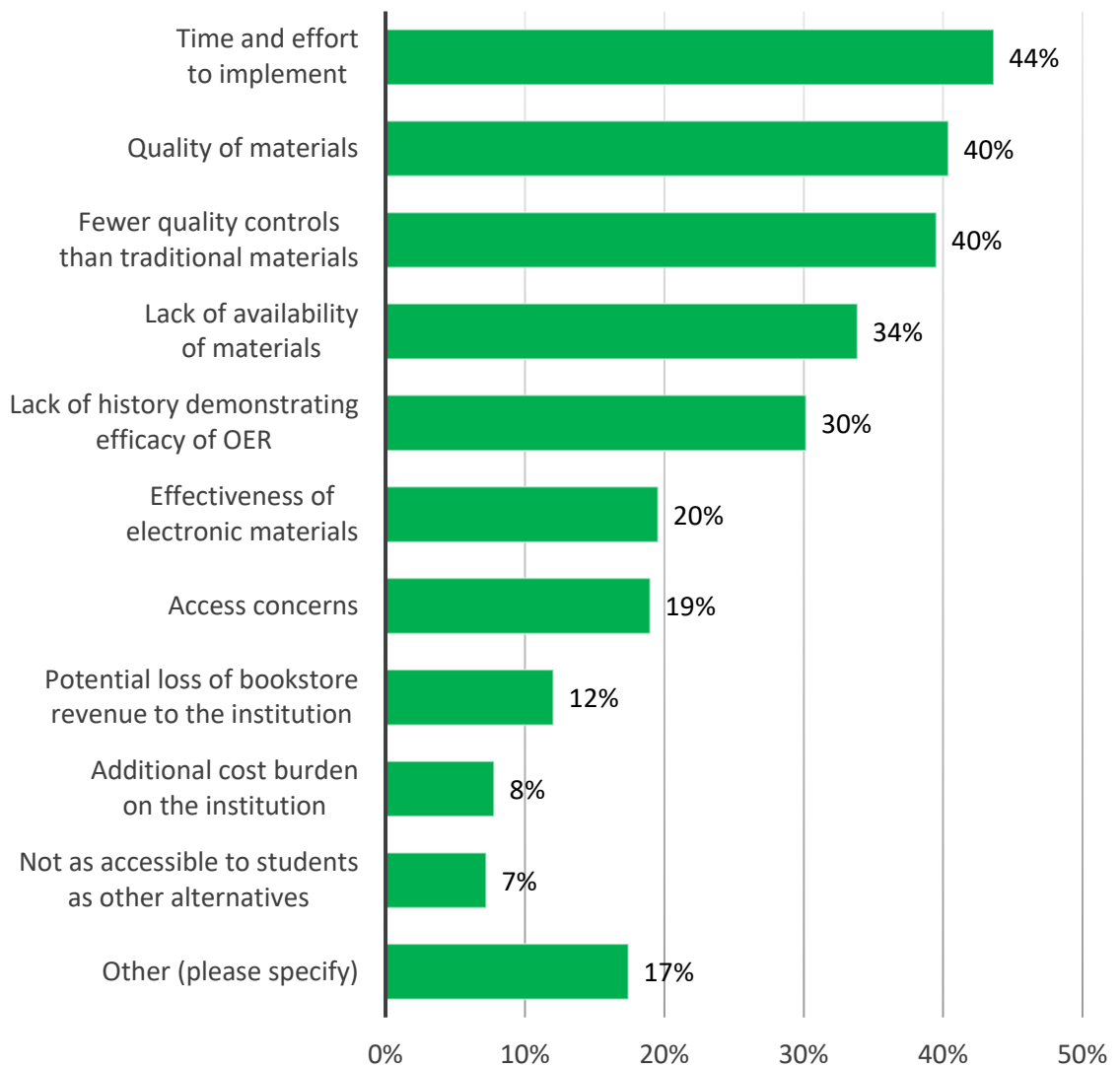


11. What are the most important positive factors regarding OER? (please select your top 3 answers)

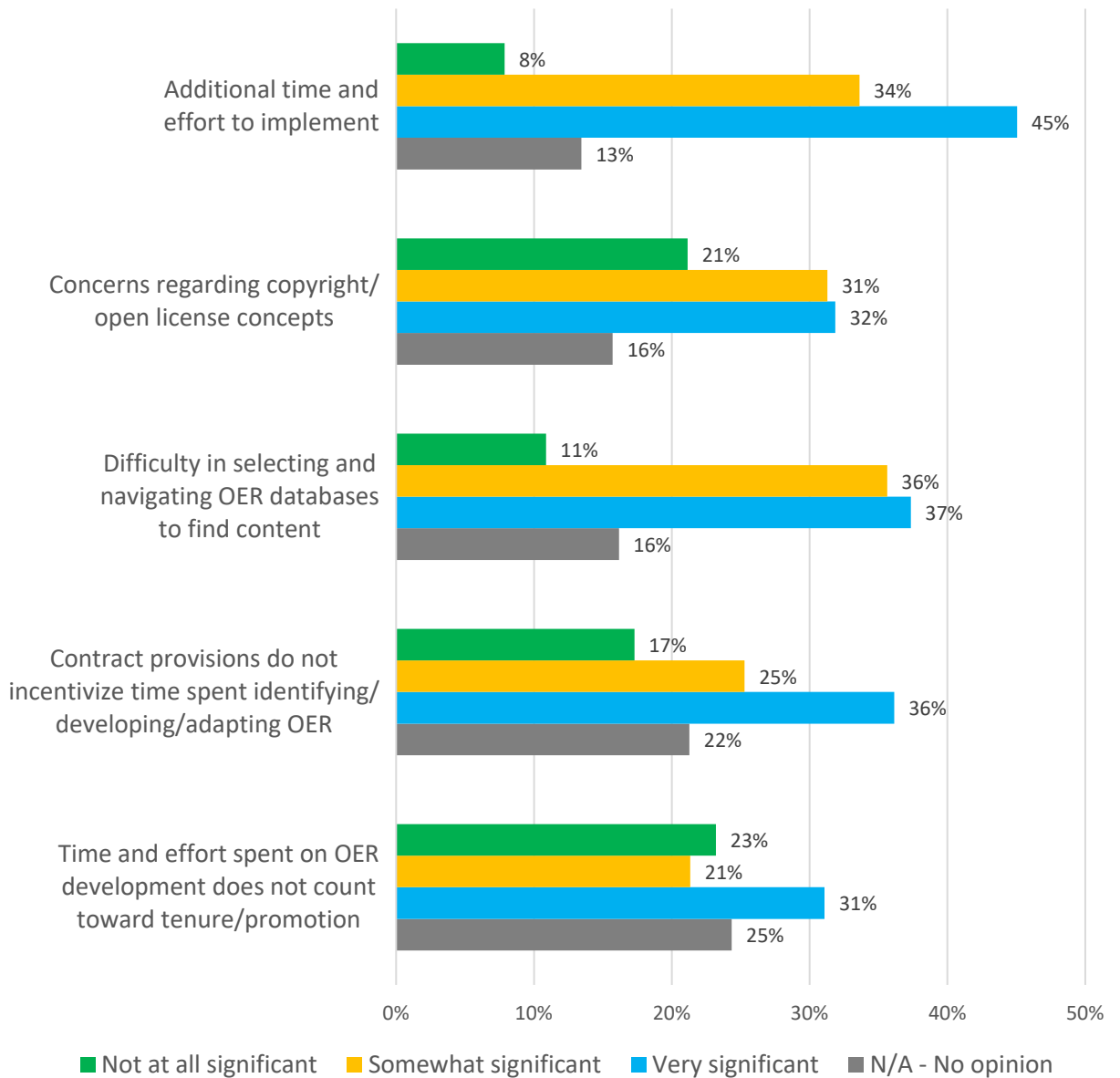




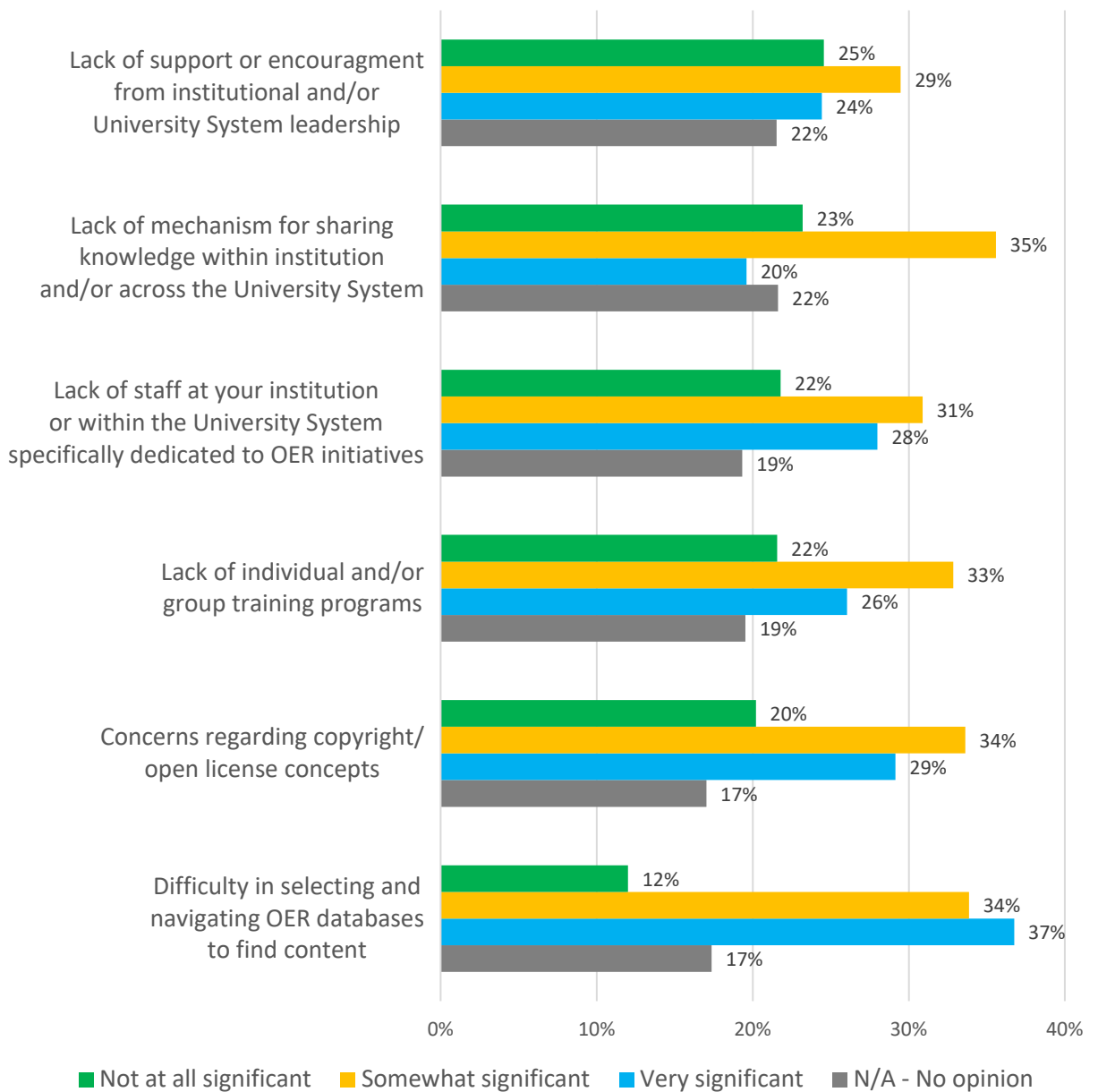
12. What are the most significant negative factors regarding OER? (please select your top 3 answers)



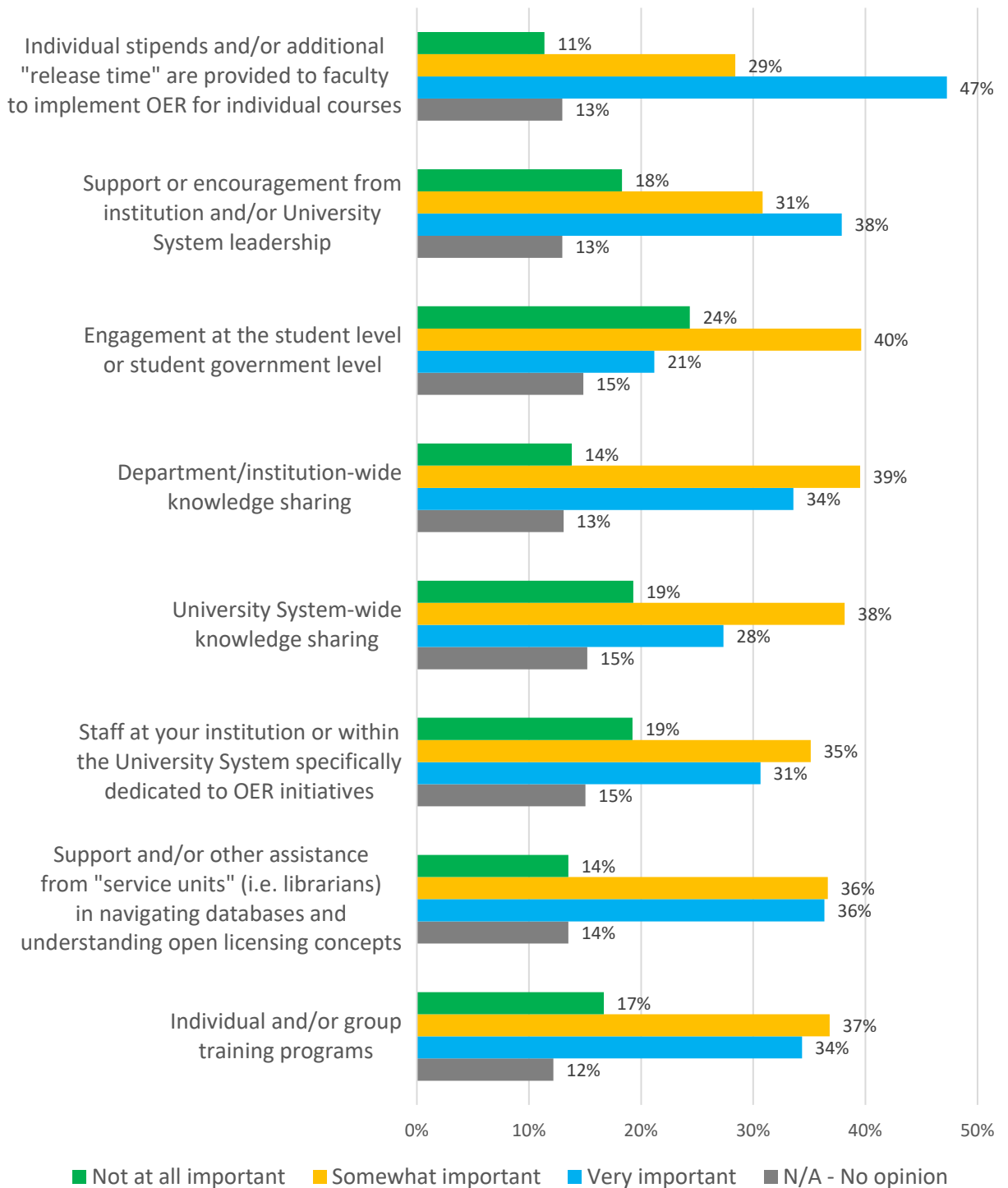
13. How significant are/would the following personal/professional barriers be in deterring you from adopting OER in your courses?



14. How significant are/would the following support/administrative barriers be in deterring you from adopting OER in your courses?



15. How important are/would the following incentives be in terms of encouraging you to adopt OER in your courses?



16. Is there anything else you would like to share regarding your thoughts or experiences regarding OER?

Responses varied.

17. Would you be willing to be contacted by someone from our office for follow-up questions or a brief interview?

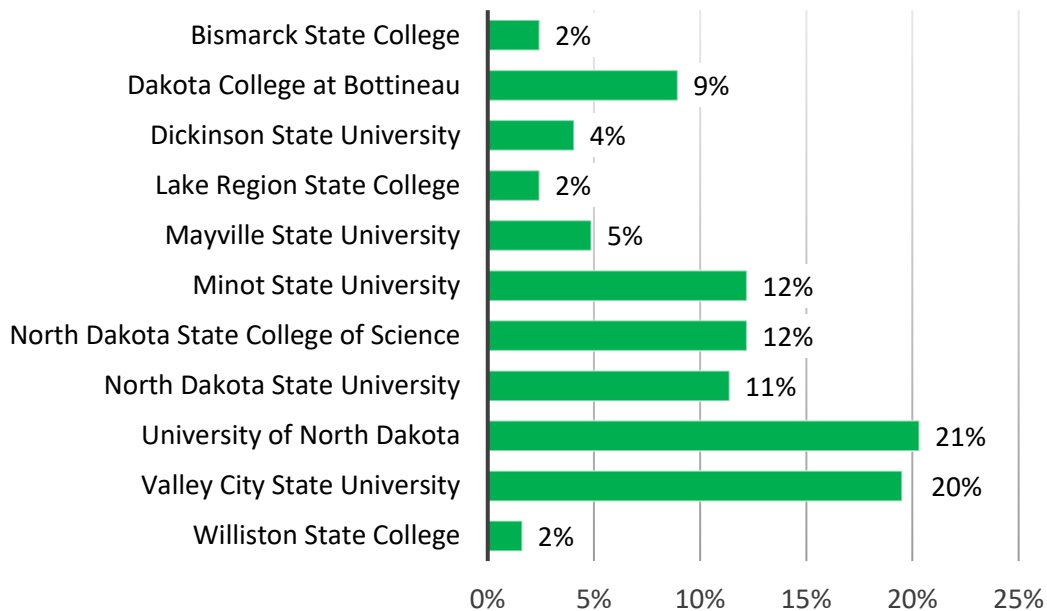
Responses varied.

## Appendix E: Student Survey Results

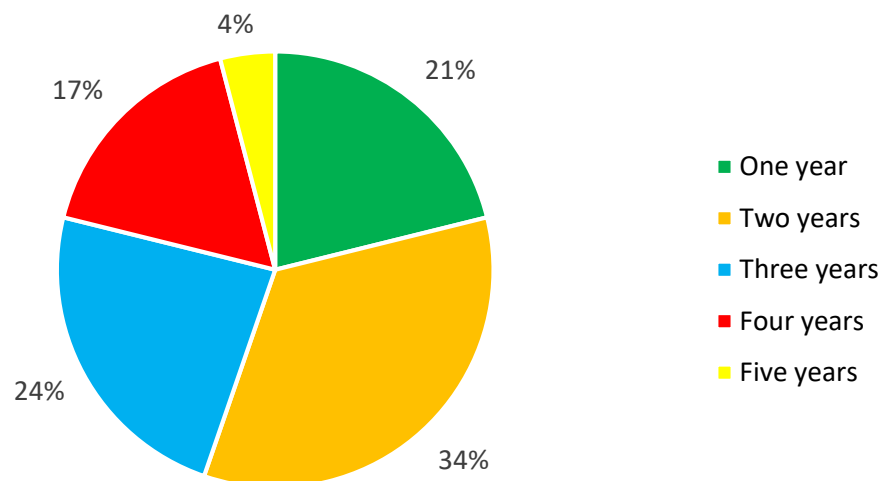
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The student survey consisted of the following questions and results. The students selected to complete the survey were members of student government across all institutions, as well as the members of the North Dakota Student Association. A total of 236 surveys were sent, and 123 surveys were completed.

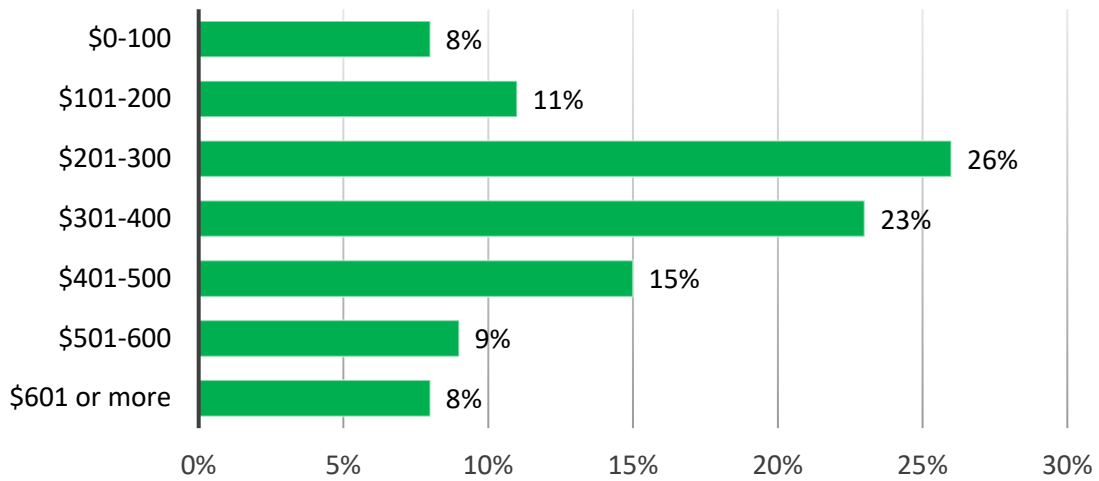
1. Which college or university are you currently attending?



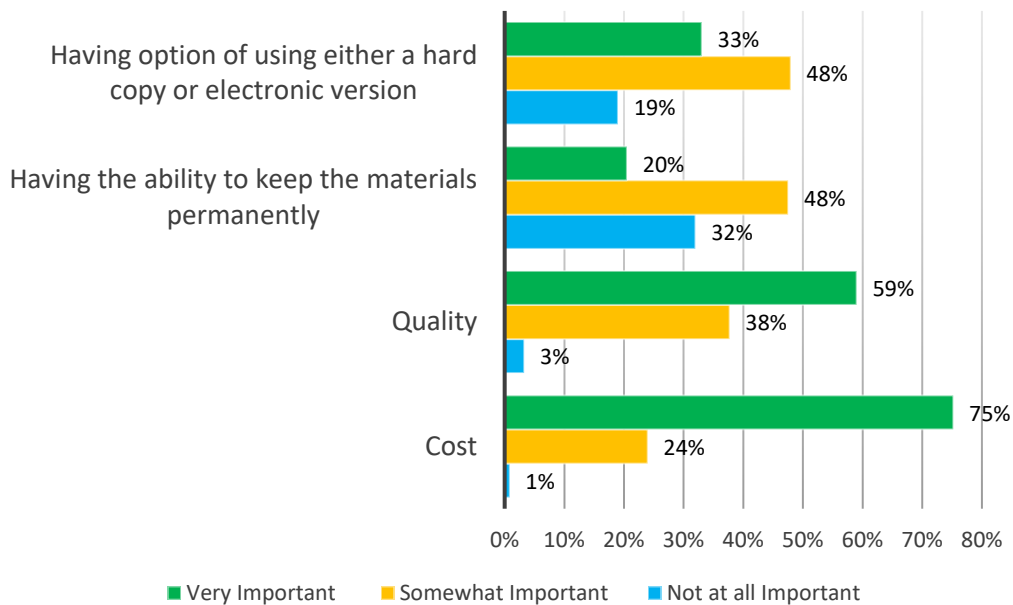
2. How many years (including current year) have you attended your current institution?



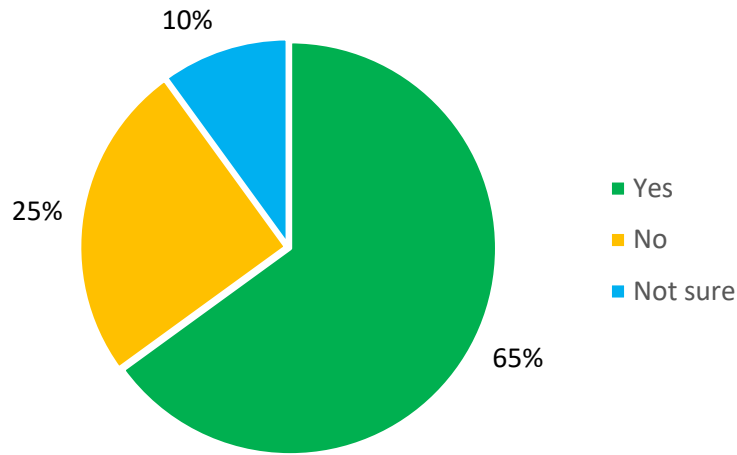
3. Approximately how much did you spend in the Fall 2017 term on textbooks and other institutional materials (such as study guides, subscriptions, course-specific software, etc.)?



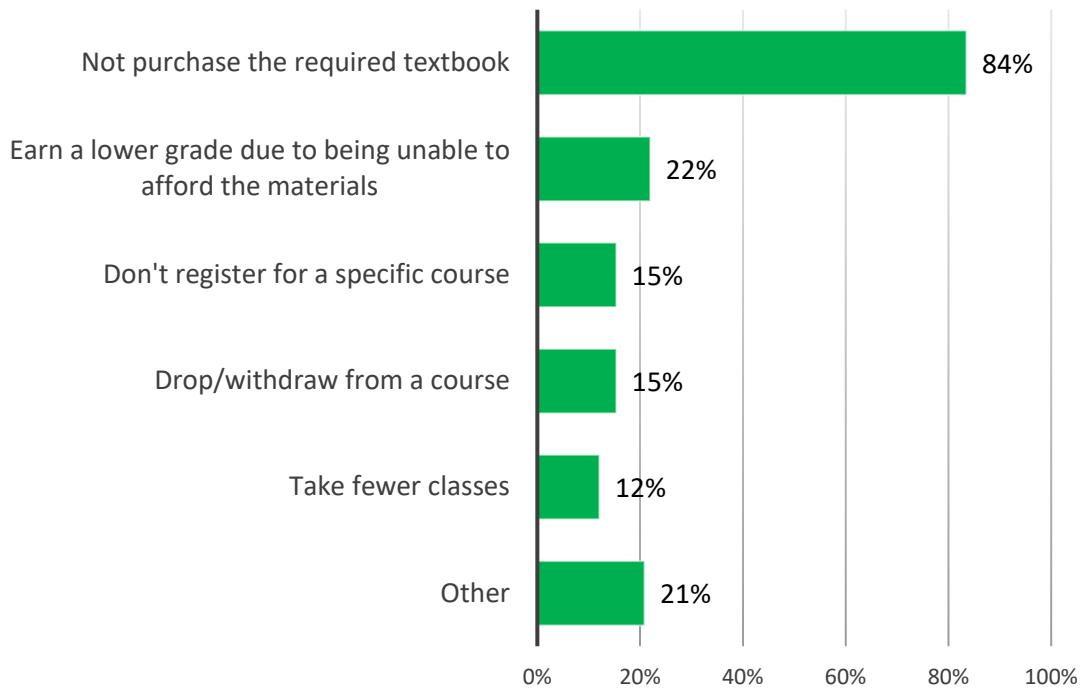
4. With respect to textbooks and other course materials, please rate the following in terms of importance to you:



5. Have you ever paid more by purchasing a book from the bookstore than you would have through a third party because you were able to charge it to your student account at the bookstore?

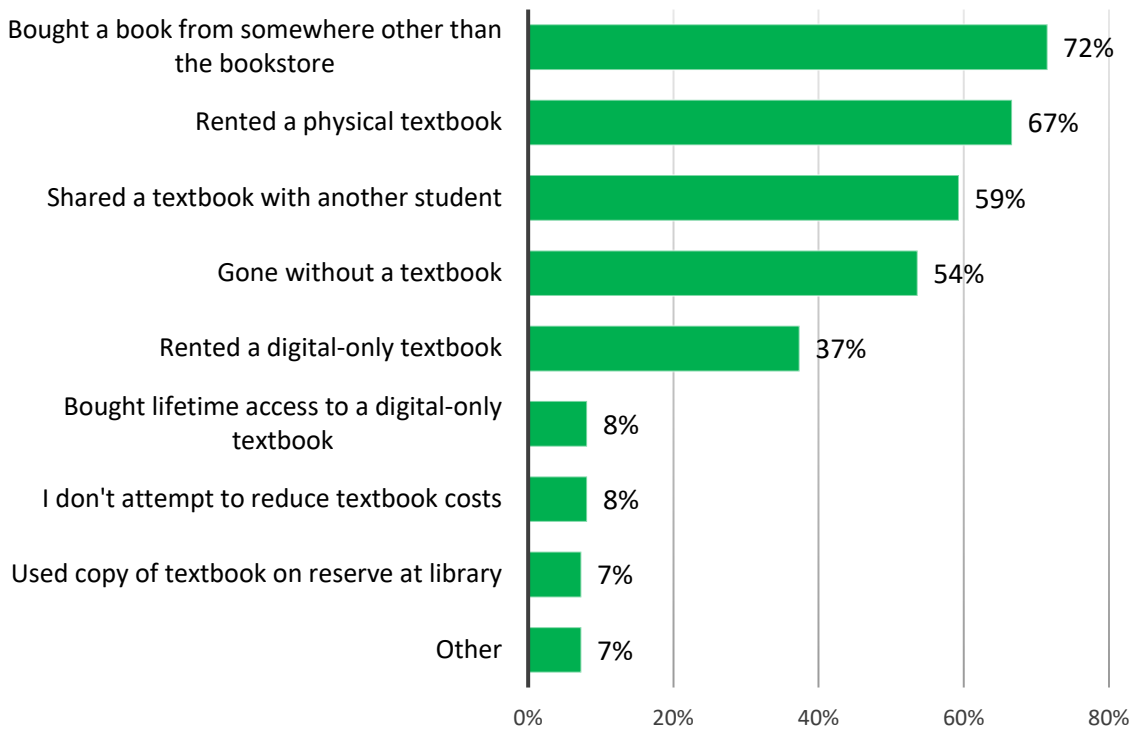


6. Has the cost of textbooks or course materials ever caused you to do the following? (please check all which apply)

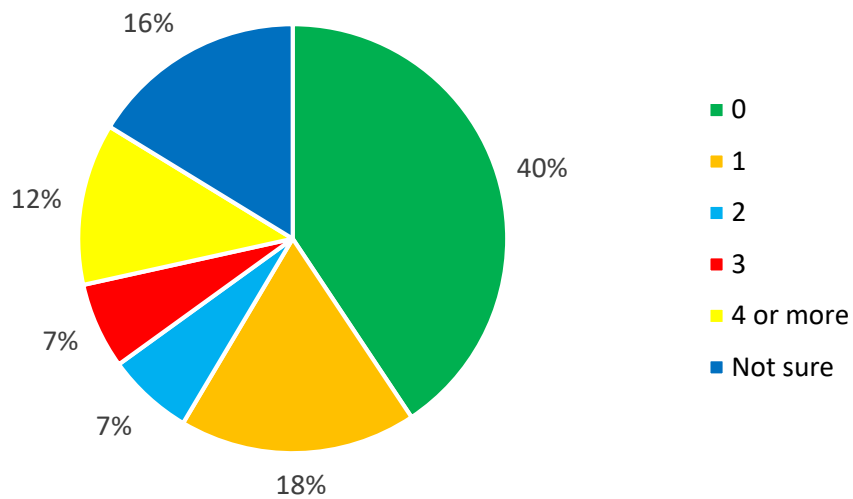




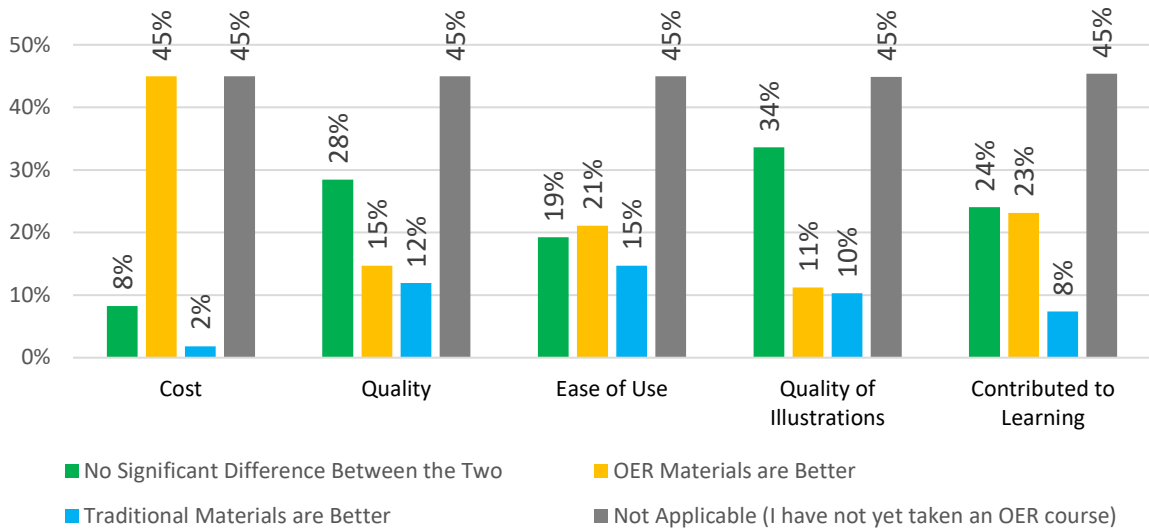
7. What methods have you used to reduce your cost of textbooks? (please check all which apply)



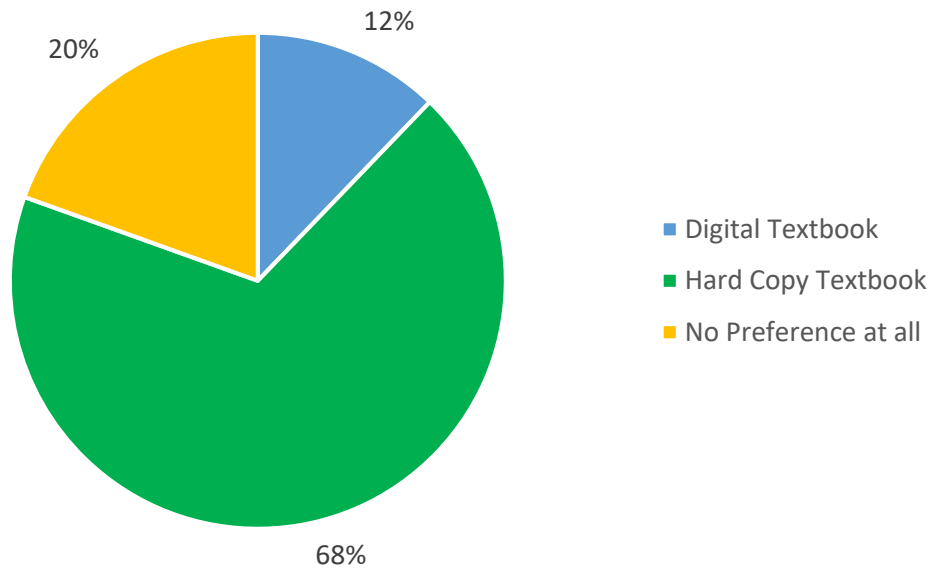
8. In your college/university career up to and including this semester, how many courses have you taken which have used OER course materials?



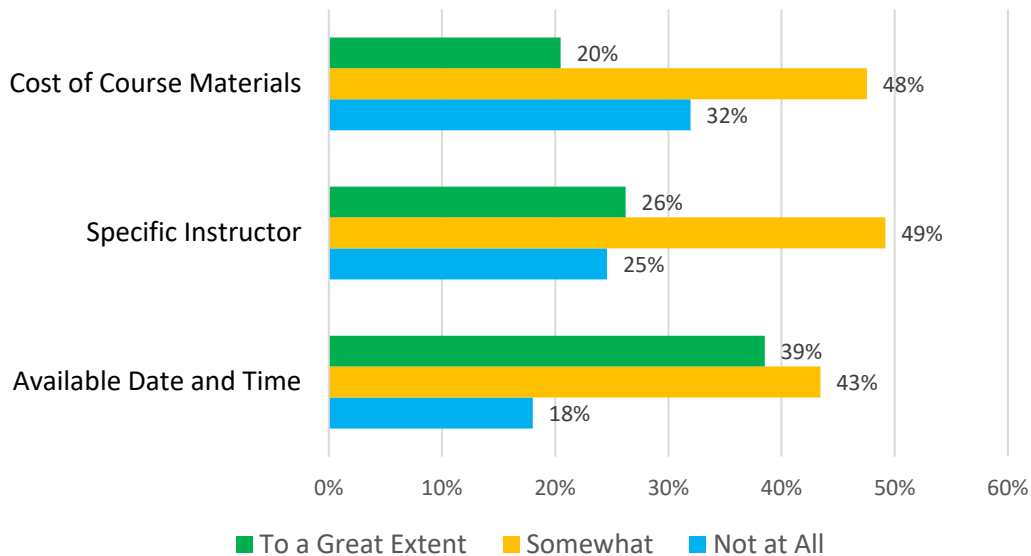
9. If you have taken one or more OER courses, how would you rate the following for OER materials compared to traditional materials you have used?



10. If cost were not a factor, which of the following would you generally prefer?



11. If, at time of registration, you were provided the course materials requirements (that is, you knew in advance what textbooks and other materials would be required for all sections of a particular course), to what extent would the cost of course materials influence your decision to enroll in a specific course or section?
12. If, at time of registration, you were provided the course materials requirements (that is, you knew in advance what textbooks and other materials would be required for all sections of a particular course), to what extent would the specific instructor influence your decision to enroll in a specific course or section?
13. If, at time of registration, you were provided the course materials requirements (that is, you knew in advance what textbooks and other materials would be required for all sections of a particular course), to what extent would the available date(s) and time(s) influence your decision to enroll in a specific course or section?



14. Are there any other comments or suggestions you would like to share regarding course materials, OER, or other related topics? (use as much space as you need on this page)

Responses varied.

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