VIRGINIA COMMONWEALTH UNIVERSITY
BOARD OF VISITORS
ACADEMIC AND HEALTH AFFAIRS COMMITTEE
9:20 A.M.**
September 14, 2018
JAMES BRANCH CABELL LIBRARY
901 PARK AVENUE – ROOM 303
RICHMOND, VIRGINIA

D R A F T AGENDA

1. CALL TO ORDER	Dr. Carol Shapiro, *Chair*
2. APPROVAL OF AGENDA	Dr. Carol Shapiro, *Chair*
3. APPROVAL OF MINUTES (May 11, 2018)	Dr. Carol Shapiro, *Chair*
4. ACTION ITEMS: a. Proposal to Modify the Ph.D. in Biomedical Engineering b. New Military-Affiliated Students Policy	Dr. Carol Shapiro, *Chair*
5. REPORT FROM PROVOST a. Review of Committee Dashboard *i. Financial Aid Report* b. Strategic Enrollment Management Report	Dr. Gail Hackett, *Provost and Vice President for Academic Affairs*
6. INFORMATIONAL REPORTS	
a. Online@VCU	Dr. Monica Orozco, *Executive Director, Online@VCU*
b. Affordable Course Content	Mr. John Ulmschneider, *Dean, VCU Libraries and University Librarian*
c. East End Health & Wellness Initiative	Dr. Marsha Rappley, *Vice President for Health Sciences*
7. CONSTITUENT REPORTS	
a. Faculty Representatives	Ms. Holly Alford, *Faculty Senate Board of Visitors Representative* Dr. Scott Street, *alternate and president, VCU Faculty Senate*

b. Staff Representatives	Mr. Nick Fetzer, *Staff Senate Board of Visitors Representative, VCU Staff Senate* Ms. Ashley Staton, *alternate, Staff Senate*
c. Student Representatives	Dhruv Sethi, *Graduate Student Representative* Jacob Parcell, *Undergraduate Student Representative*
8. CLOSED SESSION Freedom of Information Act Sections 2.2-3711(A) (7) and (29) for the discussion of possible litigation and contract negotiations.	Dr. Carol Shapiro, *Chair*
9. RETURN TO OPEN SESSION AND CERTIFICATION Approval of Committee Action on matters discussed in closed session, if necessary	Dr. Carol Shapiro, *Chair*
10. OTHER BUSINESS	Dr. Carol Shapiro, *Chair*
11. ADJOURNMENT	Dr. Carol Shapiro, *Chair*

****The start time for the Board of Visitors meeting is approximate only. The meeting may begin either before or after the listed approximate start time as Board members are ready to proceed.**

DRAFT

BOARD OF VISITORS
ACADEMIC AND HEALTH AFFAIRS COMMITTEE
9:20 A.M.
May 11, 2018
JAMES BRANCH CABELL LIBRARY
901 PARK AVENUE, ROOM 303, RICHMOND, VIRGINIA

COMMITTEE MEMBERS PRESENT

Dr. Carol S. Shapiro, Chair
Dr. Robert D. Holsworth, vice chair
Mr. H. Benson Dendy III
Mr. William M. Ginther
Mr. Ed McCoy
Mr. Tyrone Nelson
Dr. Shantaram Talegaonkar
Mr. G. Richard Wagoner, Jr.

OTHERS PRESENT

Dr. Michael Rao, President
Dr. Gail Hackett, Provost and Vice President for Academic Affairs
Dr. Marsha Rappley, Vice President for Health Sciences
Dr. Frank Macrina, Vice President for Research and Innovation
Ms. Elizabeth L. Brooks, Associate University Counsel
Ms. Jamie Stillman, Director of Strategic Communications, Office of the Provost
Mr. Justin Mattingly, reporter, Richmond Times-Dispatch
Staff and students from VCU and VCUHS

CALL TO ORDER

Dr. Carol Shapiro, Chair of Academic and Health Affairs Committee, called the meeting to order at 9:20 a.m.

APPROVAL OF MINUTES

On motion made and seconded, the Academic and Health Affairs Committee approved the Minutes of the meeting held **March 22, 2018**. A copy of the minutes can be found on the VCU website at the following webpage http://www.president.vcu.edu/board/committeeminutes.html.

ACTION ITEMS

On motion made and seconded, the Academic and Health Affairs Committee approved the following proposals, policy and bylaws and recommends that these items be submitted to the full Board of Visitors for approval:

1) Proposal to offer a new Graduate Certificate in Special Education K-12 Teaching;
2) Proposal to offer a new Ph.D. in Special Education and Disability Policy;
3) the revised Student Code of Conduct Policy; and

4) the revised Bylaws of the Faculty.

REPORTS

Dr. Hackett presented the committee dashboard, noting that there were few new metrics to report. Preliminary new numbers will be available in the fall, with final numbers at the December meeting.

Professors Jennifer Johnson & Faye Prichard, co-chairs of the General Education Task Force, presented an overview of the university's new general education program, called GenEd30. The framework was developed and vetted by the faculty. Over the next year, two new committees will be convened to focus on curriculum and assessment. Once completed, the program will be vetted through all university academic committees for approval. Implementation of GenEd30 will take place no later than fall 2020. Overall, this new general education program will allow general education courses to be portable, not tied to a specific major. It was noted that since programs will not include general education courses as part of the specific requirements of a major, students will be less likely to lose important credits when changing majors, which can reduce debt. In addition, this change also allows departments to be more innovative in their course offerings.

Dr. Deborah Noble-Triplett, senior vice provost for academic affairs, informed the committee that the VCU R.E.A.L (Relevant, Experiential and Applied Learning) Task Force submitted a completed report with recommendations to President Rao last fall. With his approval a search for a new associate vice provost for R.E.A.L. was launched and it is expected that an appointment will be announced soon. It was noted that further updates will be provided at a future committee meeting during the upcoming academic year. Additional discussion involved the advising component of R.E.A.L. Dr. Maggie Tolan, interim associate vice provost for student success, briefly described the role of advisors in providing resources and support to students in meeting their academic and career goals.

Dr. Noble-Triplett also reported that the international pathway program that was developed through the university's contract with Navitas –the VCU Global Student Success Program – now has a director and two staff members on campus.

Ms. Holly Alford, the faculty representative, reported that she and Faculty Senate President Scott Street, as well as other members of the university's academic leadership, attended a two-day SCHEV-sponsored institute on Strengthening Virginia Transfer Outcomes. Participants were pleased to learn that VCU is well respected by Virginia's community college leadership. She also announced that Carmen Rodriguez has been elected as Vice President of the Faculty Senate of Virginia. Professor Rodriguez is a faculty member in the Department of Biology and also serves on the VCU Faculty Senate.

Ms. Lauren Katchuk, the staff representative, thanked the Faculty Senate for their help this year in ensuring a smooth transition as the Staff Senate prepares to grow dramatically when the new

human resources transition is complete this summer. She also introduced the incoming president of the Staff Senate, Mr. Nick Fetzer, director of sponsored programs for VCU Life Sciences. Ms. Sarah Izabel and Ms. Katherine Pumphrey, the student representatives, provided their last report as student representatives. Since the committee's March meeting, the students held a successful Wellness Block Party, which reached about 300 community members, and highlighted student achievements through the Leadership and Service Awards and the Student Organization Awards. The proposed new student representatives for the Board of Visitors were also introduced: Mr. Jacob Powell, undergraduate representative, and Mr. Dhruv Sethi, graduate representative.

OTHER NOTES

Dr. Shapiro announced that additional updates that have been requested by committee members will be made at future meetings. An update on Online @ VCU will be presented in September 2018 and an update on VCU Career Services will be presented in December 2018

CLOSED SESSION

On motion made and seconded, the Academic and Health Affairs Committee of the Board of Visitors of Virginia Commonwealth University convened a closed session under **Section 2.2-3711(A)(7)** to receive legal advice about matters that pertain to potential litigation.

Resolution of Certification

BE IT RESOLVED, that the Committee certifies that, to the best of each member's knowledge, (i) only public business matters lawfully exempted from open meeting requirements under this chapter were discussed in the closed meeting to which this certification resolution applies, and (ii) only such public business matters as were identified in the motion by which the closed session was convened were heard, discussed or considered by the Board.

Vote	Ayes	Nays	Absent
Dr. Carol S. Shapiro, Chair	X		
Dr. Robert D. Holsworth, vice chair	X		
Mr. H. Benson Dendy III	X		
Mr. William M. Ginther	X		
Mr.. Ed McCoy	X		
Mr. Tyrone Nelson	X		
Dr. Shantaram Talegaonkar	X		
Mr. G. Richard Wagoner, Jr.	X		

All members voting affirmatively, the resolution of certification was adopted.

ADJOURNMENT

There being no further business, Dr. Carol Shapiro, Chair, adjourned the meeting at 10:45 a.m.

Virginia Commonwealth University
Proposed Program Brief

Proposal to Modify
Biomedical Engineering, PhD

Overview

VCU requests approval for a substantial modification of the existing Ph.D. in Biomedical Engineering (BME-PH.D.) program. The modification has two major components: 1) reduce the number of credits in the core from 16 to 12 credit hours; and 2) create an entry point for students with an M.S. degree.

The BME-PH.D. program at VCU was established in 1992, making it one of the earliest Biomedical Engineering Ph.D. programs in the country. The field has grown exponentially in the last 25 years and the need for engineers who focus on clinical and biomedical problems has expanded greatly. VCU's BME-PH.D. program has not been substantially revised since its inception. As such, the core of the curriculum needs to be brought into alignment with the current paradigm for research in the field of biomedical engineering and to meet the demands of students already holding a M.S. who seek admission into this degree program.

Method of Delivery

The program will be taught in the traditional classroom format.

Target Implementation Date

Fall 2019.

Demand and Workforce Development

Market demand for biomedical engineers drives student demand for admission. In 2012, "Biomedical Engineer" was listed as #1 in *CNN Money's* ranking of "Best Jobs in America."[1]. BLS statistics show that biotechnology jobs in general and biomedical engineering in particular, are experiencing high growth rates. At the same time, the number of students enrolled in graduate degrees in biomedical engineering has almost doubled in the last ten years.

External Competition

Four BME PhD programs are currently offered at public institutions in Virginia: VCU, Virginia Tech, UVA, and George Mason. The VCU PhD program has been in existence for 26 years; it is ranked #63 nationally among BME Graduate Programs (#38 amongst public institutions).

Target Population

The target population are students with an undergraduate or graduate degree in biomedical engineering or in other engineering fields who are looking to move into biomedical research. Typical candidates are top students who are future leaders either in the biotech industry or in academic or government research. Accepted students are typically well above VCU averages for incoming GPA and GRE.

Impact on Existing Programs/Policies

As this program is already well established, there will be no impact on other programs at VCU or any VCU policies.

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[1] "Best Jobs in America." CNN Money U.S. http://money.cnn.com/pf/best-jobs/2012/snapshots/ Accessed on 1/30/2018.

Impact on Faculty

The Biomedical Engineering Department has made many faculty hires over the last few years, and these hires have made the proposed changes feasible. No new faculty hires are needed to implement and sustain the program.

Funding

The program will incur no additional expenses. It will be based on existing courses taught by the existing faculty and utilize an administrative structure already in place. The Biomedical Engineering Department and the School of Engineering fully support the changes to this program.

Benefit to the University

The BME graduate program is currently the highest ranked program in the School of Engineering. These changes will bring our curriculum into alignment with industry standards, which will improve our ability to recruit top students and thus continue the recent rise in quality of the BME graduate program.

Next Steps

Approving Body	Date	Action
• University Graduate Committee's Programs and Courses	3/27	Approved
• University Graduate Committee	4/10	Approved
• University Council Academic Affairs and University Policy	4/26	Approved
• University Council	5/3	Approved
• President's Cabinet	6/25	Approved
• Board of Visitors	9/14	

Full Proposal

- See attached.

Substantial Modification – Biomedical Engineering, Ph.D.
2/23/18

Contents

Substantial Modification – Biomedical Engineering, Ph.D.
2/23/18

Background

Virginia Commonwealth University (VCU) requests approval for a substantial modification of the existing Ph.D. in Biomedical Engineering (BME-PH.D.) program. The proposed modified program will reside in the School of Engineering, Department of Biomedical Engineering. The target start date is Fall 2019.

VCU seeks two modifications to the Ph.D. in Biomedical Engineering:

1) reduce the number of credits in the core from 16 credit hours to 12 credit hours; and
2) create an entry point for students with a M.S. degree.

The BME-PH.D. program at VCU was established in 1992, making it one of the earliest Biomedical Engineering Ph.D. programs in the country. The field has grown exponentially in the last 25 years and the need for engineers who focus on clinical and biomedical problems has expanded greatly. VCU's BME-PH.D. program has not been substantially revised since its inception. As such, the curriculum needs to be brought into alignment with the current paradigm for research in the field of biomedical engineering and to meet the demands of students already holding a M.S. who seek admission into this degree program.

The purpose of the modified degree program is to prepare researchers and scientists to work in the interface between medicine and engineering in areas such as tissue engineering, rehabilitation science, pharmaceutics, orthopedics, assistive technology, and computational biology.

These proposed modifications arose from BME-PH.D. faculty discussions that began in the summer of 2016 and continued through the 2016-17 academic year. A work group was convened to assess the curriculum and student needs in terms of learning and preparation for entering industry and/or academe.

Modified Degree Program

The current BME-PH.D. program has a core of 16 credit hours. VCU is proposing to modify the core to 12 credit hours. Moreover, the current degree program offers only a B.S. entry. VCU is proposing to add an entry point for students who have completed an M.S. Following are two tables that juxtapose the current and proposed curriculum. The first table pairs the current curriculum with the proposed curriculum with a B.S. entry. The second table pairs the current curriculum with the proposed M.S. entry curriculum.

New courses are indicated with an asterisk.

Current BME-PH.D. (B.S. Entry)	Proposed BME-PH.D. (B.S. Entry)
Core Courses	Core Courses
EGRB 507 Biomedical Instrumentation (3)	EGRB 601 Numerical Methods and Modeling in Biomedical Engineering (4) *

EGBR 603 Biomedical Signal Processing (3) EGBR 604 Fundamentals of Biomechanics (3) EGBR 613 Biomaterials (3) EGBR 690 Biomedical Engineering Seminar (1x4) Total: 16 credits	EGRB 602 Biomedical Engineering Systems Physiology (4) * EGBR 690 Biomedical Engineering Seminar (1x4) Total: 12 credits
Required Courses BIOS or STAT at 500 level or above (3) PHIS 501 Mammalian Physiology (5) Total: 8 credits	Required Courses BIOS or STAT at 500 level or above (3) OVPR 603 Responsible Conduct of Research (1) GRAD 614 Grant Writing (1) Total: 5 credits
	Restricted Electives Choose 3 courses from the following: EGRB 507 Biomedical Instrumentation (3) EGRB 521 Human Factors Engineering (3) * EGBR 603 Biomedical Signal Processing (3) EGBR 604 Fundamentals of Biomechanics (3) EGBR 613 Biomaterials (3) EGRB 616 Cell Engineering (3) Total: 9 credits
Open Electives With the approval of the dissertation advisor, students select 15 credits of graduate coursework. Total: 15 credits	Open Electives With the approval of the dissertation advisor, students select 12 credits of graduate coursework. Total: 12 credits
Dissertation Hours EGRB 697 Directed Research (1-15) Total: 33 credits	Dissertation Hours EGRB 697 Directed Research (1-15) Total: 34 credits
Credits to Degree Total: 72 credits	Credits to Degree Total: 72 credits

Table 1. Biomedical Engineering Ph.D.: Current and Proposed Modified Curriculum (B.S. Entry)

The following table presents the current BME-Ph.D. program alongside the modified BME-Ph.D. program with a M.S. entry. New courses are indicated with an asterisk.

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Current BME-PH.D. (B.S. Entry)	Proposed BME-PH.D. (M.S. Entry)
Core Courses EGRB 507 Biomedical Instrumentation (3) EGBR 603 Biomedical Signal Processing (3) EGBR 604 Fundamentals of Biomechanics	Core Courses EGRB 601 Numerical Methods and Modeling in Biomedical Engineering (4) * EGRB 602 Biomedical Engineering Systems Physiology (4) *

(3) EGBR 613 Biomaterials (3) EGBR 690 Biomedical Engineering Seminar (1x4) Total: 16 credits	EGBR 690 Biomedical Engineering Seminar (1x4) Total: 12 credits
Required Courses BIOS or STAT at 500 level or above (3) PHIS 501 Mammalian Physiology (5) Total: 8 credits	Required Courses BIOS or STAT at 500 level or above (3) OVPR 603 Responsible Conduct of Research (1) GRAD 614 Grant Writing (1) Total: 5 credits
	Restricted Electives Choose 2 courses from the following: EGRB 507 Biomedical Instrumentation (3) EGRB 521 Human Factors Engineering (3) * EGBR 603 Biomedical Signal Processing (3) EGBR 604 Fundamentals of Biomechanics (3) EGBR 613 Biomaterials (3) EGRB 616 Cell Engineering (3) Total: 6 credits
Open Electives With the approval of the dissertation advisor, student selects 15 credits of graduate coursework. Total: 15 credits	Open Electives With the approval of the dissertation advisor, student selects 3 credits of graduate coursework. Total: 3 credits
Dissertation Hours EGRB 697 Directed Research (1-15) Total: 33 credits	Dissertation Hours EGRB 697 Directed Research (1-15) Total: 34 credits
Credits to Degree Total: 72 credits	Credits to Degree Total: 60 credits

Table 2: Biomedical Engineering Ph.D.: Current and Proposed Modified Curriculum (M.S. Entry)

Appendix A provides further information regarding the changes to the core, required courses, and the addition of the restricted electives.

Curriculum

The curriculum for the BME-PH.D. program with a B.S. entry comprises 72 credit hours. The curriculum for the BME-PH.D. with a M.S. entry comprises 60 credits hours.

Twelve credits of core curriculum are required for all students, regardless of entry path. The intent of the core courses is to prepare students with a biomedical engineer's perspective on the organ systems of the human body, specifically how engineering concepts can be applied to human organ systems to enhance and improve human health and well-being. Additionally, the

core furnishes students with how to use and apply computational methods for modeling biomedical engineering solutions.

Required courses provide students with advanced statistical methods and knowledge necessary for successful grant proposal writing and the ethical conduct of research.

Restricted electives are sub-specialty topics in biomedical engineering.

All students complete 34 credit hours of directed research, culminating in a dissertation.

New courses are indicated with an asterisk. Course credit hour value is indicated parenthetically. All students attend full-time.

BME-PH.D. - B.S Entry

Core Requirements: 12 credits
EGRB 601 Numerical Methods and Modeling in Biomedical Engineering (4)*
EGRB 602 Biomedical Engineering Systems Physiology (4)*
EGBR 690 Biomedical Engineering Seminar (1x4)

Required Courses: 5 credits
BIOS or STAT at 500 level or above (3)
OVPR 603 Responsible Conduct of Research (1)
GRAD 614 Grant Writing (1)

Restricted Electives: 9 credits
Students will select 3 courses from the following list:
EGRB 507 Biomedical Instrumentation (3)
EGRB 521 Human Factors Engineering (3) *
EGBR 603 Biomedical Signal Processing (3)
EGBR 604 Fundamentals of Biomechanics (3)
EGBR 613 Biomaterials (3)
EGRB 616 Cell Engineering (3)

Electives: 12 credits
With the approval of the dissertation advisor, student selects 12 credits of graduate coursework.

Dissertation: 34 credits
EGRB 697 Directed Research (1-15)

BME-PH.D. - M.S Entry

Core Requirements: 12 credits
EGRB 601 Numerical Methods and Modeling in Biomedical Engineering (4) *
EGRB 602 Biomedical Engineering Systems Physiology (4) *
EGBR 690 Biomedical Engineering Seminar (1x4)

Required Courses: 5 credits
BIOS or STAT at 500 level or above (3)
OVPR 603 Responsible Conduct of Research (1)
GRAD 614 Grant Writing (1)

Restricted Electives: 6 credits
Students will select 2 courses from the following list:
EGRB 507 Biomedical Instrumentation (3)
EGRB 521 Human Factors Engineering (3) *
EGBR 603 Biomedical Signal Processing (3)
EGBR 604 Fundamentals of Biomechanics (3)
EGBR 613 Biomaterials (3)
EGRB 616 Cell Engineering (3)

Elective: 3 credits
With the approval of the dissertation advisor, student selects 3 credits of graduate coursework.

Dissertation: 34 credits
EGRB 697 Directed Research (1-15)

Appendix B provides sample plans of study for the B.S. entry and the M.S. entry. All students attend full-time.

Appendix C provides VCU Bulletin descriptions of the core courses, required courses, and restricted electives.

Student Assessment

The purpose of the Biomedical Engineering Ph.D. curriculum is to prepare biomedical engineering students to be scientists and researchers who contribute in biomedicine and bioengineering. The curriculum is designed to provide students with technical fundamentals for problem posing, problem solving, and research design; content in engineering and the life sciences; and the ability to communicate effectively.

Learning Outcomes

- Apply Advanced Knowledge: Graduates will apply advanced knowledge of mathematics, biomedical sciences, and engineering to complex biomedical problems.
- Communicate Effectively: Graduates will demonstrate the ability to communicate effectively to engineers, scientists, and the layperson.
- Solve problems.: Graduates will demonstrate the ability to identify, formulate, and solve biomedical engineering problems.
- Design and Conduct Research: Graduates will demonstrate the ability to identify pertinent research problems, to formulate and execute a research plan, and to generate and analyze research results.

Assessments

Formative assessments such as exams, projects, presentations, and lab work are administered in courses. Summative assessments are administered at key points in a student's progress through the program: a written and oral comprehensive examination (upon completion of the first year) that tests core knowledge and the ability to apply it to problems; a doctoral research proposal that examines a student's readiness to conduct dissertation research; and the doctoral dissertation defense which assesses the student's ability to pose and solve problems, conduct research, and to communicate effectively. At VCU, evaluating the compliance and quality of a degree program's student assessment plan is part of academic program review.

Employment Skills/Workplace Competencies

Graduates of the Biomedical Engineering Ph.D. program will be prepared to do the following in the workplace:

- Design systems and products, such as artificial organs, artificial devices that replace body parts, and machines for diagnosing medical problems.
- Bring together knowledge from many technical sources to develop new procedures or research clinical problems.
- Evaluate the safety, efficiency, and effectiveness of biomedical products and equipment.
- Collaborate with life scientists, chemists, and medical scientists to research the engineering aspects of biological systems of humans and animals.
- Work in multi-disciplinary teams in manufacturing, universities, hospitals, and research facilities of companies, universities, and medical institutions. The biomedical engineer, given the cross-disciplinary preparation in engineering and life sciences, is prepared to provide a coordinating function in multidisciplinary contexts.
- Develop mathematical and statistical models for testing biomedical products and processes.

Rationale for Proposed Modified Degree Program

Modifying the Core: The goal of the Biomedical Engineering Ph.D. program is to train students to work in fields at the interface of medicine and engineering, including both industry and academic positions in fields such as tissue engineering, rehabilitation science, pharmaceutics, orthopedics, assistive technology, and computational biology. The Biomedical Engineering Ph.D. program was created in 1992, at a time when Biomedical Engineering was only beginning to emerge as an engineering discipline. Biomedical Engineering has grown exponentially as a field over the past two decades, and the need for engineers who focus on clinical and biomedical problems has expanded greatly.

As the field of Biomedical Engineering has expanded in size, it has also expanded dramatically in scope. Twenty years ago, Biomedical Engineering was limited primarily to mechanical and electrical engineering problems that had a clinical or medical component. Today, Biomedical Engineering encompasses truly interdisciplinary work. For example, the area of mechanobiology studies how cells communicate by applying forces on neighboring cells: this subfield has become a major area of research in the medical sciences and it requires a deep

understanding of physics and mechanics and deep knowledge of cell biology and molecular biology. Similarly, brain-machine interface research investigates how to design smart machines to directly interact with neurons in the brain. This subfield requires an in-depth understanding of electronics and instrumentation as well as neuroscience. As such, there is a sustained need for engineers with this unique skill set in the workplace. The US Bureau of Labor Statistics (BLS) estimates that in 2016 there were 22,300 jobs for biomedical engineers with a projected 7% growth in jobs between 2016 and 2026.[1]

An Entry Point for MS Students: When the BME-PH.D. program was initiated 25 years ago, few applicants had a M.S. degree in Biomedical Engineering because there were few biomedical engineering programs. in existence. Most applicants had a B.S. degree in a different engineering discipline, and thus needed to undertake a full slate of biomedical engineering courses. Today, applicants to the current BME-PH.D. program frequently have achieved a M.S. in Biomedical Engineering. Adding the M.S. entry point will enable students with an M.S. to see readily program requirements and time to degree.

Student Projected Enrollment

Market demand for biomedical engineers drives student demand for admission. In 2012, "Biomedical Engineer" was listed as #1 in *CNN Money's* ranking of "Best Jobs. in America."[2] As the BLS statistics show, biotechnology jobs in general, and biomedical engineering in particular, are experiencing high growth rates. At the same time, the number of students enrolled in graduate degrees in biomedical engineering has almost doubled in the last ten years.

At VCU, the student demand for the current Biomedical Engineering Ph.D. program is illustrated by the table below.

Fall 13 Enrollment	Fall 14 Enrollment	Fall 15 Enrollment	Fall 16 Enrollment	Fall 17 Enrollment
36	27	27	28	33

Table 3: Biomedical Engineering, Ph.D. Enrollment. VCU, Office of Planning and Decision Support, Enterprise Analytics and Advanced Research

[1] "Biomedical Engineers." Occupational Outlook Handbook, Bureau of labor Statistics. https://www.bls.gov/ooh/architecture-and-engineering/biomedical-engineers.htm (Accessed 1/30/18).
[2] "Best Jobs in America." CNN Money U.S. http://money.cnn.com/pf/best-jobs/2012/snapshots/ Accessed on 1/30/2018.

STATE COUNCIL OF HIGHER EDUCATION FOR VIRGINIA
SUMMARY OF PROJECTED ENROLLMENTS IN PROPOSED PROGRAM

Projected enrollment:

Year 1		Year 2		Year 3		Year 4 **Target Year (2-year institutions)**			Year 5 **Target Year (4-year institutions)**		
2019 - 2020		2020 - 2021		2021 - 2022		2022 - 2023			2023 - 2024		
HDCT	FTES	HDCT	FTES	HDCT	FTES	HDCT	FTES	GRAD	HDCT	FTES	GRAD
36	36	39	39	42	42	42	42		45	45	9

Assumptions:
Retention percentage: 100%
Full-time students 100%
Full-time students credit hours per semester: 15
Part-time students credit hours per semester: N/A
Full-time students graduate in 5 years
Program accepts 9 new students per year, in accordance with Strategic Plan growth

Duplication

Virginia Commonwealth University is one of four public institutions in Virginia that offer an Ph.D. in Biomedical Engineering. Other programs are:

School	Program Name	Format
George Mason University	Bioengineering	Traditional
University of Virginia	Biomedical Engineering	Traditional
Virginia Tech	Biomedical Engineering	Traditional

Projected Resource Needs of Proposed Modified Program

Resource Needs

Virginia Commonwealth University has all of the faculty, classified support staff, equipment, library and other resources necessary to offer the modified Ph.D. in Biomedical Engineering. The following categories detail the resources required to operate the program through the target year. Assessments of the need for full-time faculty, part-time faculty, and adjunct faculty are based on the following ratio of student enrollment to faculty effort: 6 student FTE of enrollment requires one FTE faculty for instruction.

Full-time Faculty - No faculty in the Department of Biomedical Engineering will devote more than 50% of teaching effort to the proposed program. All faculty teach across degree programs at graduate levels.

Part-time Faculty – Twenty-one faculty members in the Department of Biomedical Engineering will devote less than 50% of their teaching effort to the proposed program. The Department of Biomedical Engineering has 18 tenured or tenure-track faculty who will each commit 25% of their teaching effort to the core and restricted electives. The faculty roster also includes three term faculty who contribute 50% of their teaching effort to the proposed program. The current use of part-time faculty teaching effort adds up to a 5.50 FTE. Furthermore, the department envisions hiring 6 new tenure-track faculty over the next five years, consistent with recent hiring trends. These 6 faculty will each contribute 0.25 FTE to the program; this will bring the projected total for the 5-year target to 7.0.

Adjunct Faculty – No adjunct faculty will be needed for this program.

Graduate Assistants – Graduate students receive assistantships from the School of Engineering for the first two years of their study with a salary of $26,000. Eighteen students receive theses assistantship salaries annually. After the second year, graduate students are salaried by sponsored research projects.

Classified Positions – Classified support is provided by an administrative assistant. The total effort of the classified employee will be 0.50 FTE. This is an ongoing position.

Equipment (including computers) - All faculty members and graduate assistants have offices and appropriate technology (e.g., computers, software) to conduct their work. The equipment resources are sufficient to initiate and sustain this degree program modification. No additional funds are necessary to initiate and sustain the proposed modified program.

Library - No new library resources will be required to initiate and sustain the proposed modified program. The library has sufficient and appropriate journals, books, on-line journals to support the proposed modified degree program. The library resources are sufficient to initiate and sustain this degree program. No additional funds are necessary to initiate and sustain the proposed modified program.

Telecommunications - Offices and graduate student desks are equipped with conference-call capable telephones. In addition, most computer workstations have video cameras and SKYPE software programs. to provide additional avenues for connecting with others in research and/or teaching. The telecommunication resources are sufficient to initiate and sustain this degree program. No additional funds are necessary to initiate and sustain the proposed modified program.

Space - Faculty members have office space available for their work, and to meet individually with doctoral mentees. There is dedicated space in the School of Engineering's 4 locations (Engineering East, Engineering West, Biotech One, and Biotech Eight) for graduate assistants. The space resources are sufficient to initiate and sustain this degree program. No additional funds are necessary to initiate and sustain the proposed modified program.

Targeted Financial Aid - VCU will not offer any targeted financial aid to initiate and sustain the proposed modified degree program. All Ph.D. students in the program will be supported 100%, including stipend and tuition, as is required by the School of Engineering. Funds are provided by either the Graduate School or by research mentors' extramural funding.

Other Resources (specify) – No additional resources are needed for this program.

Part A: Answer the following questions about general budget information.

Has the institution submitted or will it submit an addendum budget request to cover one-time costs?	Yes_____ No__X__
Has the institution submitted or will it submit an addendum budget request to cover operating costs?	Yes_____ No__X__
Will there be any operating budget requests for this program that would exceed normal operating budget guidelines (for example, unusual faculty mix, faculty salaries, or resources)?	Yes_____ No__X__
Will each type of space for the proposed program be within projected guidelines?	Yes__X__ No_____
Will a capital outlay request in support of this program be forthcoming?	Yes_____ No__X__

Part B: Fill in the number of FTE and other positions needed for the program				
	Program Initiation Year		**Expected by Target Enrollment Year**	
	2119- 2020		**2023- 2024**	
	On-going and reallocated	**Added (New)**	**Added (New)*****	**Total FTE positions**
Full-time faculty FTE*	0.00	0.00	0.00	0.00
Part-time faculty FTE**	5.50	0.00	1.50	7.00
Adjunct faculty	0.00	0.00	0.00	0.00
Graduate assistants (HDCT)	18.00	0.00	0.00	18.00
Classified positions	0.50	0.00	0.00	0.50
TOTAL	24.00	0.00	1.50	25.50
*Faculty dedicated to the program. **Faculty effort can be in the department or split with another unit.				
*** Added **after** initiation year				

Part C: Estimated resources to initiate and operate the program				
	Program Initiation Year		**Expected by Target Enrollment Year**	
	2019 - 2020		**2023 - 2024**	
Full-time faculty	0.00	0.00	0.00	0.00
salaries	$0	$0	$0	$0
fringe benefits	$0	$0	$0	$0
Part-time faculty (faculty FTE split with unit(s))	5.50	0.00	1.50	7.00
salaries	$487,500	$0	$132,900	$620,400
fringe benefits	$183,325	$0	$49,763	$233,088
Adjunct faculty	0.00	0.00	0.00	0.00
salaries	$0	$0	$0	$0
fringe benefits	$0	$0	$0	$0
Graduate assistants	18.00	0.00	0.00	18.00
salaries	$468,000	$0	$0	$468,000
fringe benefits	$0	$0	$0	$0
Classified Positions	0.50	0.00	0.00	0.50
salaries	$20,000	$0	$0	$20,000
fringe benefits	$7,480	$0	$0	$7,480
Personnel cost				
salaries	$975,500	$0	$132,900	$1,108,400
fringe benefits	$190,805	$0	$49,763	$240,568
Total personnel cost	$1,166,305	$0	$182,663	$1,348,968
Equipment	$0	$0	$0	$0
Library	$0	$0	$0	$0
Telecommunication costs	$0	$0	$0	$0
Other costs	$0	$0	$0	$0
TOTAL	**$1,166,305**	**$0**	**$182,663**	**$1,348,968**

Part D: Certification Statement(s)

The institution will require additional state funding to initiate and sustain this program.

Yes _____ _____
Signature of Chief Academic Officer

No __x__ _____
Signature of Chief Academic Officer

If "no," please complete items. 1, 2, and 3 below.

1. Estimated $$ and funding source to initiate and operate the program.

Funding Source	Program initiation year 2019 - 2020	Target enrollment year 2023 - 2024
Reallocation within the department *(Note below the impact this will have within the department.)*	$507,500 +$190,805 fringe for 5.5 FTE faculty and .5 FTE administrative assistant to initiate the modified program.	The target enrollment year will not call for reallocation of funds within the department.
Reallocation within the school or college *(Note below the impact this will have within the school or college.)*	The program initiation year will not call for any reallocation of funds within the school.	The target enrollment year will not call for reallocation of funds within the department.
Reallocation within the institution *(Note below the impact this will have within the institution.)*	The program initiation year will not call for any reallocation of funds within the institution.	The target enrollment year will not call for reallocation of funds within the institution.
Other funding sources *(Specify and note if these are currently available or anticipated.)*	No additional funding sources are needed for the initiation year.	Lines for additional FTE have been granted by the Provost's office to the School of Engineering.

2. Statement of Impact/Funding Source(s). A separate detailed explanation of funding is required for each source used and a statement of impact on existing resources.

Reallocation within the department
The department of Biomedical Engineering will reallocate all existing resources from the current Ph.D. in Biomedical Engineering program into the modified program. Faculty effort will

be used to support the proposed modified degree program. The reallocation of resources will not negatively impact existing academic programs.

Reallocation within the School
The program will not call for any reallocation within the school.

Reallocation within the Institution
The program will not call for any reallocation within the school.

Other funding sources
No additional funding sources

3. Secondary Certification.
If resources are reallocated from another unit to support this proposal, the institution will not subsequently request additional state funding to restore those resources for their original purpose.

Agree X _____
Signature of Chief Academic Officer

Disagree____ _____
Signature of Chief Academic Officer

Appendices

Appendix A - Modified Curriculum

Modifications to the Core: Because the field of biomedical engineering has expanded exponentially over the last decade, a "core" no longer is represented by courses focusing on topic areas such as instrumentation, signal processing, biomechanics, or biomaterials. Although these topic areas remain relevant, the core knowledge that is general is computational modeling and numerical methods for solving advanced math problems across the expanded range of biomedical engineering topics (EGBR 601 Numerical Methods and Modeling in Biomedical Engineering). Additionally, core knowledge for biomedical engineers is a foundational understanding of the human body's organ systems and how engineering principles and mathematical models can be applied for improving and/or repairing these systems (EGBR 602 Biomedical Engineering Systems Physiology).

Modifications to Required Courses: Content for human physiology will be addressed within the department curriculum (EGBR 602) making redundant course work from the Physiology Department (PHIS 501). Future scientists and researchers need to be prepared in seeking grant funding (GRAD 614) and ethical conduct in research (OVPR 603).

Addition of Restricted Electives: The previous core course topics (instrumentation, signal processing, biomechanics, biomaterials) no longer represent the range of research topics in biomedical engineering. Because these topic areas are relevant but no longer general knowledge, they have, along with two additional topic areas, been assigned to a list of restricted electives.

Modification to Qualifying Examination: The proposed modifications to the curriculum require a concurrent change to the Ph.D. Qualifying Examination. Currently, students take a written exam based on the four core BME courses. With the proposed changes, the qualifying exam will contain material from the new BME core courses (EGRB 601 and EGRB 602). The modified examination will have a written and oral component. The oral component will be given to a three-member panel and focus on material from the restricted electives courses the student has chosen.

Appendix B - Sample Plans of Study

B.S.-to-Ph.D.

Term	Courses	Total Credit Hours
YR 1 Fall	EGRB 601 Numerical Methods in Biomedical Engineering (4) EGRB 690 Biomedical Engineering Seminar (1) EGRB 697 Directed Research (3) BIOS or STAT 500 level or above (3) Pick One: EGRB 616 Cell Engineering (3) EGRB 603 Biomedical Signal Processing (3)	14 credits
YR1 Spring	EGRB 602 Physiological Foundations of Biomedical Engineering (4) EGRB 690 Biomedical Engineering Seminar (1) EGRB 697 Directed Research (3) Pick Two: EGRB 604 Biomechanics (3) EGRB 613 Biomaterials (3) EGRB 507 Instrumentation (3) EGRB 521 Human Factors Engineering (3)	14 credits
YR1 Summer	EGRB 697 Directed Research (3)	3 credits
YR 2 Fall	Open Elective 1 (3) Open Elective 2 (3) OVPR 603 Responsible Conduct of Research (1) EGRB 690 Biomedical Engineering Seminar (1) EGRB 697 Directed Research (6)	14 credits
YR 2 Spring	Open Elective 3 (3) Open Elective 4 (3) GRAD 614 Grant Writing (1) EGRB 690 Biomedical Engineering Seminar (1) EGRB 697 Directed Research (6)	14 credits
YR2 Summer	EGRB 697 Directed Research (3)	3 credits
YR3+	EGRB 697 Directed Research (10)	10 credits
	Total	72 credits

M.S.-to-Ph.D. Plan of Study

Term	Courses	Total Credit Hours
YR 1 Fall	EGRB 601 Numerical Methods in Biomedical Engineering (4) BIOS or STAT – 500 level or above (3) EGRB 697 Directed Research (3) EGRB 690 Biomedical Engineering Seminar (1) <u>Pick One:</u> EGRB 616 Cell Engineering (3) EGRB 603 Biomedical Signal Processing (3)	14 credits
YR1 Spring	EGRB 602 Physiological Foundations of Biomedical Engineering (4) EGRB 690 Biomedical Engineering Seminar (1) EGRB 697 Directed Research (6) <u>Pick One:</u> EGRB 604 Biomechanics (3) EGRB 613 Biomaterials (3) EGRB 507 Instrumentation (3) EGRB 521 Human Factors Engineering (3)	14 credits
YR1 Summer	EGRB 697 Directed Research (3)	3 credits
YR 2 Fall	Open Elective (3) OVPR 603 Responsible Conduct of Research (1) EGRB 690 Biomedical Engineering Seminar (1) EGRB 697 Directed Research (10)	15 credits
YR 2 Spring	GRAD 614 Grant Writing (1) EGRB 690 Biomedical Engineering Seminar (1) EGRB 697 Directed Research (12)	14 credits
	Total	60 credits

Appendix C - Course Descriptions

Core Courses

EGRB 601. Numerical Methods and Modeling in Biomedical Engineering. 4 Hours. Semester course; 4 lecture hours. 4 credits. The goal of this course is to develop an enhanced proficiency in the use of computational methods and modeling, to solve realistic numerical problems. in advanced biomedical engineering courses and research, as well careers. The course will discuss and students will develop advanced technical skills in the context of numerical data analysis and modeling applications in biology and medicine. An important component of this course is developing problem-solving skills and an understanding of the strengths and weaknesses of different numerical approaches applied in biomedical engineering applications.

EGRB 602. Biomedical Engineering Systems Physiology. 4 Hours. Semester course; 4 lecture hours. 4 credits. Biomedical engineering requires a foundational understanding of organ Systems in the body as well as an advanced understanding of how to apply engineering principles and mathematical models to those systems. In this course, students will learn the basic physiology of major organ Systems while also identifying and implementing mathematical modeling approaches to simulate and better understand these organ systems. Students will also learn how to apply engineering concepts, such as fluid dynamics, thermodynamics, structural mechanics and mass transport to better understand organ system physiology.

EGRB 690. Biomedical Engineering Research Seminar. 1 Hour. Semester course; 1 lecture hour. 1 credit. Presentation and discussion of research reports and topics of current interest to the program seminar or special group seminar.

Restricted Elective Courses

EGRB 507. Biomedical Electronics and Instrumentation. 3 Hours. Semester course; 2 lecture and 2 laboratory hours. 3 credits. Fundamental principles and applications of electronics and instrumentation as related to biomedical sciences.

EGRB 521. Human Factors Engineering. 3 lecture hours. 3 credits. Course explores the principles and practices of ergonomics and human factors with respect to effective design and decision-making. Course addresses the physical and cognitive aspects of user-centered design including factors related to the sensory systems, human memory, movement control and control systems, physical and mental workload, decision-making, mathematical modeling, environmental factors, simulation, usability testing, task analysis, eye tracking, display systems, and controls.

EGRB 603. Biomedical Signal Processing. 3 Hours. Semester course; 3 lecture hours. 3 credits. Prerequisites: Calculus and differential equations (MATH 301 or equivalent), including Laplace

and Fourier Transforms.. Explores theory and application of discrete-time signal processing techniques in biomedical data processing. Includes discrete-time signals and systems., the Discrete/Fast Fourier Transforms. (DFT/FFT), digital filter design and implementation, and an introduction into processing of discrete-time random signals.

EGRB 604. Biomechanics. 3 Hours. Semester course; 3 lecture hours. 3 credits. Prerequisites: Calculus and ordinary differential equations (MATH 200-201, MATH 301 or equivalent). Presents basic mechanical properties of materials, describes methods of material testing and introduces techniques for analyzing the solid and fluid mechanics of the body. Considers topics such as stress/strain relationships, particle mechanics, and force balances.

EGRB 613. Biomaterials. 3 Hours. Semester course; 3 lecture hours. 3 credits. Prerequisite: Undergraduate material science or permission of the instructor. Primary and secondary factors determining the performance of materials used for implants in the human body. Topics will include metallurgy of stainless steel, cobalt-chromium alloys, titanium alloys, biocompatibility of implant materials, mechanical and physical properties of biomaterials, corrosion of biomaterials and medical polymers.

EGRB 616. Cell Engineering. 3 Hours. Semester course; 3 lecture hours. 3 credits. Prerequisite: PHIS 501. This course will cover the cell and its engineering principles with an emphasis on current research techniques. Topics covered include the organization and structure of the cell, cell signaling, and application of cell biology to biomedical research. Advanced methods are taught enabling students to interpret and present findings from primary literature.

Required Courses

OVPR 603. Responsible Conduct of Research. 1 Hour. Short course; 1 lecture hour. 1 credit. Restricted to graduate or professional students, with preference given to Preparing Future Faculty students. Registration requires permission of PFF Program office. This course is designed to provide a learning experience that will enable students to develop and refine skills needed to solve problems involving relevant topic areas of responsible scientific conduct and to clearly articulate ethically and legally acceptable solutions to problems posed about scientific conduct. Content of the course includes relevant guidelines, policies and laws bearing on the conduct of scientific research including those dealing with scientific authorship, use of humans and animals in research, conflict of interest, data ownership, scientific record keeping, collaborative research, and ownership, protection and use of intellectual property in the arena of scientific research. Conventions and normative behavior related to responsibilities in the scientific mentor-trainee relationship will also be covered. Graded as pass/fail.

GRAD 614. Introduction to Grant Writing. 1 Hour. Semester course; 1 lecture hour. 1 credit. Enrollment requires graduate standing. This course introduces the graduate student to the grant writing process. Topics include basic components of a grant application, writing the proposal, identifying funding sources, understanding proposal guidelines and the grant proposal review process. Graded S/U/F.

Sample of courses in Biostatistics (BIOS) and Statistics (STAT)

BIOS 516. Biostatistical Consulting. 1 Hour. Semester course; 1 lecture hour. 1 credit. The principles dealing with the basic art and concepts of consulting in biostatistics. The non-statistical course discusses role, responsibilities of biostatisticians, relationship between clients and consultants, method of writing reports, etc.

BIOS 524. Biostatistical Computing. 3 Hours. Semester course; 3 lecture hours. 3 credits. Techniques for biostatistical computing are presented by way of contemporary statistical packages. Students learn how to create and manage computer data files. Methods for data entry, preparation of data for analysis and summaritive procedures are covered. Students learn the basics of random number generation and its applications, numerical methods for statistical algorithms, and concepts of numerical accuracy and stability. Advanced topics include interactive matrix and macro languages. Emphasis is placed on computational methods and data management rather than on statistical methods and procedures.

BIOS 571. Clinical Trials. 3 Hours. Semester course; 3 lecture hours. 3 credits. Concepts of data management and statistical design and analysis in single-center and multicenter clinical trials. Data management topics include the collection, edition, and validation of data. Statistical design topics include randomization, stratification, blinding, placebo- and active-control groups, parallel and crossover designs, and power and sample size calculations. Statistical analysis topics include sequential and group sequential methods.

BIOS 572. Analysis of Biomedical Data I. 3 Hours. Semester course; 3 lecture hours. 3 credits. Prerequisites: one course in statistics and permission of instructor. This course provides an overview of the analysis of continuous response data. The material begins with a brief review of theoretical tools used in inference and segues into common univariate and bivariate statistical methodologies for the analysis of continuous response data. Model-based statistical methodologies including linear regression, ANOVA, ANCOVA and mixed effect models will also be covered. Practical consideration and usage of statistical methods, utilizing commonly used statistical software packages, will be emphasized over theoretical underpinnings of the methods.

STAT 543. Statistical Methods I. 3 Hours. Semester course; 3 lecture hours. 3 credits. Enrollment restricted to students with graduate standing, or those with one course in statistics and permission of instructor. Basic concepts and techniques of statistical methods, including the collection and display of information, data analysis and statistical measures; variation, sampling and sampling distributions; point estimation, confidence intervals and tests of hypotheses for one and two sample problems; principles of one-factor experimental design, one-way analysis of variance and multiple comparisons; correlation and simple linear regression analysis; contingency tables and tests for goodness of fit.

STAT 613. Stochastic Processes. 3 Hours. Continuous courses; 3 lecture hours. 3-3 credits.

Prerequisite: graduate status in mathematical sciences or systems modeling and analysis, or permission of instructor. Introduction to the theory and applications of stochastic processes. Random walks, Markov processes, queuing theory, renewal theory, birth-death and diffusion processes. Time series, spectral analysis, filter, autocorrelation.

STAT 623. Discrete Multivariate Analysis. 3 Hours. Semester course; 3 lecture hours. 3 credits. Prerequisite: graduate status in mathematical sciences or systems modeling and analysis, or permission of the instructor. Methods for the analysis of categorical data, including logistic regression and the general log-linear model. Emphasis on social and biomedical applications of these techniques using SPSS and SAS software.

STAT 625. Applied Multivariate Analysis. 3 Hours. Semester course; 3 lecture hours. 3 credits. Prerequisite: graduate status in mathematical sciences or systems modeling and analysis, or permission of instructor. Multivariate statistics is a study of dependent random variables. This course covers methods for analyzing continuous multivariate data, such as numerical and graphical summary of multivariate observations, principal component analysis, factor analysis, classification and discrimination, canonical correlation analysis, and cluster analysis. Students will learn the motivation behind these methods, how to implement them in statistical software packages and how to interpret the results.

STAT 636. Machine Learning Algorithms. 3 Hours. Semester course; 3 lecture hours. 3 credits. Enrollment restricted to students with graduate status in mathematical sciences, systems modeling and analysis, decision sciences and business analytics, or computer science, or by permission of the instructor. Includes an in-depth analysis of machine learning algorithms for data mining, equipping students with skills necessary for the design of new algorithms. Analyses will include framing algorithms as optimization problems and a probabilistic analysis of algorithms. Students will be exposed to current areas of research in the construction of data mining algorithms. Cross-listed as: OPER 636.

STAT 642. Design and Analysis of Experiments I. 3 Hours. Semester course; 3 lecture hours. 3 credits. Prerequisite: graduate status in mathematical sciences or systems modeling and analysis, or permission of instructor. An introduction to the design and analysis of experiments. Topics include the design and analysis of completely randomized designs, one variable block designs, the family of Latin square designs and split-plot designs. Introductions are also given to multiple comparison procedures and contrasts, analysis of covariance and factorial experiments. Applications involve the use of a statistical software package.

STAT 648. Systems Reliability Analysis. 3 Hours. Semester course; 3 lecture hours. 3 credits. Prerequisite: graduate status in mathematical sciences or systems modeling and analysis, or permission of the instructor. An introduction to engineering reliability and risk analysis, specifically failure data analysis, maintenance problems, system reliability and probabilistic risk assessment. Applications in computer science and engineering will include stochastic characterization of wear in hardware systems and the development of failure models for software systems. Decision problems such as the optimal maintenance of repairable systems and optimal testing policies for hardware and software systems will be examined. The analysis of

risk through fault trees, event trees and accident precursor analysis also will be discussed. Cross-listed as: OPER 648.

STAT 649. Statistical Quality Control. 3 Hours. Semester course; 3 lecture hours. 3 credits. Prerequisite: graduate status in mathematical sciences or systems modeling and analysis, or permission of the instructor. Demonstrates how statistics and data analysis can be applied effectively to process control and management. Topics include the definition of quality, its measurement through statistical techniques, variable and attribute control charts, CUSUM charts, multivariate control charts, process capability analysis, design of experiments, and classical and Bayesian acceptance sampling. Statistical software will be used to apply the techniques to real-life case studies from manufacturing and service industries. Cross-listed as: OPER 649.

STAT 650. Design and Analysis of Response Surface Experiments. 3 Hours. Semester course; 3 lecture hours. 3 credits. Enrollment restricted to students with graduate status in mathematical sciences or systems modeling and analysis, or permission of the instructor. Philosophy, terminology and nomenclature for response surface methodology, analysis in the vicinity of the stationary point, canonical analysis, description of the response surface, rotatability, uniform information designs, central composite designs and design optimality. Cross-listed as: BIOS 650.

EXECUTIVE SUMMARY OF PROPOSED POLICY: Military-Affiliated Students

New Policy ☒ or Substantive Revision ☐

This policy consolidates the three existing policies relating to military-affiliated students and adds a component to comply with federally required legislation on the Veterans Choice Act

Policy Type: Board of Visitors

Responsible Office: [Division of Student Affairs and Military Student Services]

Draft Date: 03/15/2018

Initial Policy Approved:

Awarding of Credit for Military Activation-03/23/2016

Early Course Registration for Military-Related Students-05/05/2012

Course Credit Active Duty Military Students-11/12/2009
Choice Act- New Policy

Revision History: ["None – New Policy" or list Revision Date(s) and Policy Title(s)]

Governance Process Tracking:

If new BOV policy, enter date and name of President (or designee) approving development of policy: This is a new policy document that consolidates three existing policies and adds a section on the Choice Act which was passed and modified by Congress in December of 2016 into Public Law 114-315

If new Administrative policy, enter date and name of President's Cabinet member approving development of policy: MM/DD/YYYY - Name

Integrity & Compliance Office Review: 03/12/2018

University Counsel Review: 03/28/2018

Public Comment Posting: 04/03/2018 through 04/16/2018

University Council Academic Affairs and University Policy Committee Review: 04/01/2018

University Council Review: 04/02/2018

President's Cabinet Approval: 05/29/2018

Board of Visitors Approval (if applicable): MM/DD/YYYY

1. Why is this policy being created ☒ *or* revised ☐?	This is a new policy document that combines three existing policies related to military-affiliated students and adds the Choice Act, as required by federal mandate. This policy has been developed in order to clarify and consolidate all military-affiliated policies and improve veteran support.
2. New policy ☒: What are the general points or requirements covered in this policy? *or* Revised policy ☐: What are the substantive differences between this draft and the current policy?	The Choice Act is federal legislation that addresses veterans and their dependents in the application of certain GI Bill educational benefits and their eligibility for in-state tuition at public institutions. Awarding of Credit for Military Education is an existing policy that addresses veteran students' eligibility to receive credit towards their degrees based upon completion of equivalent coursework or educational experiences while serving in the armed forces. Early Course Registration for Military-Related Students is an existing policy created to provide early course registration accommodations for veterans, active duty, reservists, National Guard, and the US Coast Guard. Course Credit Active Duty Military Students is an existing policy that is being renamed to The Military Activation Policy as well as implementing minor changes to improve veteran friendliness and support for students being called to active duty during an academic semester.
3. Which stakeholder offices or personnel have provided input into this policy draft?	All areas of the division of Strategic Enrollment Management, and University Academic Advisors.
4. Which other universities' policies or resources (e.g., laws, regulations, etc.) did you consider when preparing this draft?	George Mason, Eastern Virginia Medical, James Madison, Mary Washington, Hampton University, Norfolk State, Norther Virginia CC, Old Dominion, Radford, Tidewater Community College, Armstrong State, Colorado State, Georgetown, Georgia State, Rutgers
5. What is your general assessment of this policy's impact on the university community?	Impact is designed to consolidate university military related policies providing easier accessibility for faculty, staff and students. This policy addresses issues such as residency, military activation, early registration, credit review approval for military affiliated students and acknowledgment of military service commitments, thus enhancing the university's ability to recruit and support military-affiliated students.

[DRAFT] Military-Affiliated Students

Policy Type: Board of Visitors
Responsible Office: Office of Military Student Services, Division of Student Affairs, Office of the Provost
Initial Policy Approved: MM/DD/YYYY
Current Revision Approved: MM/DD/YYYY

Policy Statement and Purpose

Virginia Commonwealth University recognizes the unique needs of military students and students who are dependents of those in the armed forces. The purpose of this policy is to describe programs and exemptions available to such military-affiliated students at VCU in compliance with applicable law and state policy governing such students.

Noncompliance with this policy may result in disciplinary action up to and including termination. VCU supports an environment free from retaliation. Retaliation against any employee who brings forth a good faith concern, asks a clarifying question, or participates in an investigation is prohibited.

Table of Contents

Who Should Know This Policy

Military-affiliated students and university employees (including faculty) are responsible for knowing this policy and familiarizing themselves with its contents and provisions.

Definitions

Call to Active Military Duty
Any operation, including a defense crisis, in which the President of the United States declares a sudden mobilization of any part of the U.S. Armed Forces, including reserve forces or the U.S. National Guard. This includes involuntary inactive duty for training (IDT) and annual training for Reserves and National Guard forces

College Level Examination Program (CLEP)
CLEP is a group of standardized tests that assess college-level knowledge in several subject areas by students pursuing college degrees in non-traditional formats.

Continuous enrollment
Students who withdraw from all courses after the first week of the semester are considered to have been enrolled for the semester. Students who do not attend VCU for three or more successive semesters excluding summer sessions must submit an application for readmission to Undergraduate Admissions.

Course Requirements
Components that must be completed in order to obtain credit for a course, which may include, but is not limited to, papers, tests, quizzes, class participation, contact time, examinations, projects, experiments, work experience, or clinical experience.

Credit Hour
A credit hour is defined as a reasonable approximation of not less than one hour of classroom or direct faculty instruction and a minimum of two hours out-of-class student work each week for approximately fifteen weeks, or the equivalent amount of work over a different amount of time. Credit is based on at least an equivalent amount of work for other academic activities including laboratory work, internships, practice, studio work, and other academic work leading to the award of credit hours and established by individual programs. This definition represents the minimum standard. Student time commitment per credit hour may be higher in individual programs.

Dependent
Military dependents are the spouse(s), children, and possibly other familial relationship categories of a sponsoring military member for purposes of pay as well as special benefits, privileges, and rights.

DSST Exam
Academic tests offered by DANTES Subject Standardized Tests (DSST) for college credit.

JST
The Joint Services Transcript (JST) is a synchronized transcript presenting data for the United States Army, Marine Corps, Navy, and Coast Guard.

Military-Affiliated Student
A military student or a dependent of a military student

Military Student

An active-duty member, or veteran, of a branch of the U.S. Armed Forces, including reservists, or of the U.S. National Guard, or of the U.S. Coast Guard.

USAF Transcript
The USAF Transcript is a synchronized transcript presenting data for the Community College of the United States Air Force (USAF), federal program offered by the Air Force that grants two-year Associate of Applied Science degrees in association with Air University.

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Contacts

The Office of Military Student Services (MSS) officially interprets this policy. MSS is responsible for obtaining approval for any revisions as required by the policy *Creating and Maintaining Policies and Procedures* through the appropriate governance structures. Please direct all policy questions to MSS militaryserv@vcu.edu.

Policy Specifics and Procedures

1. Military In-State Tuition and Academic Advising: This policy and procedure accords eligible military-affiliated students in-state tuition rates regardless of residency status, as required by applicable law, including the Veterans Access, Choice, and Accountability Act of 2014 ("Choice Act"), as amended.
    A. VCU will charge the following covered individuals a rate of tuition not to exceed the in-state rate for tuition and fees:
        I. A veteran using educational assistance under the Montgomery G.I. Bill–Active Duty Program or the Post-9/11 G.I. Bill, who lives in Virginia while attending a school located in Virginia (regardless of their formal state of residence) and enrolls in the school within three years of discharge or release from a period of active duty service of 90 days or more.

        II. Anyone using transferred Post-9/11 GI Bill benefits who lives in Virginia while attending a school located in Virginia (regardless of their formal state of residence) and enrolls in the school within three years of the transferor's discharge or release from a period of active duty service of 90 days or more.

        III. Anyone described above while they remain continuously enrolled (other than during regularly scheduled breaks between courses, semesters or terms) at the same school. The person so described must have enrolled in the school prior to the expiration of the three year period following discharge or release as described above and must be using educational benefits under either the Montgomery G.I. Bill–Active Duty Program or the Post-9/11 G.I. Bill.

        IV. Anyone using benefits under the Marine Gunnery Sergeant John David Fry Scholarship who lives in Virginia while attending a school located in Virginia (regardless of his/her formal state of residence).

V. Anyone using transferred Post-9/11 G.I. Bill benefits who lives in Virginia while attending a school located in Virginia (regardless of the individual's formal state of residence) and the transferor is a member of the uniformed service who is serving on active duty.

B. VCU will inform students of their in-state or out-of-state (non-resident) status once the admissions office has completed the student's application review. Non-resident students in one of the categories described in section 1(A) above must contact MSS to confirm eligibility and provide necessary supporting documentation for the 702 Choice Act waiver. VCU classifies students eligible for a waiver as non-residents for reporting purposes but charges the in-state tuition rate for any credit earned up to 125 percent of the credit hours needed to complete their academic program.

C. If a student using the 702 Choice Act waiver described above exceeds 125 percent of the credit hours needed to complete their academic program, the waiver is void, and VCU will charge the non-resident tuition rate for all credits above the 125 percent limit. At that time, VCU will charge the student the difference between the in-state and non-resident rates for all credits above the 125 percent level.

D. VCU offers academic advising to any student eligible under section 1(A) regardless of their degree-seeking status.

2. Awarding Credit for Military Education: Military students admitted to a degree-seeking program may receive credit towards their degree for completion of equivalent coursework and/or educational experiences while serving in the armed forces.

A. A student seeking credit for military education must submit any JST or USAF Transcript and all relevant documents to admissions to determine eligibility for credit. VCU will consider documentation in light of previous decisions made in other cases by VCU, by other Virginia colleges and universities, and by other accredited universities to the greatest extent possible.

B. Such credit may be awarded for:

I. Courses that have received the positive recommendation of the Commission on Accreditation of Service Experiences of the American Council for Education for undergraduate credit as stated in the most recent edition of the "Guide to the Evaluation of Educational Experiences in the Armed Services."

II. Acceptable scores earned on Dantes/DSST subject tests.

III. Acceptable scores earned on CLEP subject tests.

IV. Acceptable scores earned on the Excelsior College examination.

V. Individualized portfolio evaluation, which may be conducted by faculty at the individual colleges or by using the Council for Adult and Experiential Learning (CAEL) guidelines or CAEL's LearningCounts.org, a national online prior learning assessment service.

C. Schools and colleges are not required to award credit for coursework that is not offered at VCU or is not reasonably comparable to coursework that is offered at VCU. Any denial of credit shall include documentation of an educationally grounded rationale.

D. Any credits for military education count towards degree requirements but are not a factor in calculating GPA.

E. VCU may grant advanced standing to veterans, Junior ROTC graduates or members of the Reserves/National Guard after the relevant academic department chair's review of academic records and verification of ROTC academic alignment. The number of credits accepted toward graduation requirements is determined by each school.

3. Early Course Registration: This procedure allows military-affiliated students to register for classes before standard advance course registration as set forth in the VCU academic calendar.

A. A military student is eligible for early registration after completing one semester at VCU. VCU may grant early registration to spouses of military students who petition MSS for early registration if, in the opinion of MSS, the active duty/deployment has sufficient impact on their academic schedule.

B. A military student not utilizing Veterans Administration educational benefits must contact MSS or admissions to request early registration no later than two weeks prior to the published VCU academic calendar's first day of early registration. If MSS has not yet verified eligibility, the student must provide the appropriate verification documentation to MSS before early registration is activated.

C. All students identified for early registration will receive a notification email with instructions approximately two weeks prior to the early registration date. Students with holds in place must resolve holds before they can register.

D. All students registering for classes early may register on or after the early registration date in the appropriate system. If a military student has any issues registering for classes, they should contact MSS.

E. Students, Academic Advisors, Faculty, Department Chairs, Assistant and Associate Deans, Deans, the Division of Strategic Enrollment Management, and the Office of the Senior Vice Provost for Academic Affairs are responsible for knowing this policy and familiarizing themselves with its contents and provisions.

4. Military Activation Policy: This policy and procedure permits any students called to active military duty during an academic semester to have an opportunity to earn full course credit.

A. A military student who must relocate due to active military duty and seeks full credit for courses in progress must provide MSS with a copy of the student's active duty orders.

B. If an admissions decision has been rendered and an offer of admission has been made, but the student has not yet enrolled when they are deployed for active duty military service, they

may defer enrollment for up to one year from the date of admission by submitting the relevant active duty orders to MSS along with a request to defer enrollment. After a deferral has been granted, the student must provide updated contact information and information for determination of residency for tuition purposes to the office of admissions prior to their enrollment.

C. If activation occurs after the semester has begun, the student may notify MSS in writing of a request for one of the following options, and provide any required additional documentation:

    I. If activation is before the end of the add/drop period, drop all courses and receive a full refund of all payments to the university including deposits. Students will be asked to certify with the registrar that they are not owed and have not received a financial aid refund.

    II. Receive a grade of Incomplete (IM – Incomplete Military) in one or all courses. Students residing in university housing and/or on a dining services contract will receive a prorated refund of these charges including deposits. Students with grades of IM will not receive a tuition and fees reduction for these courses because the student will earn the credits temporarily marked IM once the student completes the work, submits the grade change form, and receives a grade for the credits. Students will have 12 months from the date that they return from active service to complete the course work and earn a course grade.

    III. Accept administrative withdrawal (WM – Withdrawn Military) from all courses as of the effective date of the orders to active duty. Students choosing this option receive a full refund of all tuition and fees, as well as a prorated refund of dining and housing charges, including deposits. If a student received financial aid, the amount recovered to financial aid accounts will follow Federal financial aid policy.

    IV. If a student has completed 75 percent or more of the course requirements at the time of military activation and receives written permission from the instructor, they may receive full course credit. The instructor must determine what percentage of course requirements has been completed and certify this as part of their written permission. The awarding of full credit cannot be made where the uncompleted requirements are essential components of the course or program, or required by law or regulatory bodies, or required for competency in the workplace, or required to complete licensure examinations.

D. Upon receipt of the student's request, the registrar administers the appropriate enrollment action, posts the appropriate grades, and sends a copy of the orders and the Tuition Relief Form to the Financial Aid Office and the Student Accounting Office. Any refund payable to a student who is a financial aid recipient shall be subject to the applicable state and federal regulations regarding refunds.

E. If the student returns to VCU from a military leave of absence within five years, or provides notice of intent to return within three years, of completing their active military duty, they may return to VCU and the same program of study without reapplying for admission, as an exception to the university's standard continuous enrollment policy. If the student reapplies for admission after this period, the reapplication admission fee shall be waived. To the extent permitted by legal, regulatory, or accreditation requirements, any requirements for a program of study to be completed within a certain amount of time will not count the time during which the student was on active military duty.

F. VCU offers deferred or readmitted students academic advising to determine the impact of their absence from the program, the ability to resume study and options if an academic program is no longer available or suitable. Academic programs with specialized accreditation and selective admission requirements shall establish criteria for reinstatement of such students that are consistent with any relevant standards of the respective accrediting agency, if the admission requirements have changed since the student's original admission.

5. The Military Student Services Office will offer annual policy updates and information for all VCU staff responsible for administering these policies through the VCU bulletin and the MSS website.

Forms

Tuition relief form – https://militaryservices.vcu.edu/media/strategic-enrollment-management/military-services/docs/RRDefCrisRel.pdf

Course request form – https://rar.vcu.edu/media/strategic-enrollment-management/rar/docs/course_request_form2-1.pdf

Related Documents

Military In-State Tuition

1. Veteran's Access, Choice, and Accountability Act http://www.schev.edu/docs/default-source/tuition-aid-section/financial-aid/veteranschoiceactfaq.pdf
2. In-State Tuition; Surcharge, Virginia Code § 23.1-509 https://law.lis.virginia.gov/vacode/title23.1/chapter5/section23.1-509/
3. All Volunteer Force Educational Assistance, 38 U.S.C. Chapter 30
4. Post-9/11 Educational Assistance, 38 U.S.C. Chapter 33
5. Educational assistance for service in the Armed Forces commencing on or after September 11, 20013, 8 U.S.C. § 3311
6. Eligibility for in-state tuition charges; domicile; domiciliary intent. Virginia Code § 23.1-502 https://law.lis.virginia.gov/vacode/23.1-502/

7. Determination of domicile; exception; certain active duty and retired military personnel, etc., Virginia Code § 23.1-504, https://law.lis.virginia.gov/vacode/title23.1/chapter5/section23.1-504/
8. Determination of domicile; exception; dependents of certain active duty military personnel, etc., Virginia Code § 23.1-505, https://law.lis.virginia.gov/vacode/title23.1/chapter5/section23.1-505/

Credit for Military Education

1. Course credit; veterans; active duty military students, Virginia Code § 23.1-904, https://law.lis.virginia.gov/vacode/title23.1/chapter9/section23.1-904/
2. Course credit; Advanced Placement, Cambridge Advanced, College-Level Examination Program, and International Baccalaureate examinations, Virginia Code § 23.1-906 https://law.lis.virginia.gov/vacode/title23.1/chapter9/section23.1-906/
3. SCHEV Guidelines on Award of Academic Credit for Military Education, Training and Experience by Virginia Public Higher Education Institutions www.schev.edu/docs/default-source/students-section/military-education/guidelines-on-award-of-credit-for-military-training-education-and-experience.pdf

Early Course Registration

1. VCU Undergraduate Bulletin
2. SCHEV Guidelines on Course Registration Policies for Military-Related Students at Virginia Public Higher Education Institutions www.schev.edu/docs/default-source/students-section/military-education/guidelines-on-course-registration-policies-for-military-related-students.pdf

Military Activation

1. SCHEV Virginia Tuition Relief, Refund, and Reinstatement Guidelines http://www.schev.edu/docs/default-source/students-section/military-education/virginia-tuition-relief-refund-and-reinstatement-guidelines.pdf
2. Tuition relief and refunds and reinstatement for certain students in the Armed Forces, Virginia Code § 23.1-207 https://law.lis.virginia.gov/vacode/title23.1/chapter2/section23.1-207/
3. VCU Policy: Financial Aid Recalculation Due to Withdrawal

Other Related Documents

1. Authority to transfer unused education benefits to family members, 38 U.S.C. § 3319
2. Disapproval of courses, 38 U.S.C. § 3679

Revision History

This policy supersedes and replaces the following archived policies:

11/12/2009	*Course Credit: Active Duty Military Students*
05/05/2014	*Early Course Registration for Military-Related Students*
03/23/2016	*Awarding of Credit for Military Education*

FAQ

1. What is the credit hours surcharge?
   If a student exceeds 125 percent of the credit hours needed to complete their academic program, they can lose the subsidized (in-state) rate and VCU will charge the non-resident tuition rate for all credits above the 125 percent limit. At that time, VCU will charge the student the difference between the in-state and non-resident rates for all credits above the 125 percent level.

2. Can a spouse benefit from early registration?
   Yes, spouses can petition MSS for this benefit. Criteria for approval will be the impact of the active duty on the academic schedule.

3. What is early registration?
   Early registration occurs before the general population of VCU students register.

4. Why is early registration being given to students outlined in the policy and purpose?
   Active-duty military and Coast Guard members have current responsibilities for national defense that affect their educational progress. Individual reservists and National Guard members have monthly obligations to the military that may affect their ability to plan and pace their educational pursuits. Students outlined in the policy and purpose may be adversely affected by education benefit restrictions and the course registration schedule.

5. How does a student become eligible to receive early registration accommodations?
   To become eligible, a student must provide proof of their military service to the office of MSS.

6. Where can I find policy updates and information regarding policies related to military students?
   Policy updates will be posted to the VCU bulletin and the MSS web site.

AHAC Dashboard for 2017-18 (for September 14, 2018 meeting)

Student Success

Measure	2017-2018	2016-2017	2015-2016	2014-2015	UAB 2016-2017	USC-Columbia 2016-2017	USF 2016-2017
6-year graduation rate	**67% estimated** *(fall 2012 cohort)* Official figures will be available in Mid October	63%	62%	62%	53%	73%	67%
4-year graduation rate	**43% estimated** *(fall 2014 cohort)* Official figures will be available in Mid October	45%	45%	40%	40%	55%	54%
Student safety Clery Act reports *(in jurisdiction)*	**Needs to be updated** **17** *(as of 5/1) vs. 21 prior year*	22	12	17	N/A	N/A	N/A
5-year graduation rate for full- time transfer students	**67% estimated** *(fall 2013 cohort)* Official figures will be available in Mid October	67%	67%	62%	N/A	N/A	67%
% of recent baccalaureate degree graduates working full-time *(6 months post-graduation)*	Available December 2018	54%	53%	60%	N/A	N/A	N/A
Avg. in-state UG debt at graduation	Available spring 2019	$30,873	$29,257	$28,425	N/A	N/A	N/A
UG student satisfaction	Next survey fall 2018	N/A	76%	N/A	N/A	N/A	N/A

Faculty Success

T&R faculty turnover *(est. using fall Census II data)*	**8.0%**	8.2%	8.9%	7.6%	N/A	N/A	N/A
Global satisfaction with VCU as a good place to work:	Annual Survey is currently being redesigned by Division of Inclusive Excellence	N/A	73% (Faculty) / 76% (Staff)	N/A	N/A	N/A	N/A

AHAC Dashboard for 2017-18 (for September 14, 2018 meeting)

Research Productivity

Measure	2017-2018	2016-2017	2015-2016	2014-2015	UAB 2016-2017	USC-Columbia 2016-2017	USF 2016-2017
Sum of federal research awards *(millions) (CMUP AY 2014 from 2016 report for est. of Nat'l Ranking) follows federal FY Oct-Sept*	**Needs to be updated** **$104.4** *(as of 5/1) vs. $125.7 prior year*	$157.0	$144.1/ approx. 76th	$156.5/ approx. 70th	$276.1/ approx. 44th	$87.8/ approx. 112th	$205.2/ approx. 57th
Federal R&D expenditures *(millions) (NSF AY2016 for peers/Nat'l Ranking) reflects VCU fiscal year*	**Needs to be updated** **$117.7** *(as of 5/1) vs. $122.4 prior year*	$147.6	$143.8/80th	$142.4/81st	$348.6/31st	$93.9/107th	$228.4/55th
Invention disclosures/ *(AUTM FY2016 for peers)*	**Needs to be updated** **119** *(as of 5/1) vs. 95 prior year*	134	134	93	50	62	288

Health Sciences

Inter-professional student contact hours	**Needs to be updated** **13,670** *(fall term only)*	25,549	27,865	14,962	N/A	N/A	N/A
# of 1st time students enrolling from diversity pipeline programs into health professions training programs	**18**	27	14	25	N/A	N/A	N/A

Academic and Health Affairs Committee: Dashboard Measures for 2017-18

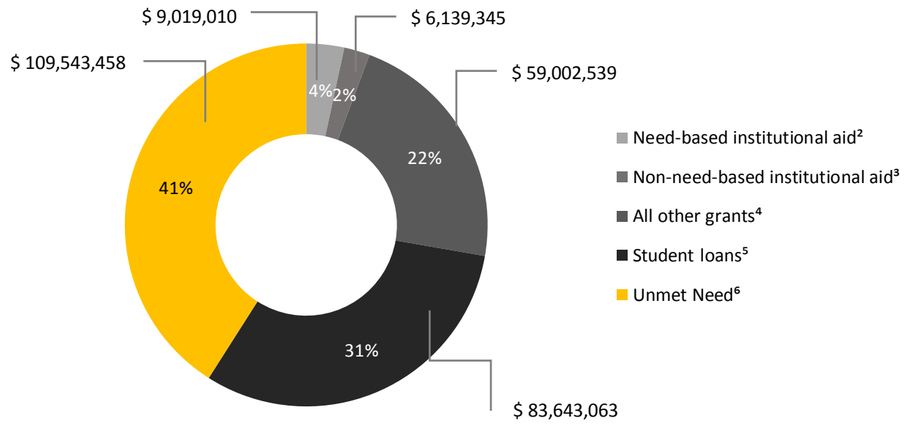
Goal Addressed: Student Success				
Performance Measure	**Description**	**Data Significance**	**Data Source**	**Data Frequency**
6-year Graduation Rate	The graduation rates in this indicator are calculated to meet requirements of the 1990 Student Right-to-Know Act, which requires postsecondary institutions to report the percentage of first-time, full-time undergraduate degree-seeking students who complete their program within 150 percent of the normal time for completion (within 6 years for students pursuing a bachelor's degree). Students who transfer into the institution, or who may complete their bachelor's degree at another institution are not included as completers in these rates. (nces.ed.gov)	This is an indicator of student completion; reflects effectiveness of student success programs; higher rates have favorable impact on affordability / debt levels upon graduation. (includes comparison ranges for other institutions: Quest peers and/or instate peers)	National Center for Education Statistics (NCES), Integrated Postsecondary Education Data System (IPEDS) for trailing fall / spring / summer terms	Annual (September)
4-year Graduation Rate	This is not a standard measurement but does inform internal progress toward 6-year graduation rate. It is used as a primary success measure by elite public and private universities, where 4-year graduation rates are traditionally >90%.	Same as above	Same as above: NCES:IPEDS	
Student safety Clery Act reports (robberies and burglaries within VCUPD jurisdiction)	The Jeanne Clery Act, a consumer protection law passed in 1990, requires all colleges and universities that receive federal funding to share information about crime on campus and their efforts to improve campus safety as well as inform the public of crime in or around campus. This information is made publicly accessible through the university's annual security report. (clerycenter.org) Institutions are required to disclose 3 general categories of crime statistics: • Criminal offenses: criminal homicide, sex offenses, robbery, aggravated assault, burglary, motor vehicle theft, and arson; • Hate crimes; • Arrests and referrals for disciplinary action for weapons violations, drug abuse violations and liquor law violations	Robbery data was selected because (in 2013) robberies were among the most serious crimes on campus. In FY2010, there were 28 reported cases. YTD FY2016 robberies total 8. Crime data speaks to aspects of campus climate and student perceptions of safety.	VCUPD maintains daily incidence logs. Data on crime statistics available on daily "real time" basis.	
5-Year Graduation Rate for for Transfer Students from Virginia Community Colleges	The Student Achievement Measure (SAM) tracks student movement across postsecondary institutions to provide a more complete picture of undergraduate student progress and completion within the higher education system. SAM provides data on 5 categories of students: • Students graduated from reporting institution; • Students who transferred and graduated from another institution; • Students who are enrolled at reporting institution; • Students who transferred an are enrolled at another institution; • Students whose current status is unknown. (studentachievementmeasure.org)	SAM is an alternative to the federal graduation rate, which is limited to tracking the completion of first-time, full-time students at one institution.	SAM model draws upon inputs from National Student Clearing House Student Tracker and the Voluntary System of Accountability (including College Portrait).	Updated annually (fall) with two-year lag
% of Recent Graduates Working Full-time	Information collected from post-graduation surveys which track graduate results over the course of 1st year post-graduation. While outcomes questions address a broad range of issues, highest level data represent occupation status by degree level (undergraduate, graduate and 1st professional): • Working full-time; • Enrolled in additional education; • Military or volunteer service full-time; • Working part-time; • Seeking additional education; • Unemployed	Employment data considered to be a key indicator of post-completion success and can be used to inform student application / selection decisions.	The Outcomes Survey and VCU Office of Planning & Decision Support. Data collected quarterly for December and May graduates for 1st year post-graduation.	Updated semi-annually.
Average debt at graduation	Student debt (in-state bachelor's degree holders)	Will Include in subcategory unmet need (with number of students) and % of met need (all sources)		
Student Satisfaction	From student exit survey include 2 measures: 1. Global Student Satisfaction with Advising; and 2. Global Student Satisfaction with VCU education.			
Goal Addressed: Faculty Success				
Performance Measure	**Description**	**Data Significance**	**Data Source**	**Data Frequency**
T&R faculty turnover (replacement positions)	This measures annual change in # of Teaching and Research (T&R) faculty. NOTE: VCU's participation in the COACHE study and the subsequent work on turnover and job satisfaction will provide an opportunity for us to benchmark our performance and place it in context	Measures the change in this number at one point in time annually (updated for Dec. meeting and remains static until following Dec.)	Human Resources Information System (HRIS) and Office of Planning & Decision Support (OPDS)	Annual (mid-October)
Global satisfaction with VCU as a good place to work		This will include subcategories by demographic: Staff, Tenure-Track faculty, Teaching & Research faculty, etc.	Two information sources – alternate years: Collaborative on Academic Careers in Higher Education (COACHE) faculty satisfaction survey; VCU Diversity & Inclusion Climate Survey	2015 COACHE results available; 2016 D&I survey results available July 2016
Goal Addressed: Research Productivity				
Performance Measure	**Description**	**Data Significance**	**Data Source**	**Data Frequency**
Sum of federal research awards and comparison to prior year	This is the sum of awards from all federal agencies and how this compares to prior year performance for the same period.	Federal awards traditionally represent >70% of VCU's research portfolio and are closely aligned with VCU goals around interdisciplinary research	VCU Office of VP for Research & Innovation (OVPRI) and Click Commerce reports	Daily report updates
Federal R&D Expenditures	$s expended on basic scientific research funded by federal agencies and awarded to an institution.	Measure of successful investment in basic scientific research	National Science Foundation and OVPRI	Annual (mid-October)
Invention Disclosures	An invention disclosure is a confidential document written by a scientist or engineer for use by a company's patent department, or by an external patent attorney, to determine whether patent protection should be sought for the described invention. VCU's Innovation Gateway office supports preparation and submission of these disclosures and tracks progress.	Represents a critical measure of research output and potential translation to a commercial application.	VCU OVPRI and Innovation Gateway	Monthly report available
Goal Addressed: Health Sciences				

Academic and Health Affairs Committee: Dashboard Measures for 2017-18

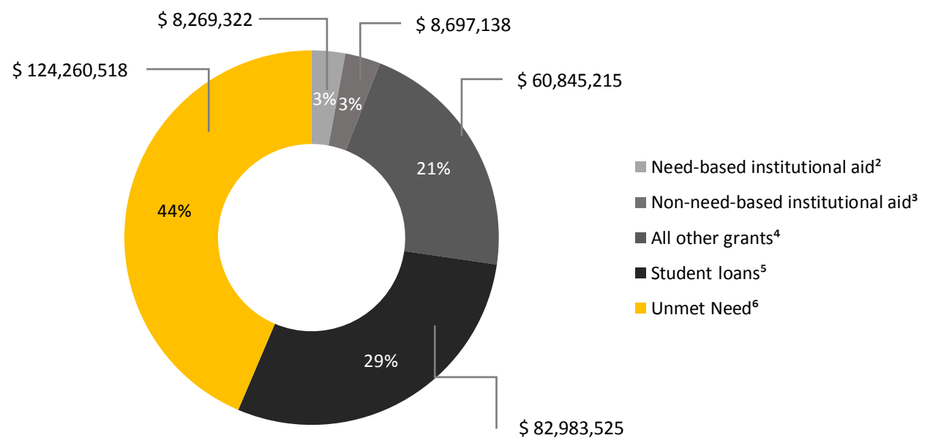
Performance Measure	Description	Data Significance	Data Source	Data Frequency
Interprofessional student contact hours	IPE Student engagement identifies # of direct student contact hours in formal interprofessional education activities by which they learn together by working in teams. Students participating in IPE activities are from the Schools of Allied Health Professions, Dentistry, Medicine, Nursing, Pharmacy and Social Work.	Health care delivery is shifting to an interdisciplinary, team-based approach. IPE contact hours present a high-level view into the degree to which IPE is embedded into the education of VCU's 1st professional and other healthcare workers.	VCU Center for Interprofessional Education and Collaborative Care and SIS	Twice per year at the conclusion of the fall and spring terms.
Multi-School Research Awards	# of funded research projects for which key research personnel have at least one home department within VCU health sciences schools or units, plus clinical psychology and social work AND additional key personnel in departments outside VCU health sciences schools or units	Provides a measure of interdisciplinary effort for which health sciences-related research is a principle component	OVPRI	Ongoing (year-to-date)
% of students enrolling from diversity pipeline programs	Reflects the percentage of students enrolled at VCU Health Sciences and programs nationally who come from two local, structured, college-level programs: VCU Acceleration and Summer Academic Education Program (SAEP).	Provides view into success of VCU efforts to encourage students from all backgrounds to pursue a career in the health sciences	Student Information System (SIS) and Division for Health Sciences Diversity	Annual (fall Census II, mid-October)

Financial Need and Aid
Degree-seeking In-state Undergraduates[1]
AY 2014-15 through AY 2016-17

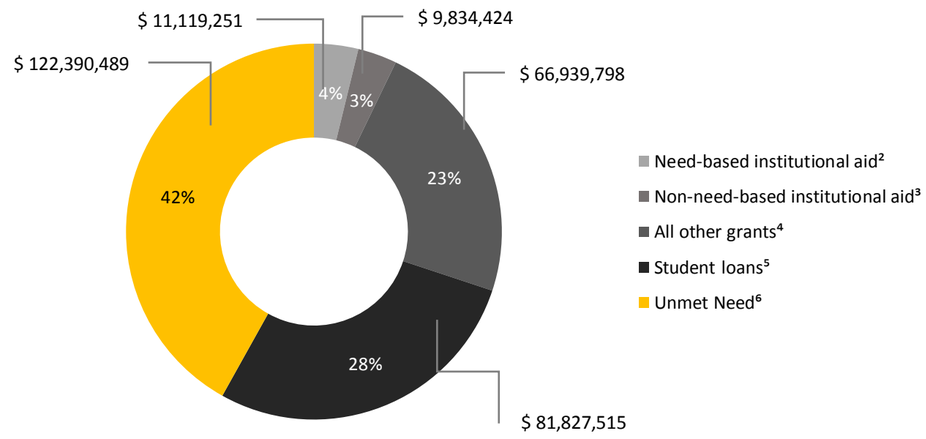
	AY 2014-2015				
	Pell Eligible			Non-Pell	
	Poverty	Non-Poverty	Total	(Submitted FAFSA)	Total
# of Students by Cohort	3,283 (21.3%)	4,158 (26.9%)	7,441 (48.2%)	7,989 (51.8%)	15,430 (100%)
Need-based institutional aid[2]	$ 2,627,958	$ 3,794,881	$ 6,422,840	$ 2,596,171	$ 9,019,010
Non-need-based institutional aid[3]	$ 808,138	$ 1,161,531	$ 1,969,670	$ 4,169,676	$ 6,139,345
All other grants[4]	$ 22,186,131	$ 25,073,957	$ 47,260,088	$ 11,742,451	$ 59,002,539
Student loans[5]	$ 19,624,342	$ 23,854,622	$ 43,478,964	$ 40,164,099	$ 83,643,063
Unmet Need[6]	$ 31,910,299	$ 43,780,637	$ 75,690,936	$ 33,852,522	$ 109,543,458



	AY 2015-2016				
	Pell Eligible			Non-Pell	
	Poverty	Non-Poverty	Total	(Submitted FAFSA)	Total
# of Students by Cohort	3,145 (20.4%)	4,165 (27.1%)	7,310 (47.5%)	8,084 (52.5%)	15,394 (100%)
Need-based institutional aid[2]	$ 2,629,453	$ 3,294,659	$ 5,924,111	$ 2,345,210	$ 8,269,322
Non-need-based institutional aid[3]	$ 1,044,359	$ 1,856,170	$ 2,900,528	$ 5,796,610	$ 8,697,138
All other grants[4]	$ 24,543,776	$ 25,003,170	$ 49,546,947	$ 11,298,268	$ 60,845,215
Student loans[5]	$ 18,865,533	$ 24,149,688	$ 43,015,221	$ 39,968,304	$ 82,983,525
Unmet Need[6]	$ 33,747,610	$ 50,048,754	$ 83,796,364	$ 40,464,154	$ 124,260,518



	AY 2016-2017				
	Pell Eligible			Non-Pell	
	Poverty	Non-Poverty	Total	(Submitted FAFSA)	Total
# of Students by Cohort	3,187 (20.4%)	4,107 (26.3%)	7,295 (46.7%)	8,330 (53.3%)	15,625 (100%)
Need-based institutional aid[2]	$ 4,552,932	$ 3,756,502	$ 8,309,433	$ 2,809,817	$ 11,119,251
Non-need-based institutional aid[3]	$ 1,275,549	$ 2,079,188	$ 3,354,737	$ 6,479,687	$ 9,834,424
All other grants[4]	$ 27,019,478	$ 25,716,772	$ 52,736,250	$ 14,203,547	$ 66,939,798
Student loans[5]	$ 18,482,655	$ 22,490,416	$ 40,973,071	$ 40,854,444	$ 81,827,515
Unmet Need[6]	$ 32,017,859	$ 47,736,796	$ 79,754,655	$ 42,635,835	$ 122,390,489



[1] In-state, degree-seeking undergraduate students, excluding those who did not submit FAFSA

[2] Need-based institutional aid (institutional grants/scholarships) reflect centrally-administered, need-based institutional funds

[3] Non-need-based institutional aid (grants/scholarships) reflect merit and other institutional funds that are not solely based on need

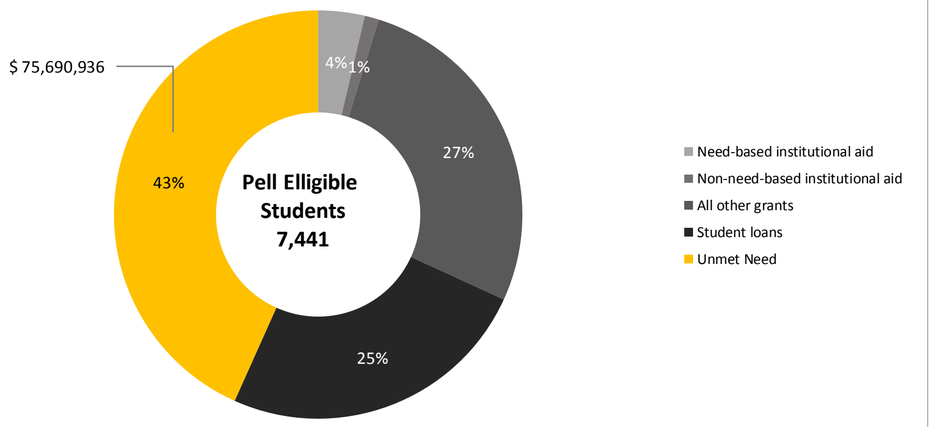
[4] All other grants include all grants/scholarships that are provided from federal, state, private, athletic and endowment funds

[5] Student loans reflect all student loans from public funding sources, excluding parent PLUS and private loans

[6] Unmet need relects net cost less all grants/scholarships and loans for families with remaining unmet need

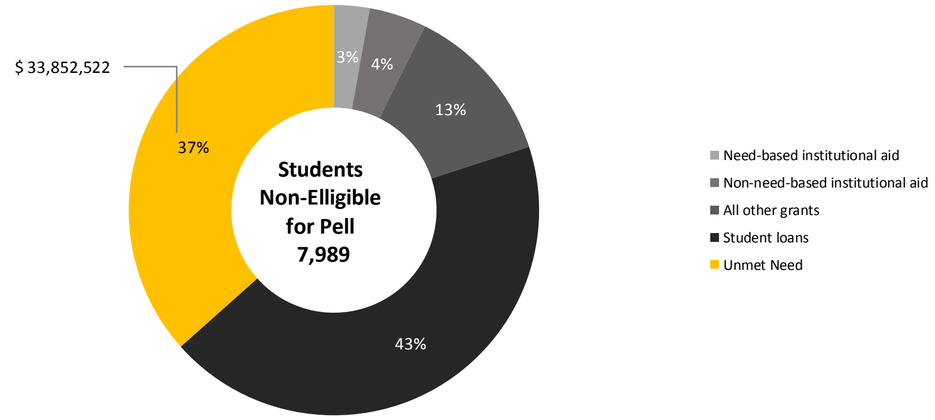
Financial Need and Aid
Degree-seeking In-state Undergraduates[1]
AY 2014-15 through AY 2016-17

AY 2014-15



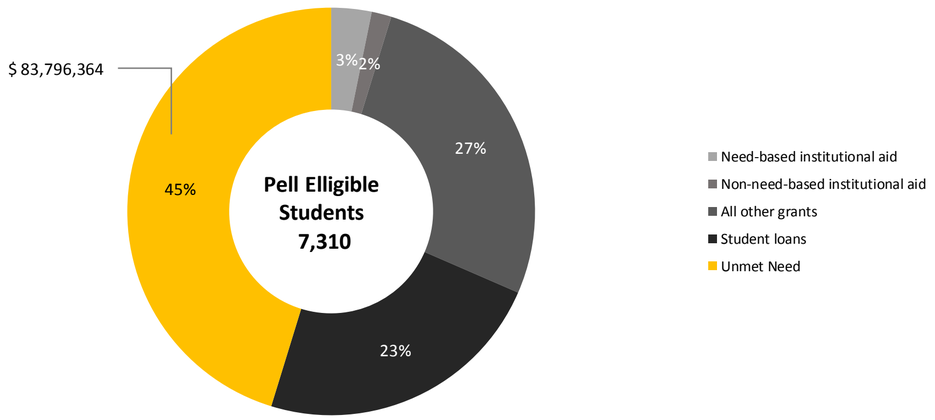
Source: Banner Financial Aid Data - Office of Planning and Decision Support

AY 2014-15



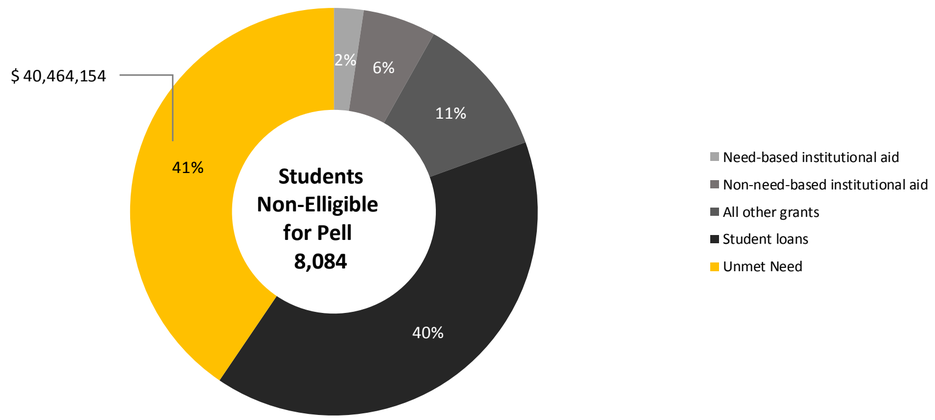
Source: Banner Financial Aid Data - Office of Planning and Decision Support

AY 2015-16



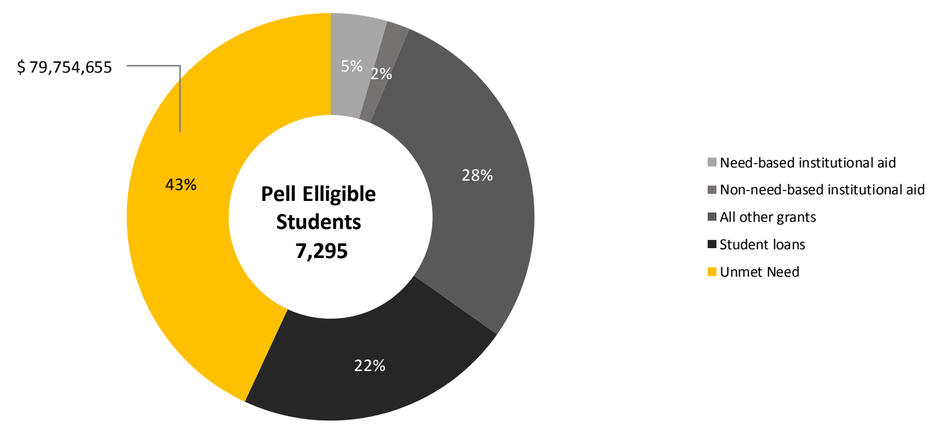
Source: Banner Financial Aid Data - Office of Planning and Decision Support

AY 2015-16



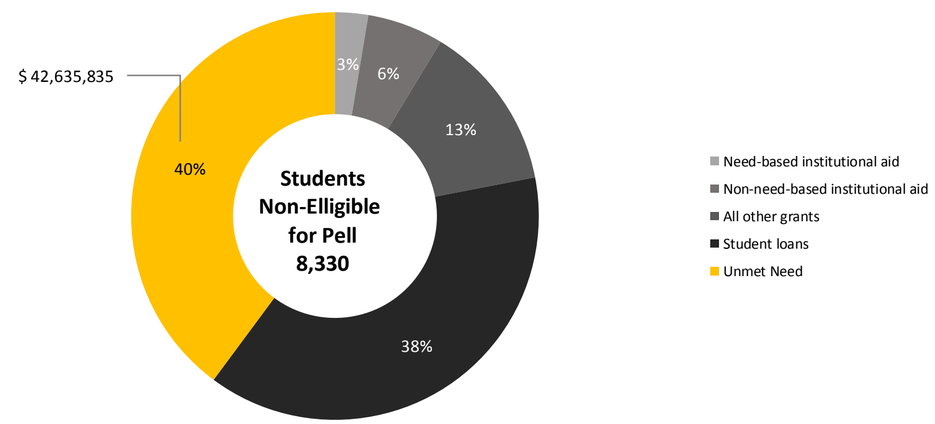
Source: Banner Financial Aid Data - Office of Planning and Decision Support

AY 2016-17



Source: Banner Financial Aid Data - Office of Planning and Decision Support

AY 2016-17



Source: Banner Financial Aid Data - Office of Planning and Decision Support

[1]In-state, degree-seeking undergraduate students, excluding those who did not submit FAFSA

Division of Strategic Enrollment Management
Board of Visitors Report
August 2018

Tomikia P. LeGrande, Ed.D.

Vice Provost
Division of Strategic Enrollment Management

ADMISSIONS AND ENROLLMENT HIGHLIGHTS
FALL 2018
AUGUST 2018

New Students

- The size of VCU's fall 2018 freshman class will be about 4,550, with an acceptance rate of 77%. This will be VCU's largest freshman class ever.

- The fall 2018 freshman class has a slightly higher middle 50% range of high school GPAs (3.33-3.98), as compared to fall 2017 (3.30-3.95). The SAT middle 50% range for 2018 (1070-1250) is identical to 2017.

- Based on current enrollments, some freshman class statistics are:

    - 55% minority students, up from 53% last year
    - Top 5 feeder counties, comprising 49% of the freshman class:
        - Fairfax County
        - Loudoun County
        - Henrico County
        - Chesterfield County
        - Prince William County
    - 9% out-of-state
    - 2% international students
    - 33% first-generation students

- VCU will enroll approximately 1,700 transfer students, with 70% coming from the Virginia Community College System.

Student Success

- VCU anticipates positive increases in one year retention rates, and six year graduation rates compared to 2017.

Overall Enrollment

- Fall 2018 degree-seeking graduate enrollments will be approximately 4,700, or 15% of the total enrollment. First professional enrollments will be about 1,710.

- Overall, VCU's total headcount enrollment for fall 2018 is estimated to be approximately 30,900 compared to 31,036 for fall 2017.

I. UNIVERSITY ENROLLMENT

Figure 1: Fall 2017 and Fall 2018 Enrollments

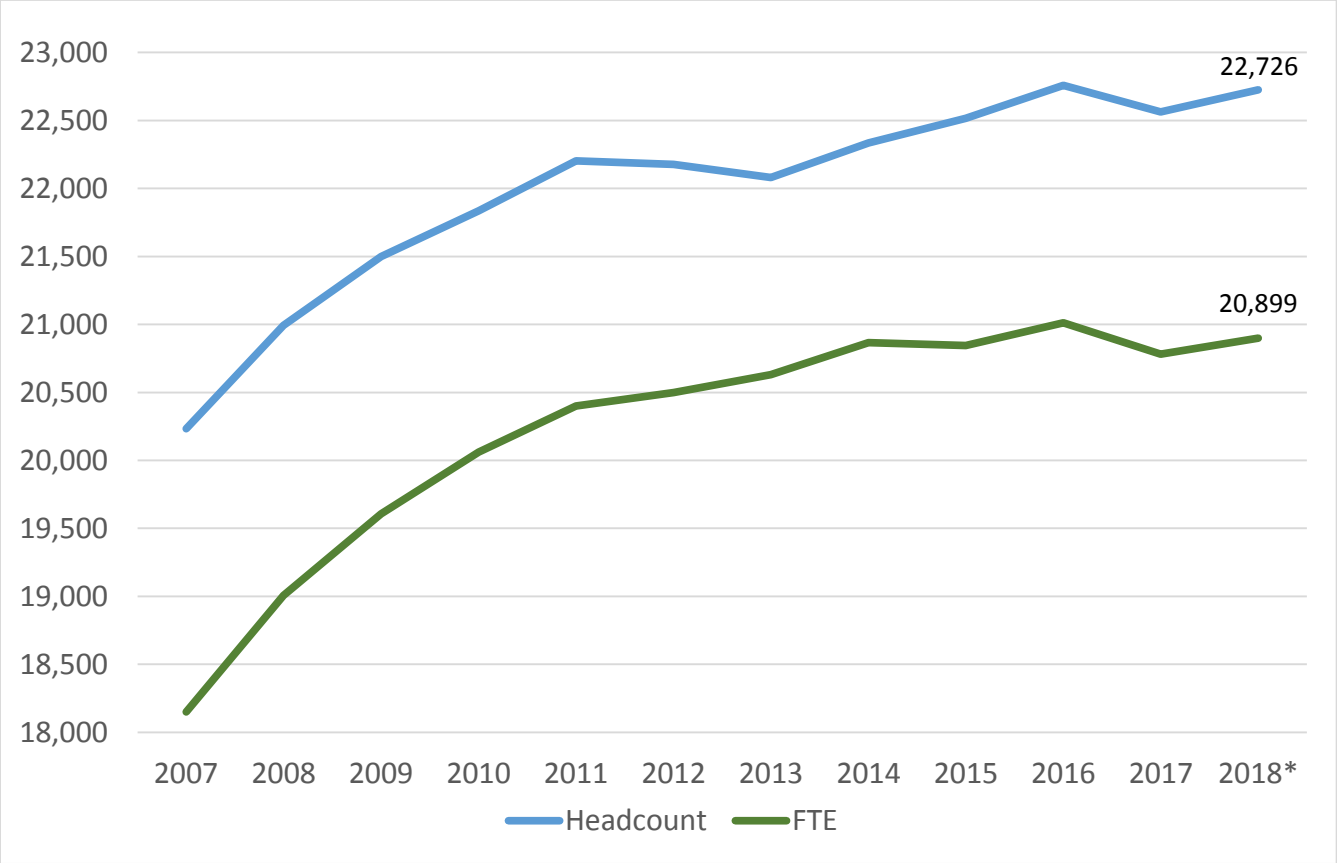
	Headcount		FTE[a]	
	Fall 2017	Fall 2018*	Fall 2017	Fall 2018*
On-campus				
Undergraduate	22,383	22,585	20,716	20,850
New	6,072	6,247	5,903	6,066
Continuing	16,311	16,338	14,812	14,785
Non-degree Seeking Undergraduate	650	506	397	279
Graduate				
Master's	2,791	2,697	2,314	2,229
Doctoral	1,477	1,583	1,324	1,418
Post-Master's Certificate	39	38	16	17
Non-degree Seeking Graduate	456	521	237	278
First Professional				
Dentistry	407	405	407	405
Medicine	828	802	828	802
Pharmacy	508	505	703	680
Total On-campus	29,539	29,642	26,941	26,959
Off-campus				
Undergraduate	180	141	66	49
Non-degree Seeking Undergraduate	797	358	142	44
Graduate	405	372	208	204
Non-degree Seeking Graduate	115	71	40	24
Total Off-campus	1,497	942	456	322
Total Enrollment	31,036	30,584	27,397	27,280

[a]FTEs are calculated by dividing the total number of student credit hours by 15 for undergraduate and first professional students, and 12 for graduate students.

*As of August 31, 2018

II. Undergraduate Enrollment

Figure 2: Fall 2007 to Fall 2018 Undergraduate Headcount and FTE Enrollments



*As of August 31, 2018

Note: FTEs are calculated by dividing the total number of student credit hours by 15.

III. GRADUATE ENROLLMENT

Figure 3: Fall 2017 and Fall 2018 Graduate Enrollments By School

	Fall 2017			Fall 2018*		
	New	Continuing	Total	New	Continuing	Total
Engineering	107	184	291	60	228	288
Graduate School	0	0	0	1	0	1
Health Professions	116	622	738	114	609	723
Humanities and Sciences	135	402	537	140	416	556
LD Wilder School	60	161	221	53	142	195
Office of the VP for Research	3	26	29	5	25	30
School of Business	297	431	728	352	442	794
School of Dentistry	18	22	40	15	24	39
School of Education	149	507	656	147	490	637
School of Medicine	91	263	354	91	265	356
School of Nursing	105	194	299	123	196	319
School of Pharmacy	16	47	63	17	37	54
School of Social Work	182	295	477	172	266	438
School of the Arts	61	104	165	58	89	147
School of the Arts – Qatar	8	6	14	1	8	9
Schools of Business & Engineering	1	7	8	0	6	6
VCU Life Sciences	20	57	77	25	55	80
da Vinci Center	0	15	15	2	16	18
Total	1,369	3,343	4,712	1,376	3,314	4,690

*As of August 31, 2018

IV. RACE AND ETHNICITY

Figure 4: Freshman Enrollments by Race/Ethnicity

	2014	2015	2016	2017	2018*	2014	2015	2016	2017	2018*
African American	562	790	838	801	881	15.7%	19.3%	19.8%	19.1%	19.4%
American Indian / Alaskan Native	10	9	10	7	4	0.3%	0.2%	0.2%	0.2%	0.1%
Asian	546	633	598	647	744	15.2%	15.5%	14.1%	15.4%	16.3%
Hawaiian / Pacific Islander	3	3	3	1	4	0.1%	0.1%	0.1%	0.0%	0.1%
Hispanic	292	336	381	433	518	8.1%	8.2%	9.0%	10.3%	11.4%
International	111	119	114	98	108	3.1%	2.9%	2.7%	2.3%	2.4%
Not Reported	80	129	140	114	107	2.2%	3.2%	3.3%	2.7%	2.4%
Two or More Races	238	234	280	353	348	6.6%	5.7%	6.6%	8.4%	7.6%
White	1,744	1,837	1,870	1,747	1,839	48.6%	44.9%	44.2%	41.6%	40.4%
Total	3,586	4,090	4,234	4,201	4,553	100%	100%	100%	100%	100%

*As of August 31, 2018

Figure 5: University Enrollments by Race/Ethnicity

	2014	2015	2016	2017	2018*	2014	2015	2016	2017	2018*
African American	4,799	4,957	5,101	5,300	5,294	15.4%	15.9%	16.3%	17.1%	17.3%
American Indian / Alaskan Native	84	75	79	70	62	0.3%	0.2%	0.3%	0.2%	0.2%
Asian	3,626	3,769	3,822	3,892	3,978	11.6%	12.1%	12.2%	12.5%	13.0%
Hawaiian/Pacific Islander	51	42	38	37	27	0.2%	0.1%	0.1%	0.1%	0.1%
Hispanic	2,002	2,165	2,246	2,348	2,571	6.4%	6.9%	7.2%	7.6%	8.4%
International	1,677	1,703	1,600	1,452	1,251	5.4%	5.5%	5.1%	4.7%	4.1%
Not Reported	1,541	1,217	1,264	1,232	1,321	4.9%	3.9%	4.0%	4.0%	4.3%
Two or More Races	1,282	1,447	1,556	1,684	1,778	4.1%	4.6%	5.0%	5.4%	5.8%
White	16,101	15,867	15,525	15,021	14,302	51.7%	50.8%	49.7%	48.4%	46.8%
Total	31,163	31,242	31,231	31,036	30,584	100%	100%	100%	100%	100%

*As of August 31, 2018

V. TRANSFER STUDENTS

Figure 6: Transfers

	2010	2011	2012	2013	2014	2015	2016	2017	2018*
Virginia's Community Colleges	1,264	1,430	1,334	1,411	1,573	1,453	1,516	1,310	1,202
Other Virginia Institutions	380	340	306	312	343	268	275	295	252
Non-Virginia Institutions	407	374	381	372	371	301	278	306	259
Total	2,043	2,144	2,021	2,095	2,287	2,022	2,069	1,911	1,713

*As of August 31, 2018

Figure 7: Top Feeder VCCS Institutions

	2010	2011	2012	2013	2014	2015	2016	2017	2018*
Northern Virginia Community Colleges	261	349	356	395	439	445	461	379	363
Reynolds Community College	358	336	368	340	380	323	347	294	243
John Tyler Community College	179	230	177	211	253	235	237	224	191
Germanna Community College	80	94	81	85	96	82	89	67	69
Total from VCCS	1,264	1,430	1,334	1,411	1,573	1,453	1,516	1,310	1,202

*As of August 31, 2018

VI. FRESHMAN PROFILE

Figure 8: Freshman Class Profile

	2010	2011	2012	2013	2014	2015	2016	2017	2018*
Number in Class	3,615	3,803	3,617	3,588	3,586	4,090	4,234	4,201	4,553
HS GPA Middle 50%	3.16-3.75	3.19-3.81	3.29-3.88	3.29-3.88	3.28-3.90	3.30-3.95	3.30-3.96	3.30-3.95	3.33-3.98
SAT Middle 50%	990-1190	980-1180	1020-1190	1010-1190	1010-1200	1000-1190	990-1190	1070-1250	1070-1250
Out-of-state	449	522	546	516	431	518	477	389	421
Percent Minority	44%	45%	44%	46%	46%	49%	50%	53%	55%
First Generation	N/A	N/A	N/A	N/A	33%	33%	35%	33%	33%
International	79	99	138	125	111	119	114	98	108

*As of August 31, 2018

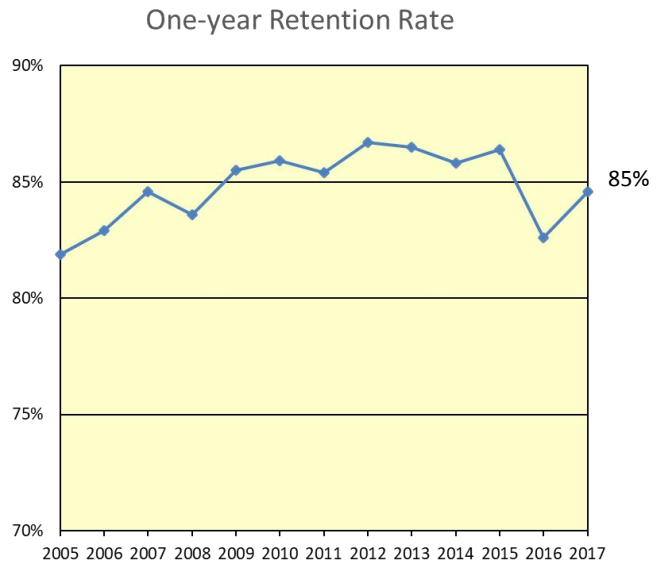
VII. First Generation First-time Freshmen

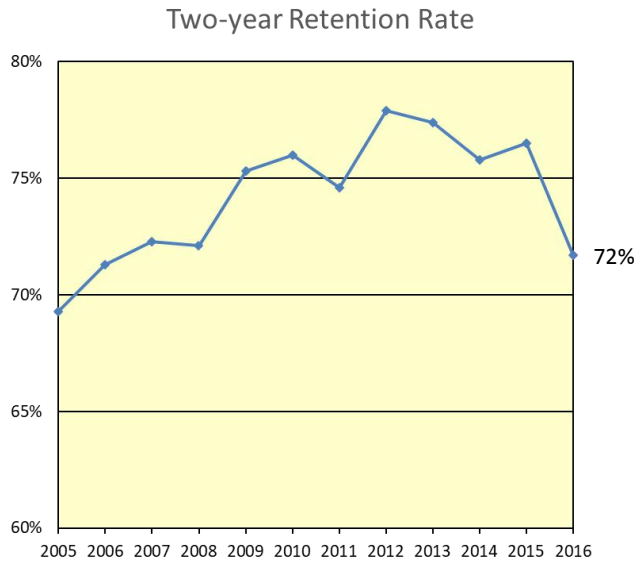
Figure 9: First Generation Freshmen By Race / Ethnicity

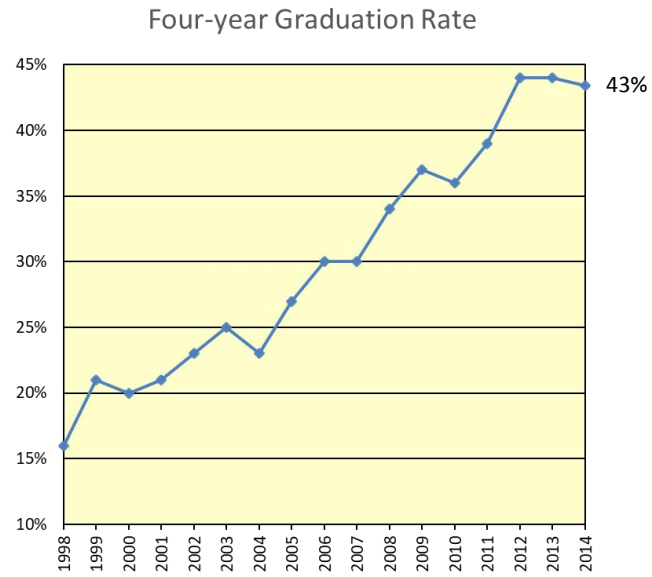
	Fall 2016	Fall 2017	Fall 2018*	Fall 2016	Fall 2017	Fall 2018*
	Number	Number	Number	Pct. of Total	Pct. of Total	Pct. of Total
African American	396	359	396	47.3%	44.8%	44.9%
American Indian / Alaskan Native	5	4	0	50.0%	57.1%	0.0%
Asian	206	207	240	34.4%	31.9%	32.2%
Hawaiian/Pac Islander	0	1	0	0.0%	100.0%	0.0%
Hispanic	204	230	278	53.5%	53.1%	53.6%
International	30	36	34	26.3%	36.7%	31.4%
Not Reported	8	12	10	5.7%	10.5%	9.3%
Two or More Races	120	146	127	42.9%	41.3%	36.4%
White	506	399	413	27.1%	22.8%	22.4%
Total	1,475	1,394	1,498	34.8%	33.1%	32.9%

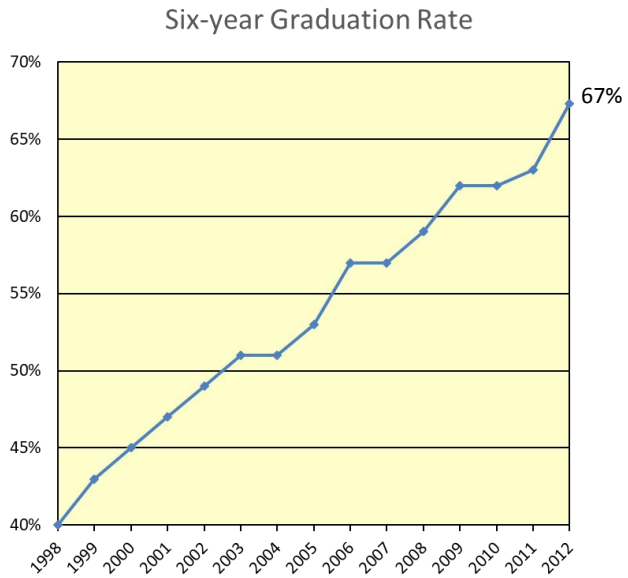
*As of August 31, 2018

VIII. First-time Freshman Retention and Graduation Rates



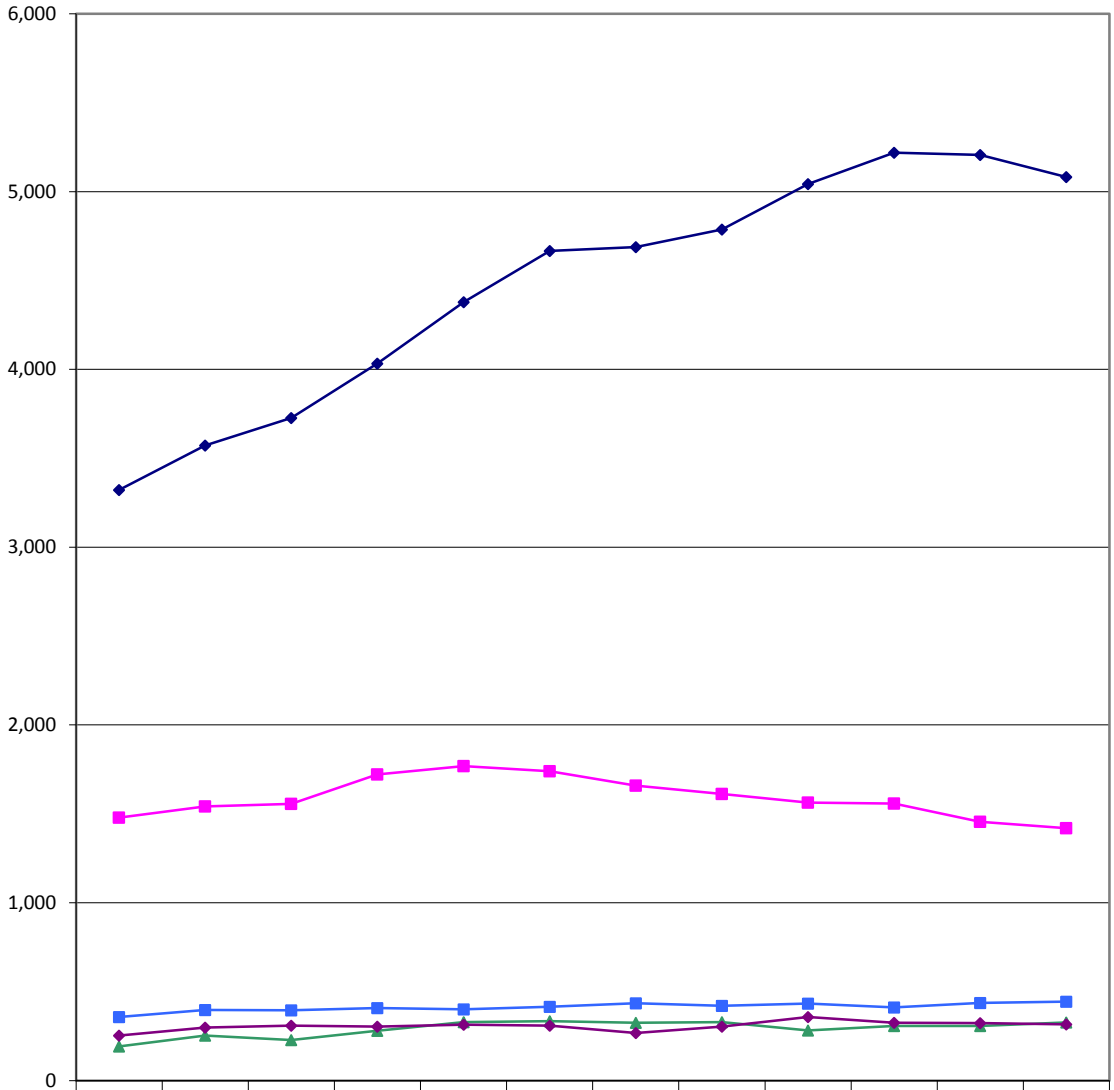






(Most recent rates are estimated and are not yet final)

IX. Degrees and Certificates Awarded



	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Baccalaureate	3,322	3,572	3,726	4,033	4,379	4,666	4,688	4,786	5,043	5,219	5,207	5,082
Master's	1,478	1,542	1,556	1,721	1,769	1,740	1,658	1,611	1,563	1,557	1,455	1,420
Doctoral	191	252	227	280	329	333	324	329	282	306	306	326
First Professional	357	397	395	407	401	415	434	420	432	412	437	444
Certificate	253	297	308	303	314	308	268	304	357	324	323	316

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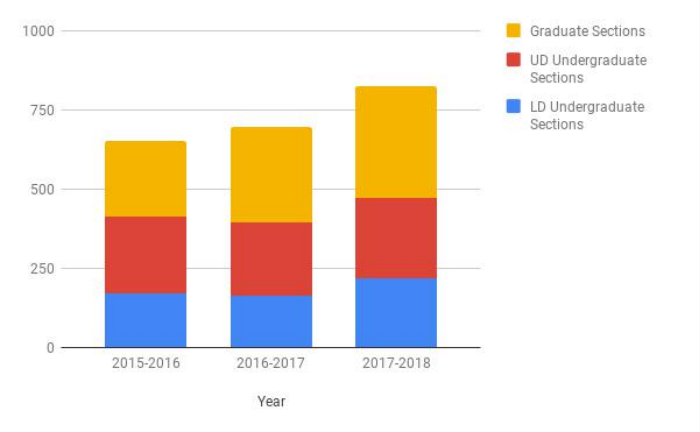
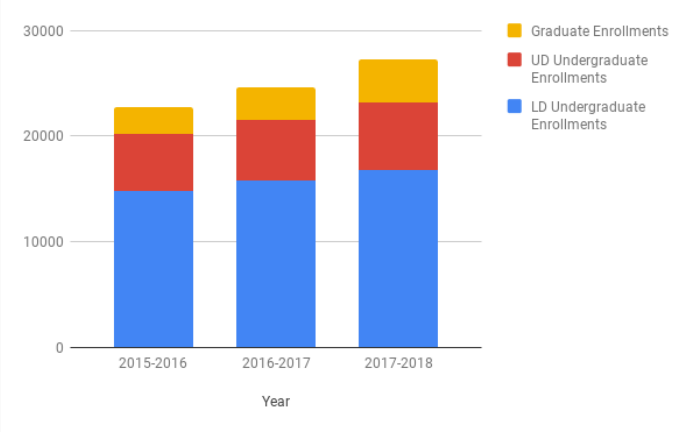
VCU Board of Visitors
Academic and Health Affairs Committee

September 14, 2018

Online Course Enrollment* over time





	2015-2016		2016-2017		2017-2018		2018-2019	
	Sections	Enrollment	Sections	Enrollment	Sections	Enrollment	Sections	Enrollment
Lower Division Undergraduate	171	14,845	164	15,746	219	16,823	75	7,085
Upper Division Undergraduate	242	5,371	232	5,802	251	6,385	80	2,313
Graduate	239	2,552	300	3,037	355	4,016	153	2,016
Total	652	22,768	696	24,585	825	27,224	308	11,414

* Enrollment is duplicated headcount for the academic year

Source: Office of Planning and Decision Support

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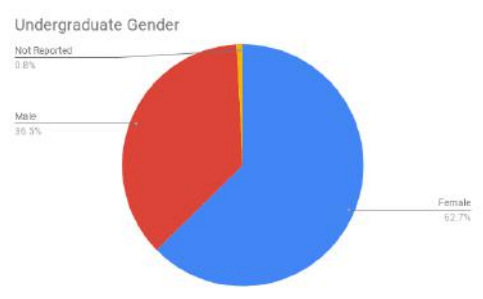
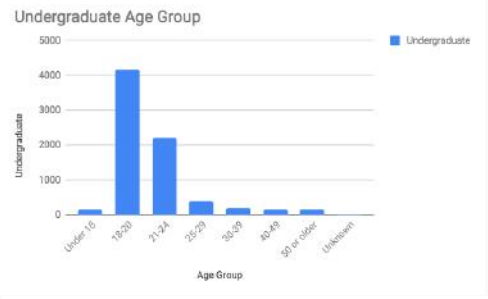
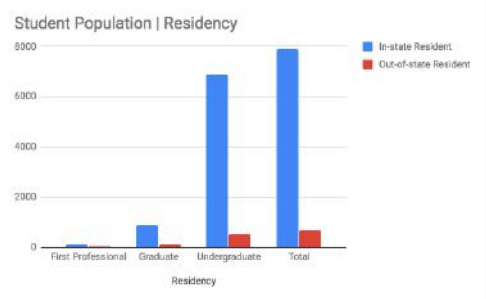
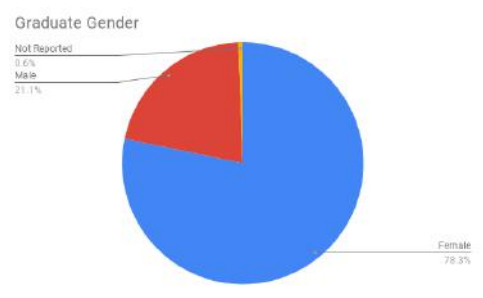
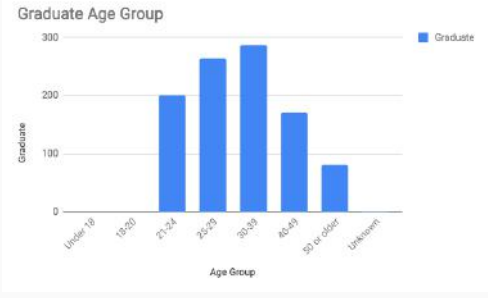
Online Enrollment 2018 Snapshot

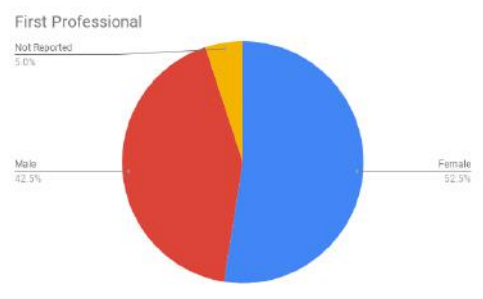


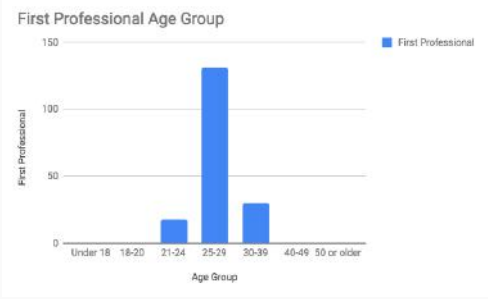






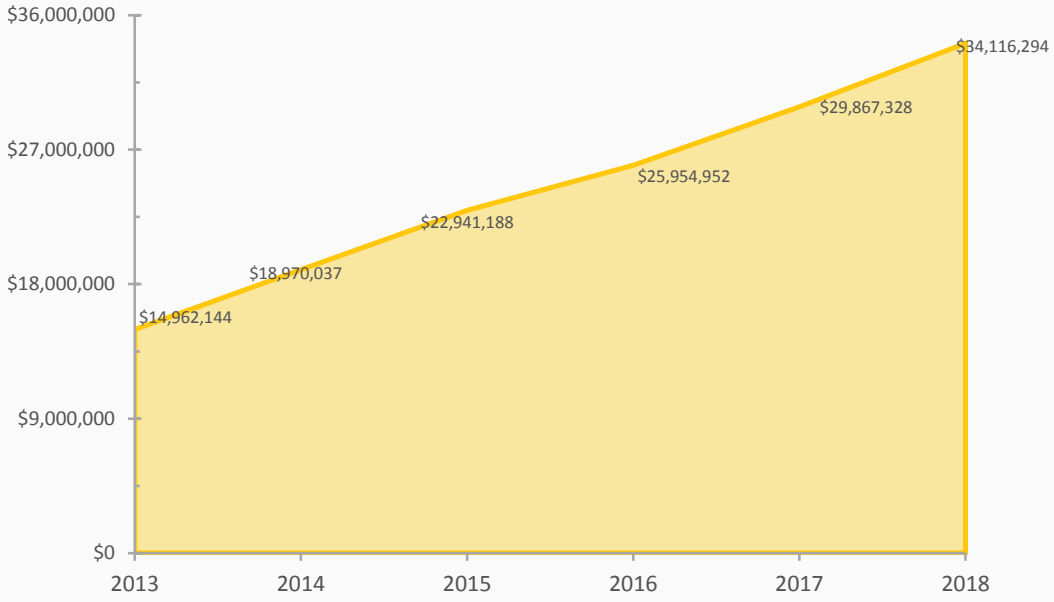






Source: Office of Planning and Decision Support

Online Tuition Revenue



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Online Enrollment 2018 Snapshot

	First Professional	Graduate	Undergraduate	Total
Total	179	1,003	7,437	8,619
Age Group				
Under 18			145	145
18-20			4,170	4,170
21-24	18	201	2,216	2,435
25-29	131	263	384	778
30-39	30	287	195	512
40-49		171	163	334
50 or older		80	146	226
Unknown		1	18	19
Gender				
Female	94	785	4,660	5,539
Male	76	212	2,716	3,004
Not Reported	9	6	61	76
Residency				
In-state Resident	120	880	6,912	7,912
Out-of-state Resident	59	123	525	707
Pell Eligible		3	2,429	2,432
International	2	8	176	186
First Generation			1,369	1,369

Source: Office of Planning and Decision Support

Online@VCU

1. External Partnership for Scaling Online Programs

- Strategy allows significant forward progress before internal infrastructure is in place.

2. Build internal infrastructure and service capacity

- Develop capacity to support the variety of campus needs related to teaching with technology including, but not limited to, online program development.

3. Encourage & support exploration of new models of instruction

- Position VCU as a leader in the exploration of new models of instruction in response to the evolving student enrollment and affordability patterns and pressures.

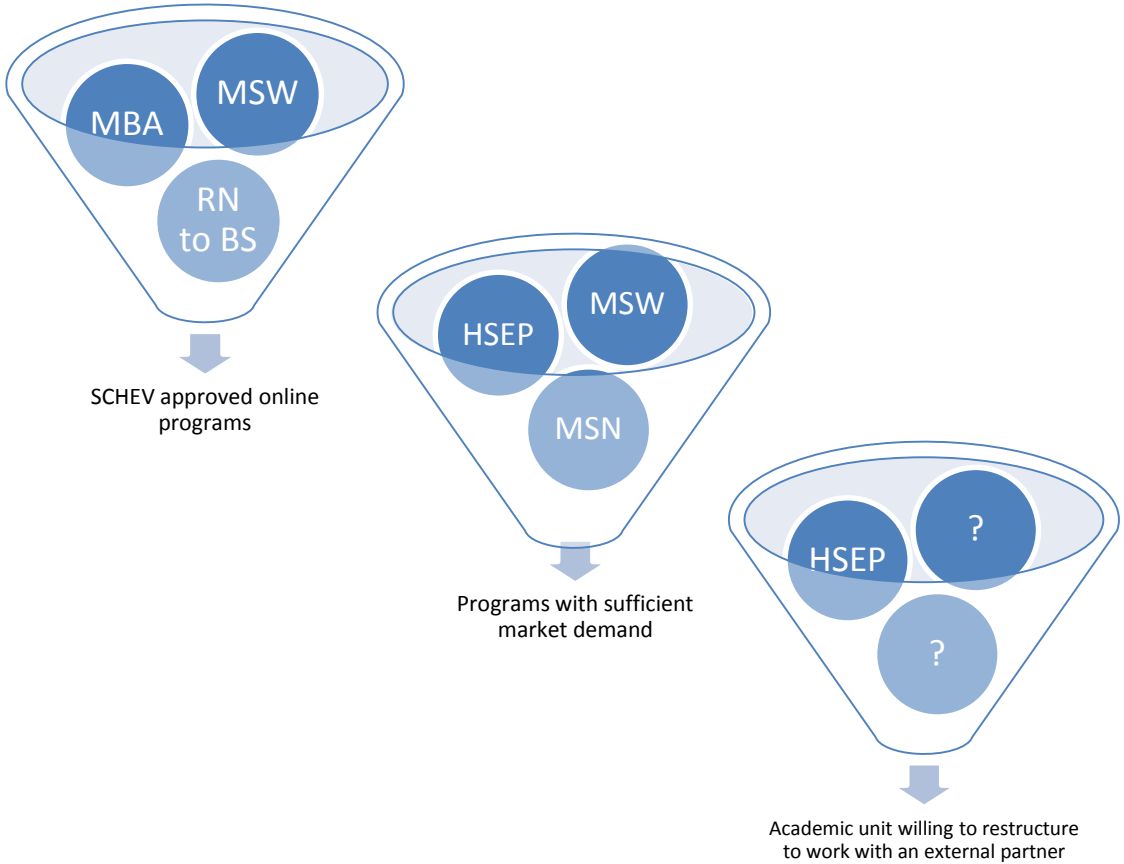
1. In partnership with an external OPM company, quickly transition existing online programs into a format that competes well nationally and elevates the **Online@VCU** brand (highest priority, short and long term planning in progress)
2. Build internal capacity to support quality online course, program, and faculty development across a wide variety in campus readiness and needs (high priority, short and long term planning in progress)
3. Build internal capacity to support exploration of new models of instructional delivery and competency-based educational approaches (CBE) (lower priority until strategies #1 and #2 are more fully implemented, long term planning in progress)

Online@VCU

1. External Partnership for scaling Online Programs

Progress to date

- Identifying eligible programs
- Preparing academic units for operational change
- Vetting financial projections and investment strategies



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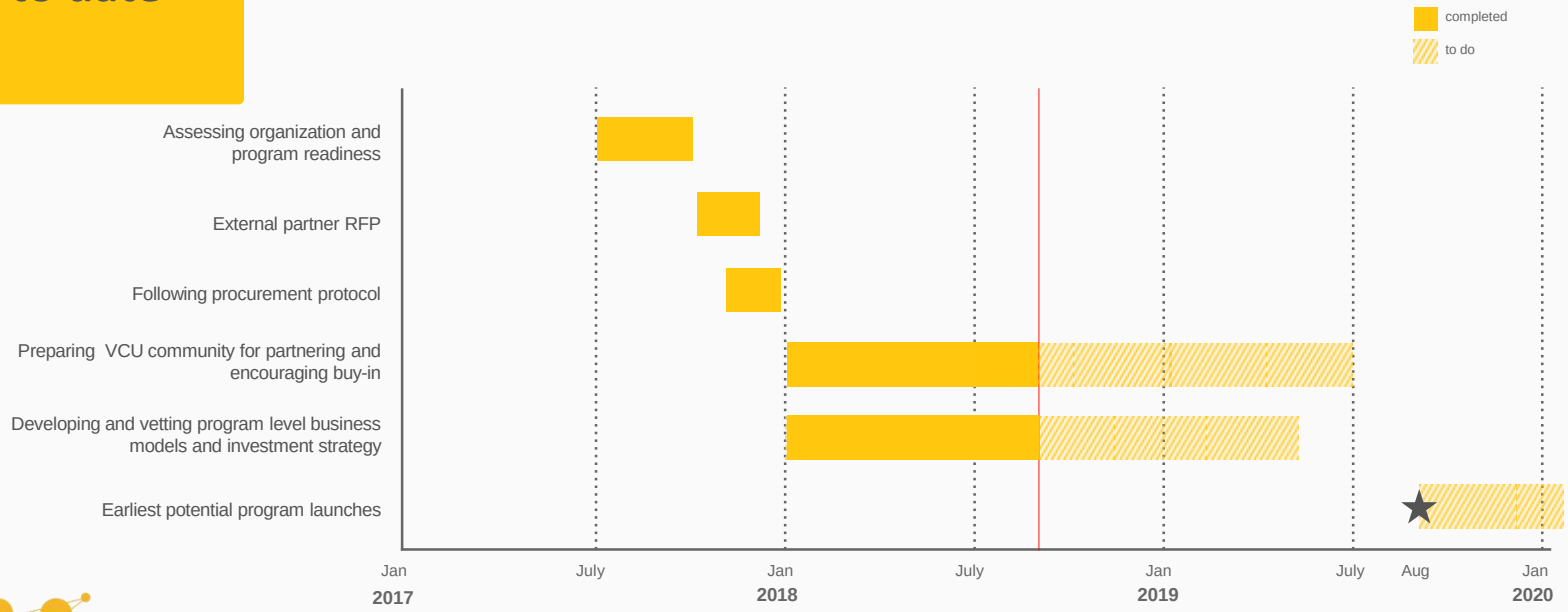
External Partnership for scaling Online Programs

Progress to date

Project Timeline



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2. Building internal infrastructure & service capacity

Progress to date

- Staff reorganization and hiring began in January 2018 and is continuing
  - +1 Director, +3 instructional designers, +1 Compliance Coordinator, +2 Videographers
  - Posting for 3 additional instructional designers
- Study underway to determine options available for increasing office space
- Launching new faculty development and course development initiatives
  - Online course facilitator training
  - Going Online@VCU
  - 50 custom workshop offerings

Online@VCU

3. Encourage & support exploration of new models of instruction

Progress to date

- Extended partnership proposal to Coursera and they declined citing a decision not to accept additional partners at this time
- Researching other MOOC platform options with Academic Technologies
- Planning to sponsor academic leaders' travel to MOOC/Learning at Scale conferences

Online@VCU

THE CHRONICLE OF HIGHER EDUCATION®

Explainer

What College Leaders Need to Know About Online Program Management

What are online program managers?

Colleges hire online program managers, or OPMs, to help develop and run online academic programs. OPMs include large companies, such as 2U, Academic Partnerships, Bisk/University Alliance, Pearson Online Learning Services, and Wiley Education Services. There are also smaller managers that have moved into the market recently that offer more customized, fee-for-service options. Partnering with OPMs can benefit colleges by reducing the costs to start and operate an online program, and allow those institutions that are new to digital courses to quickly build capabilities.

Arrangements with OPMs have gone awry at a few institutions and have been questioned by faculty members, who argue that such partnerships outsource academic offerings and can threaten educational quality and standards. During the last 10 years, however, online program management has become more common with even the most prestigious institutions signing on. Last year, Harvard University announced it was joining forces with an OPM to offer a digital certificate in business analytics. The course welcomed 69 students for the nine-month course in March 2018.

How are deals with OPMs structured?

Traditionally such partnerships are involve a revenue-sharing model. Colleges give about 50 percent of revenue per student to the OPM, although in some cases the cut may be as high as 80 percent.

In return, OPMs often pay significant start-up costs—providing upfront money that an institution may lack. That investment can cover setting up an online-learning platform, creating digital-marketing campaigns, and advising on the recruitment of staff. OPMs can also produce course content, provide a team of admissions and support counsellors, and hire cyber and privacy experts to manage security online.

But not every OPM has the funds to

Cast a wider network

You're under growing pressure to expand online and compete with other top institutions, both local and national. Pearson can help you build, scale, and sustain an exceptionally robust online presence.

Today, we work with more than 45 partners and support 250+ online degree programs. We're helping them solve the challenges of access, retention, competition, and engagement, and we can help you, too.

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provide such comprehensive services—some may lack capacity to tailor those services for a particular school, experts say—nor will all colleges need a complete suite of options. Increasingly, alternatives are appearing, partly as a response to demand for greater choice from schools. Smaller OPMs provide unbundled offerings to cover areas where a college has a specific gap. These are as varied as online course design, 24/7 IT support, marketing, student recruitment or finding tutors. For a fee, a college can purchase virtually any service it requires.

What are the benefits of these partnerships?

When successful, such programs can greatly enhance an institution's long-term financial stability by enrolling a new student population. And working with an OPM can get programs off the ground more quickly and efficiently than a college could alone. OPMs can give colleges access to know-how they do not have in house. If problems arise with the program or the technology supporting it, an OPM can draw on its experience to propose solutions.

Norwich University is a military college in Vermont that offers online education to students in Africa, Latin America, the Middle East, and the United States. The university began a partnership with an OPM in the early 2000s, growing an entire graduate school online and expanding its bachelor's programs. It retained control of teaching and course content and offers courses in cyber security, business, criminal justice, and other related fields. By adhering closely to its historical mission, it built on its brand, a key element in enabling an online program thrive.

William Clements, dean of the college of graduate and continuing studies at Norwich, says OPMs offer a scale and reach that in-house teams would struggle to bring. The arrangement was more cost effective than if the college itself had invested in new technology or sought local tutors, he says.

What are the possible pitfalls?

But OPM partnerships don't work in every case. For critics, traditional, bundled OPM partnerships are expensive, rigid, and cherry-pick only courses with the most potential for growth. In some cases, institutions may outgrow the agreements, or simply feel that their needs are not being met.

In some cases, colleges have severed ties with OPMs, dissatisfied by poor enrollment, a lack of openness about the operations, and the difficulty at times of managing services for two separate set of students.

In 2008, St. Leo University ended its arrangement with an OPM company. Administrators at the university felt they had acquired the expertise needed to manage such programs, and the college wanted to have greater control over how it developed, says Melanie Storms, senior vice president of Worldwide Operations at St. Leo.

In addition, colleges may face concerns from faculty about these commercial relationships, which can encroach on areas traditionally under the purview of professors, like course design and the curriculum. Last year, faculty members at Eastern Michigan University objected to its deal. They worried that the contract ceded too much oversight of teaching to the OPM and would lead to low quality instruction. The local chapter of the American Association of University Professors filed a complaint stating that the university had failed to consult properly about the deal,

while faculty launched a petition against the administration's "secretive contract" with the OPM.

What do college leaders need to consider?

Whether a college works with an OPM should depend on several questions: Does the college aim to recruit students locally, nationally, or internationally? (If the goal is local students, a college may not need an OPM.) What online capabilities does the college have? What level of autonomy does the institution wish to maintain over its online offerings? Does its mission and goals align with the OPM? Colleges should regularly assess whether the agreement works for them, industry experts stress.

Colleges should think carefully about the sort of relationship they wish to have, and how it will enable them to meet their goals. Any contract should include required benchmarks and provisions for ending the partnership if they are not met.

When embarking on these agreements, colleges leaders should manage change delicately, and work to include their academic staff. Getting faculty buy-in is critical to the success of any external partnership. Faculty need to feel comfortable with the level of control they will retain over course content and teaching.

Finally, institutions must not underestimate the expertise they already have in-house. While some decide they need overarching support, other institutions are clear that they turn to OPMs only for highly specialized services, like developing augmented reality STEM labs or virtually-enabled digital campuses.

In what direction is the OPM market moving?

When online education first emerged, higher ed institutions were slow to move courses to a digital environment. Some that did so achieved outsize presence relative to their overall share of traditional students. And as the market has matured, colleges going online face stiffer competition. They must position themselves carefully, and develop a strategy that builds on their core strengths, such as a prestigious brand or particular academic field.

The landscape is shifting for OPMs, too. The past four years has seen an explosion of investment in the ed-tech sector. College leaders receive a deluge of emails from companies trying to sell their services, and the partnerships themselves are becoming more short-term. A competitive market is likely to lead to a rise in consolidations among OPMs, and fragmentation of services.

THE CHRONICLE
of Higher Education®

Learning difficulties

Universities withstood MOOCs but risk being outwitted by OPMs

Most revenue from web degrees goes not to their providers but to middlemen

Print edition | Business Jul 19th 2018

"THERE'S only two things you do in the navy," says Vice-Admiral Al Harms, former commander of the *USS Nimitz*, a nuclear-powered aircraft carrier that is one of the world's biggest ships. "You fight, and you train to fight. Hopefully, most of the time you're training." The navy got Mr Harms hooked on continuous education, and in his 60s he felt the need for a top-up, so he took the online MBA programme of the University of Illinois (UoI), alongside his son. "I found it a very cool way to learn. You have the self-directed portion, working by yourself, and the enriching portion with class projects."

When the web started to shake up higher education a decade or more ago, it was widely expected that the Massive Open Online Courses (MOOCs) it spawned would disrupt universities in the same way that digital media undermined newspapers and music firms. But that assumption rested on a misunderstanding of what students are paying for. They are not buying education for its own sake, but rather a certificate from a respected institution.

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If the value created in a business is an incumbent's stamp of approval, it follows that the business will be hard to disrupt. Providers of MOOCs have thus struggled to make much money. What has turned out to be a real business, by contrast, is putting incumbents online. An industry of "online programme managers" (OPMs), who also recruit students, has sprung up. With their help pioneers such as Arizona State University have been followed by big guns like Berkeley, Yale and Harvard, which focus on graduate education.

For universities the internet opens up a vast new market: professionals who can't leave jobs and families but would like to boost their careers with a master's, a

professional degree or executive education. The wage premiums for a master's degree and a professional degree over a bachelor's are 19% and 57% respectively. Technological change also means that knowledge acquired years ago may be out of date. "I wanted to build the skills necessary for the next phase of my career, to remain relevant to my industry and my clients," says Ann Cleland, a partner in Horne, an accountancy firm, who is taking the Harvard Business Analytics Programme while still leading a disaster-recovery compliance programme in Puerto Rico. For her, as for many, an on-campus course was not an option.

Going digital also frees universities from the physical constraints of their campus—the UoI has 99 MBA students on campus and 1,750 more enrolled online. UoI's MBA, at $22,000, is unusually cheap: most online degrees are at least as costly as, and often more expensive than, on-campus programmes—usually in the $50,000-100,000 range.

Around a third of graduate education in America is now online, according to Richard Garrett of Eduventures, a consultancy. Many universities take a do-it-yourself approach, but the better-known ones tend to go into partnership with the OPMs. 2U, a ten-year-old startup, led the way, and has been followed into the business by, among others, Pearson, an educational publisher, and Coursera (which started off as a provider of MOOCs). Coursera joined up with UoI to create its online MBA programme.

Ivory power

Investors reckon this looks like a good business opportunity. 2U has a market capitalisation of $5bn, despite losses of $29m on revenues of $287m in 2017. Putting a programme online involves large upfront costs, but the ten-year contracts that 2U signs—it takes almost two-thirds of the revenue from tuition fees—are extremely attractive over the long term. Revenues have risen by over 30% annually for the past three years and according to Chip Paucek, 2U's chief executive, they will continue to do so for the foreseeable future.

Further opportunities beckon outside America. In the autumn of 2019 University College London will launch an online MBA in partnership with 2U, and London's Imperial College will offer an online global public health masters with Coursera.

Since announcing the course in March, Imperial has had 10,000 expressions of interest from 170 countries for 75 places.

Some think the OPM business is a bit too good, and that universities are giving up too much revenue. John Katzman, who founded 2U and left it in 2012, explains that he came to feel that the company, like other OPMs, had tilted towards shareholders and away from students. Full-service OPMs, he says, are too expensive. Better tech means it now costs $2m-3m to put a programme online, against $10m-15m when he started, but the revenue split has hardly shifted. That won't last, says Mr Katzman, who has founded a budget option—Noodle Partners, which offers deals based on a fee as well as a revenue split. "As students understand they're paying for Wall Street profits, as faculty understand that their work is just fuelling the next billion dollars of market cap, I will end up eating the OPMs' lunch," he says.

Such criticisms chime with broad concerns about for-profit education, but 2U's Mr Paucek is unmoved. "It's not going into Wall Street pockets. It's going into a long-term engine of social mobility." He has never lost a customer, he says.

Nonetheless, 2U's numbers will encourage competition. OPMs are proliferating, just as student-recruitment costs are rising. "Student-acquisition costs have been going up," says Iwan Streichenberger, president of Pearson Online Learning Services, "because of the premiums that Google and Facebook are charging." Along with LinkedIn, these are the main marketing channels. Over time universities will surely try to take a larger slice of revenues themselves. It doesn't take a master's degree to work out what these developments will do to the OPMs' margins.

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INSIDE HIGHER ED
(https://www.insidehighered.com)

Is a shakeout coming for online program management companies?

Submitted by Lindsay McKenzie on June 4, 2018 - 3:00am

Ten years ago, just three or four companies existed to help universities start online programs. Now by some counts, roughly three times that many are working with colleges -- striving, and sometimes struggling, to expand their businesses.

Is a shakeout in the offing? Most analysts and observers say yes, given the number of providers, the lack of differentiation among many of them and growing qualms from some college officials about the industry's traditional business model of revenue shares and long-term lock-ins. The latter has spawned even more competition, from a new set of companies charging fees for specific services, rather than the bundles that the OPMs have historically used.

"I think there is a roll-up coming in the OPM industry," said Joshua Kim, director of digital learning initiatives at the Dartmouth Center for the Advancement of Learning (and an *Inside Higher Ed* blogger [1]). "There are just too many players."

Even several leaders of OPM companies agreed that consolidation in the industry is likely, noting that it is a typical phase of any maturing market -- but none volunteered themselves to be among the ones that won't survive.

But James Sparkman, co-founder of Alpha Education, a consultancy that helps universities choose OPM companies to partner with, doesn't think a shake-up is coming any time soon. Continuing movement by colleges into online education -- and the fact that most of the institutions just now going online are latecomers likely to need outside help -- will ensure demand for partnerships with revenue-share OPM companies for the foreseeable future, he said.

"Universities continue to look to these partnerships as a catalyst for innovation," said Sparkman, adding, "I don't see demand letting up at all."

A Changing Landscape

On-campus enrollment may be flat or declining at many institutions, but online, student numbers are growing. Opinions about the quality of online education are slowly improving [2], and now just under 30 percent of students studying on campus take at least one class online [3].

To launch a successful online degree, institutions need expertise in instructional design, must be skilled in identifying areas where there is student demand, and must have enough funds to develop and market the program, which several sources said could cost upward of $1 million each.

For institutions that don't have this expertise, or cash, working with a traditional OPM can be an attractive option, as risks and costs are shared. The OPM company typically invests capital up front to develop the program, receiving a share of the tuition revenue over several years to recoup its investment. As these companies often take 50 percent or more of the tuition revenue, they have a financial incentive to do a good job marketing the program and enrolling students.

A recent Eduventures report, "Expanding the OPM Definition [4]," explored how the OPM market is changing and expanding. Writing about this report in a blog post, Howard Lurie, principal analyst of online and continuing education at Eduventures, said that offering full up-front investment (as companies like 2U, Academic Partnerships and Pearson Online Learning Services do) is a model that has "staying power."

Many institutions are happy with these arrangements, said Lurie. But as online learning has become mainstream, more institutions have built in-house capacity, and are turning to "fee for service" options for help in specific areas such as online marketing, enrollment or instructional design. This arrangement offers greater flexibility for the institution, and shorter contracts, said Lurie. But he views the emergence of fee-for-service options as an "evolution, not a rejection, of the OPM model." (Many of the fee-for-service companies have been founded by people who cut their teeth at traditional OPMs, including John Katzman, who founded Noodle Partners after co-founding 2U, and Paxton Riter, founder of iDesign, who was a senior official at Academic Partnerships.)

The Eduventures report found that two- and four-year institutions with more than 300 fully online students had higher online enrollment rates when they worked with an end-to-end OPM partner than those that did not. The report, which was based on IPEDS data between 2012 and 2015, as well as proprietary survey data, concluded that these OPM providers had provided an "enrollment bump" to many schools. But the proportion of institutions working with OPM partners remains unclear.

Kim Taylor, founder and CEO of Cluster [5], previously founded a company called Ranku that helped institutions identify which online programs they should launch or expand. Before Ranku was acquired by Wiley [6] in 2016, Taylor said, she commissioned research that indicated that less than 10 percent of all online programs were launched with help from an OPM partner. Riter estimates that about

20 percent of four-year institutions are working with a partner to deliver online programs, a number that he thinks may expand to 50 percent in the next few years.

Taylor observed that even the biggest OPM companies run only a few hundred programs, which, she said, "is not really that big when you think about it." But Sparkman said that being a small OPM is not necessarily problematic, as some OPM companies only have a handful of university partners and are running "a nice little business."

Counting the number of OPM companies is difficult because the definition is changing, said Riter. Phil Hill, co-founder of Mindwires Consulting and co-publisher of the *e-Literate* blog, counted 27 companies in his spring 2018 [7] analysis of the market, including massive open online course providers like Udacity and Coursera. The Eduventures report counted 33, but Steve Hodownes, CEO of Orbis Education, said he believed there to be more than 40.

In a blog post [8], Hill described the OPM market as "chaotic and messy."

Companies like Bridgepoint Education [9] and Kaplan [10], as they refashion themselves to spin off their degree-granting activities into nonprofit institutions, are trying to enter the space, and are being closely observed by potential competitors. In an interview, Hill said he anticipates that only OPM companies that are "very specialized" will survive and thrive.

Kim agreed, adding that more differentiation would help universities figure out who they should be talking to when looking into working with an OPM. Some companies have already found a niche and are doing well, said Kim. Orbis Education [11], for example, has specialized in health care, and 2U -- which just raised another $350 million and is widely viewed as in a league of its own in terms of OPM viability -- is known for working with elite institutions.

Number of Partners and Online Programs for a Selection of OPM Providers:

Company Name	Institutional Partners	Online Programs
2U	34	58
Academic Partnerships	> 60 (U.S. only, 30 non-U.S. partners managed by sister companies.	> 650
Collegis Education	~ 20 (All U.S.)	Not disclosed
Helix Education	7	96
HotChalk	Not disclosed	Not disclosed
iDesign	25 (All U.S.)	~ 40
Keypath Education	> 20	> 80
Learning House	26	> 460
Noodle Partners	12	24
Pearson Online Learning Services	40 (U.S. only, more outside U.S)	> 300
Synergis Education	6 (All U.S.)	21
Wiley Education Services	35 (three of these non-U.S.)	250

Note: The following companies did not respond to requests for data prior to publication: All Campus, Apollidon, Everspring, Extension Engine, Highereducation.com, Meteor Learning & Orbis.

Consolidation on the Horizon?

Ryan Craig, co-founder and managing director of higher education investment firm University Ventures, thinks that too many OPMs are focusing on the same area -- graduate degrees at four-year institutions.

Steve Fireng, founder and CEO of revenue-share OPM company Keypath Education, and previously CEO of Embanet, an OPM company that was acquired by Pearson [12] in 2012, agreed that the market could be more differentiated. He thinks consolidation is likely, but it would require some kind of trigger -- what that might be, he isn't sure.

Fireng said that many companies, including his own, are having conversations about mergers as a way to expand their business. With more competition, it's getting harder to find new institutional partners, and the cost of launching online programs is going up as student acquisition costs increase, he said.

“Everybody is wondering how to get to scale,” said Fireng. “Consolidation is an evolution that a lot of industries go through, and we’re probably at that point.”

Taylor, like Craig and Fireng, thinks consolidation is likely, but warned that mergers are tricky. Several companies have already tried to merge unsuccessfully but have not disclosed this publicly, she said. Furqan Nazeeri, a partner at fee-for-service company Extension Engine, said that venture-backed OPM companies are under pressure from their investors to grow, making consolidation a more likely option for these companies.

Not surprisingly, some of the people most confident that traditional OPMs will struggle are people with a vested interest -- those running fee-for-service companies that compete with those who work through revenue sharing. Riter, whose fee-for-service company specializes in instructional design, said he thinks there is "only a finite number of institutions" that will continue to seek out the revenue-share model, "and many of them are already doing it."

Katzman of Noodle Partners, a company that offers OPM services for a fee, predicts a stark future for companies that fail to move away from revenue-share deals because of growing dissatisfaction with that business model. He compared revenue-share OPMs to the businesses in the early 2000s that built websites for millions of dollars. At the time, they were the only people who knew how to do it, but as more workers learned HTML, these companies went from "very valuable to pretty much out of business" in a very short span, he said.

"The notion that a decade from now, universities are going to be paying half or two-thirds of their revenue for some marketing and tech services is ridiculous," said Katzman.

Some companies, like Wiley Education Services, have started to offer more flexibility in their finance models -- offering revenue-share, fee-for-service and hybrid deals. But for many revenue-share incumbents, "change will come hard," said Lurie. "They won't change until they start seeing an erosion of their market share," he said. Asked whether he thinks this is likely, Lurie said simply that it is "possible."

But Keypath's Fireng disagrees. He thinks there will still be institutions in the future that will want the full service and up-front investment that a revenue-share OPM partner provides.

Whether colleges decide to go with a fee-for-service OPM, a revenue share, or a hybrid deal will depend on how much money institutions want to invest, what expertise they have in-house and how big they want their programs to be.

Universities that want more than 300 students enrolled in a program will need "significant capital infusion," said Fireng. For universities that want to go big online, "the tuition-share model works really well," he said.

There is, of course, a fourth option open to schools that want to launch programs online -- going it alone.

“I think the future is that schools will go online by themselves,” said Taylor. “If you’re not using an OPM, you don’t have to grow as big.” The programs may not be great, she said, but they might be “good enough” to attract a sustainable number of students -- especially if the institution has a strong local brand. Even online, people like to study near where they live, said Taylor.

But Riter says that few institutions are equipped to go it alone. “Do I see many universities that are equipped like a Southern New Hampshire to go it alone? No, I don’t."

The Long Game

There are three factors that Taylor thinks will help OPMs to survive going forward. One is finding a “point of view,” said Taylor -- a distinctive mission or niche. For example, 2U is a revenue-share OPM that has established itself as a “premium option." Two is owning the technology end-to-end -- enabling the OPM to create a truly streamlined experience. Three is being “really, really good at program selection,” said Taylor.

But Chip Paucek, co-founder and CEO of 2U, believes that the single biggest factor determining the future success of OPM companies is the quality of the product they produce, regardless of how universities pay for it. Whether companies offer revenue-share, hybrid or fee-for-service deals, they all bear responsibility for the reputation of the institutions they work with. "It's all about quality and whether you can deliver it or not," he said. Paucek added that 2U has a 10-year track record of excellence, with a strong focus on student retention, as well as student enrollment. "It's a shared success model," he said.

Looking forward, OPM companies may look to build on their partnerships with universities by moving into new areas, such as career services, or international student enrollment, said Sparkman. Riter sees a role for fee-for-service OPMs as “consultants” that can help universities build their own capabilities in-house.

Amy Shackelford, director of student services at Blackboard, and Craig, agreed that they would like to see OPMs align themselves more closely with work-force needs -- offering non-degree-level certifications. Arguably, 2U has already started moving in this direction with its acquisition of GetSmarter, said Sparkman.

"At the end of the day, what OPMs really are, are change enablers," said Sparkman.

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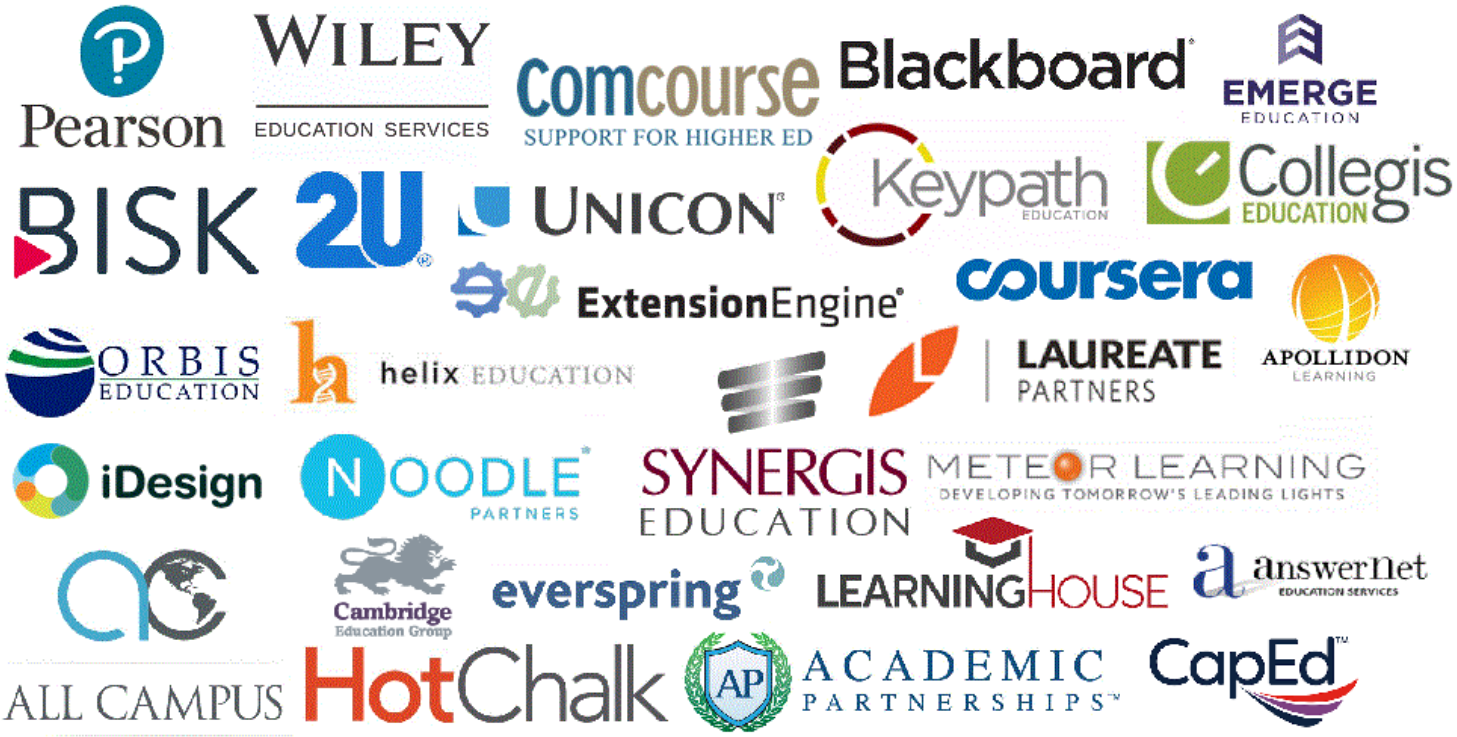

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10 Tips for Successful Public-Private Partnerships in Higher Education

1 Set realistic expectations – both in terms of timing and outcomes

- Entering into a long-term public-private partnership takes time — give yourself a reasonable window to conduct a strong search process AND time to negotiate your contract. Based upon the experience of others, this can take months, or even years.
- Once the contract is signed, don't expect to flip a switch and see immediate results. All partnerships require significant ramp-up time.
- Finally, when thinking of desired outcomes for your university, be realistic about what is possible through the partnership. Look to peer averages — not exceptional case studies — to be your guide.

2 Engage a broad base of stakeholders from your institution

- There are numerous examples of institutions going through the long process of signing a partnership agreement only to find there is no faculty and staff buy-in to execute on the project.
- When commencing the planning for a partnership, engage as many campus stakeholders as possible. Consider forming an advisory committee with faculty, staff, and students. If you run an RFP process, bringing together the right selection and review committee from the outset can help avoid surprises and resistance down the road.

3 Have the right leaders who can be agents of change

- Implementing a significant university partnership may require establishing new business processes across several functional areas. To effectively achieve this, appoint and empower initiative leadership with the credibility to engage the university community, marshall resources, and generate the commitment to make necessary changes.
- Furthermore, the partnership will likely demand dedicated oversight over the term of the agreement. Make sure you assign the role of point person to someone who brings significant project management capability.

4 Reach out to multiple companies and run a competitive selection process

- Whether running a formal RFP process or just an informal search, approach as many potential partners as possible. The landscape of companies changes rapidly and there are likely more options than you think.
- Use this time to familiarize yourself with the financial models available for the partnership and the risks that both the university and the company are taking to make the partnership work.
- Talking to a range of prospective partners will help you understand the nuanced differences between potential partners. It will also provide you with leverage come negotiation time if you have multiple options.

5 Do deep due diligence on potential partners

- Your university is entering into a long-term relationship and you want to make sure that your partner company will be fiscally stable for the duration of the agreement. With an abundance of private capital funding new

ventures serving higher education, it pays to do basic financial due diligence on your potential partner.

- What does the potential partner's balance sheet look like?
- What have been their results with similar institutions?
- Are there any red flags in their history? Have contracts been cancelled? Have they been subject to lawsuits or other regulatory issues?

6 Network with your peers and learn from their experience

- When considering a potential partner, there is no substitute for the recommendation of another college or university.
- Ask your potential partner for a list of references and make the calls. Also, try to talk with one or two institutions that currently work with your partner, but are not on the reference list.

7 Find a cultural fit with a partner, not just the best price

- Partnerships are not just about key terms, such as length of contract and financial terms, but about finding the right cultural fit.
- Selection criteria should be based on an all-inclusive value analysis, with particular emphasis on finding an experienced partner that "fits" with your institution. Ultimately the project's success will be driven by how well the parties work together.
- These are long-term relationships and the environment and people involved may change during the years of your partnerships. Pick a partner who you believe can evolve and grow with you.

8 Get financial and contractual expertise – understand all the potential risks

- P3s often have very complex contracts (100 pages is not unheard of) with dozens of key variables that could have significant financial, operating, and liability implications.
- Do not depend on a potential partner to provide you with all the financial statements you might need in order to complete a contract. Similarly, do not depend solely on a partner to give you guidance — financial, legal, or otherwise — around the contract.
- Be aware of any contractual liabilities your institution may be incurring should the partnership not perform as planned. Similarly, have contingency plans in place if you need to terminate the partnership early.

9 Clearly define your goals for the partnership

- University leaders need to assess exactly why they are exploring partnership options. Is the partnership about executing on elements of a strategic plan? Adding capabilities or expertise? Are there specific financial targets? The more clear you can be from the start about your motivations, the more likely you can craft a partnership to achieve your desired ends.
- Once you have embarked on a partnership, both parties need a shared vision for what success looks like. This means a detailed business plan, with clearly delineated roles and responsibilities, revenue streams, and key milestones for the term of the agreement.

10 Hold your partner accountable

- It's a marriage—both sides have leverage and should not be shy about speaking up if the relationship is not going according to your plan. Ultimately, you and your partner should be flexible and find ways where each can benefit.

"With your institution's reputation at stake in any of these partnership arrangements, the faculty will care. It pays to involve the faculty early in your process and often. Also, be sure to read the fine print. These can be complicated agreements, but the final responsibility always still rests with the universities."

—Dr. Belle Wheelan, President, Southern Association of Schools and Colleges Commission on Colleges

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GEORGE MASON UNIVERSITY

About George Mason University

George Mason University is Virginia's largest public research university. Located near Washington, D.C., Mason enrolls 36,000 students from 130 countries and all 50 states. Mason has grown rapidly over the past half-century and is recognized for its innovation and entrepreneurship, remarkable diversity, and commitment to accessibility. Learn more at www.gmu.edu.

About Alpha Education

Alpha Education provides strategic corporate development and advisory services for higher education institutions. Founded in 2011, the firm helps colleges & universities responsibly and effectively explore a wide range of private sector partnership opportunities. For more information, please visit www.alpha-education.com or contact us at info@alpha-education.com.

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About Strada Education Network

Strada Education Network℠ is a national 501(c)(3) nonprofit dedicated to improving lives by catalyzing more direct and promising pathways between education and employment. We engage partners across education, nonprofits, business, and government to focus relentlessly on students' success throughout all phases of their working lives. Together, we address critical college to career challenges through strategic philanthropy, research and insights, and mission-aligned affiliates — all focused on advancing the universal right to realized potential we call Completion With a Purpose®.

About This Directory

This directory is designed to be a guidebook for university leaders who are exploring opportunities for private sector partnership. Companies cited here are arranged alphabetically, under a set of keys based on their service category. Those categories include the following:

Expanding Reach and Access

Online program management

International student recruitment/ pathways provider

Non-credit program provider

Recruitment and enrollment services

Improving Student Success

Data analytics

Coaching/ mentoring

Career services

Increasing Physical Capacity

Student housing development

Other university real estate development

Leveraging Current Assets

Campus infrastructure services (parking, energy, etc.)

Brand licensing (including athletics)

Intellectual property acquisition/ licensing

About the Case Studies

Because they are drawn from public sources and from the partnering institutions themselves, the case studies included here are by nature limited in detail and tend to focus on the positive. We recognize that all partnerships in higher education, even the most successful of them, are challenging endeavors and in no way want to minimize the efforts, risks, and potential pitfalls when engaging in them. Please accept these cases for what they are—meant only for illustrative purposes to help define the various partnership categories.

The New Era of Public-Private Partnership in Higher Education

By Dr. Michelle Marks and James Sparkman

These are complex times for institutions of higher education. Perhaps with the exception of the handful of universities that are buffered by endowments over $1 billion, most US colleges and universities face intense financial pressures and fundamental challenges to their business models. Simultaneously, those same institutions are being asked to do more — to improve student outcomes, provide more and better options for an expanding student base (especially the adult learner), and to compete in an increasingly online and global marketplace.

Given this context, today's universities are more open to partnering with the private sector, in ways that may have been unimaginable just a decade ago.

Colleges and universities have long collaborated with the private sector to execute select non-core administrative functions. In particular, services that a private company might perform better, faster, or less expensively have lent themselves to outsourcing. Typical examples include security, custodial and laundry services, bookstore management, and food services (the latter is currently outsourced at more than three-quarters of all US colleges and universities).

Private companies have also provided significant liquidity to higher education, as evidenced in examples such as brand licensing arrangements, television broadcast rights, and acquisitions of intellectual property. Recent infrastructure concession sales have brought in huge capital to cash-starved state schools. Consider Ohio State University's recent experience raising some $1.6 billion in capital through long-term arrangements for parking garage management ($483M in 2012) and energy/power management ($1.165B in 2017). Or New York University's return of over $1 billion on the sale of its patent of Remicade, a rheumatoid arthritis drug developed through academic research.

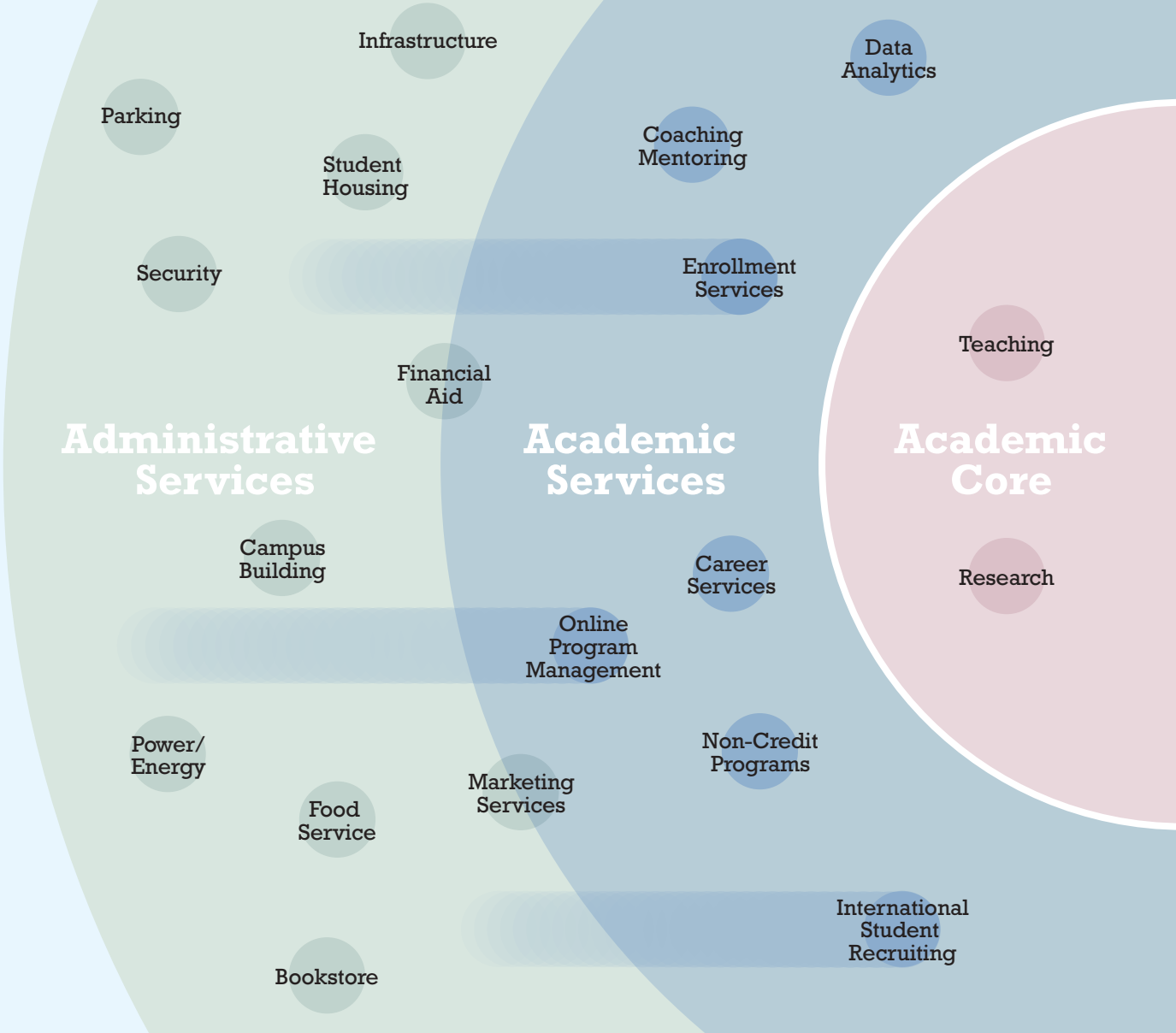
In certain functional areas, notably real estate development, true partnerships have evolved in which private capital has been brought to bear in the development of joint campus initiatives. In these public-private partnerships (P3s), colleges and universities collaborate with private equity capital firms, real estate developers, and builders to construct new campus infrastructure — often student residences but increasingly non-revenue-generating

real estate assets. An entire class of dedicated real estate investment trusts (REITs) has emerged over the past two decades just to support universities' student housing needs.

More recently, this trend in public-private partnerships has expanded from the administrative side of the university to also support the academic side. Like the real estate partnerships that have preceded them, academic partnerships involve a private sector partner providing a bundle of services, capital, and expertise, sharing both risks and rewards over a long-term contract (sometimes more than 10 years). Instead of CFOs or auxiliary officers leading these complex initiatives, they are managed by provosts, deans, and other academic leaders. And instead of building physical assets, such partnerships are developing online programs, recruiting international students, and supporting student success.

Evolution of partnerships in higher education

New services in support of the academic core



Administrative vs. academic partnerships

	Traditional P3s	Academic P3s
Growth Areas	Student housing, infrastructure	Online services, international pathways, non-credit programs
University offices leading efforts	CFO, Auxiliary	Provost, Dean
Leading Reasons for Partnerships		
Budget constraints	●	●
Fastest path to market	●	●
Higher quality of service	●	●
Impacts		
Students	●	●
Faculty	●	●
Brand	●	●
Partnership Details		
Long-term arrangements	●	●
Complex contracts	●	●
School ultimately responsible	●	●
Risks		
Has credit/financial implications	●	●
Has regulatory/ accreditation implications		●
Requires faculty input		●
Integral to student academic experience		●

This new era of academic partnerships in higher education brings new opportunities, but also a new set of risks. These ventures touch students and faculty directly and sit much closer to the core competencies of higher education institutions. Given the high stakes involved — financial as well as reputational — successful partnerships often pivot on a set of skills that many university leaders may need to develop. Specifically, these transactions require that academic leaders have the capacity to manage elaborate, often intricate business deals, including the ability to conduct deep due diligence on private companies, supervise competitive bidding processes, and lead complex negotiations. University administrators also need strong project management skills in order to oversee these relationships, protect the interests of their institution, and hold partners accountable.

While partnerships are occurring at hundreds of campuses nationally, many institutions work in a relative vacuum as they explore and pursue these opportunities. Never has it been so critical to gather information and find ways to network with peers. Our conference — *P3•EDU: Innovation & Public-Private Partnership in Higher Education* — and the associated P3•EDU 100 Directory were developed to address this need.

As university relationships with private companies evolve and potentially expand, success in large measure depends on an institution's ability to manage the partnership effectively. If done correctly, these partnerships — whether they are administrative or academic in nature — may be one path to a more sustainable future.

Dr. Michelle Marks
Vice President for Academic Innovation & New Ventures
George Mason University

James Sparkman
Partner
Alpha Education

10 Tips for Successful Public-Private Partnerships in Higher Education

1 Set realistic expectations – both in terms of timing and outcomes

- Entering into a long-term public-private partnership takes time — give yourself a reasonable window to conduct a strong search process AND time to negotiate your contract. Based upon the experience of others, this can take months, or even years.
- Once the contract is signed, don't expect to flip a switch and see immediate results. All partnerships require significant ramp-up time.
- Finally, when thinking of desired outcomes for your university, be realistic about what is possible through the partnership. Look to peer averages — not exceptional case studies — to be your guide.

2 Engage a broad base of stakeholders from your institution

- There are numerous examples of institutions going through the long process of signing a partnership agreement only to find there is no faculty and staff buy-in to execute on the project.
- When commencing the planning for a partnership, engage as many campus stakeholders as possible. Consider forming an advisory committee with faculty, staff, and students. If you run an RFP process, bringing together the right selection and review committee from the outset can help avoid surprises and resistance down the road.

3 Have the right leaders who can be agents of change

- Implementing a significant university partnership may require establishing new business processes across several functional areas. To effectively achieve this, appoint and empower initiative leadership with the credibility to engage the university community, marshall resources, and generate the commitment to make necessary changes.
- Furthermore, the partnership will likely demand dedicated oversight over the term of the agreement. Make sure you assign the role of point person to someone who brings significant project management capability.

4 Reach out to multiple companies and run a competitive selection process

- Whether running a formal RFP process or just an informal search, approach as many potential partners as possible. The landscape of companies changes rapidly and there are likely more options than you think.
- Use this time to familiarize yourself with the financial models available for the partnership and the risks that both the university and the company are taking to make the partnership work.
- Talking to a range of prospective partners will help you understand the nuanced differences between potential partners. It will also provide you with leverage come negotiation time if you have multiple options.

5 Do deep due diligence on potential partners

- Your university is entering into a long-term relationship and you want to make sure that your partner company will be fiscally stable for the duration of the agreement. With an abundance of private capital funding new

ventures serving higher education, it pays to do basic financial due diligence on your potential partner.

- What does the potential partner's balance sheet look like?
- What have been their results with similar institutions?
- Are there any red flags in their history? Have contracts been cancelled? Have they been subject to lawsuits or other regulatory issues?

6 Network with your peers and learn from their experience

- When considering a potential partner, there is no substitute for the recommendation of another college or university.
- Ask your potential partner for a list of references and make the calls. Also, try to talk with one or two institutions that currently work with your partner, but are not on the reference list.

7 Find a cultural fit with a partner, not just the best price

- Partnerships are not just about key terms, such as length of contract and financial terms, but about finding the right cultural fit.
- Selection criteria should be based on an all-inclusive value analysis, with particular emphasis on finding an experienced partner that "fits" with your institution. Ultimately the project's success will be driven by how well the parties work together.
- These are long-term relationships and the environment and people involved may change during the years of your partnerships. Pick a partner who you believe can evolve and grow with you.

8 Get financial and contractual expertise – understand all the potential risks

- P3s often have very complex contracts (100 pages is not unheard of) with dozens of key variables that could have significant financial, operating, and liability implications.
- Do not depend on a potential partner to provide you with all the financial statements you might need in order to complete a contract. Similarly, do not depend solely on a partner to give you guidance — financial, legal, or otherwise — around the contract.
- Be aware of any contractual liabilities your institution may be incurring should the partnership not perform as planned. Similarly, have contingency plans in place if you need to terminate the partnership early.

9 Clearly define your goals for the partnership

- University leaders need to assess exactly why they are exploring partnership options. Is the partnership about executing on elements of a strategic plan? Adding capabilities or expertise? Are there specific financial targets? The more clear you can be from the start about your motivations, the more likely you can craft a partnership to achieve your desired ends.
- Once you have embarked on a partnership, both parties need a shared vision for what success looks like. This means a detailed business plan, with clearly delineated roles and responsibilities, revenue streams, and key milestones for the term of the agreement.

10 Hold your partner accountable

- It's a marriage—both sides have leverage and should not be shy about speaking up if the relationship is not going according to your plan. Ultimately, you and your partner should be flexible and find ways where each can benefit.

"With your institution's reputation at stake in any of these partnership arrangements, the faculty will care. It pays to involve the faculty early in your process and often. Also, be sure to read the fine print. These can be complicated agreements, but the final responsibility always still rests with the universities."

—Dr. Belle Wheelan, President, Southern Association of Schools and Colleges Commission on Colleges

Description of Partnership Categories and Case Studies

Expanding Reach and Access

Shifting demographics and other factors have led colleges and universities to expand their reach into new markets, including degree programs for non-traditional students, both on-campus and online, and non-degree programs for executives and others. They have also expanded their outreach to international students. Seeing opportunities to help institutions achieve these goals, private companies have responded in a number of innovative ways.

EXPANDING REACH AND ACCESS

Online Program Management

To help traditional universities compete in the fast-growing but highly competitive and complex online program market, a category of private companies has emerged that partner with institutions to launch and grow exclusively online programs. Commonly known as online program managers (OPMs), these companies provide both the capital and the expertise to enable schools to offer online degree programs with less cost and shared risk. While some companies operate on a fee-for-service basis, many more approach the relationship as a partnership, with each side contributing resources to the enterprise and sharing the revenue on a split basis, ranging generally between 40% and 60%. These agreements are typically long-term, averaging 7-10 years, to allow the private partner a sufficient period to realize a return on the initial investment.

Though expertise can vary by partner, OPM companies generally provide services in a few principal areas: (1) market research, (2) marketing and lead generation, (3) enrollment management, (4) student retention services, and (5) technology-related support. Additionally, some OPMs offer course development services to assist a school's faculty in the development of online courses.

Representative companies:

2U

Academic Partnerships

All Campus

Bisk

Collegis Education

Elsmere Education

Emerge Education

Everspring

Global University Systems

Helix Education

HigherEducation.com

iDesign

iLaw

Keypath Education

Laureate

The Learning House

Meteor Learning

Noodle Partners

Orbis

Pearson

Synergis Education

Wiley

CASE STUDY:

A Well-Respected Nursing Program Goes National

Challenge: In 2010 Simmons College, a private, liberal arts and professional studies institution based in Boston, identified online expansion in graduate programs as a strategic opportunity. Following an unsuccessful attempt to launch its own online degree program in healthcare administration, Simmons determined that its own resources did not include the technology platform, marketing expertise, or capital needed to compete effectively in this new marketplace.

Solution: Simmons saw a partnership with 2U as an opportunity to deliver its already strong nursing program to a larger and more geographically distributed market, while simultaneously enhancing the college's reputation on a national scale. In addition to gaining access to a powerful and more advanced technology platform, Simmons would be able to tap into the significant marketing resources 2U could bring — allowing comarketing with other nursing programs that were already part of 2U's network.

In deciding whether to engage in a ten-year agreement with 2U, Simmons' president insisted on the full participation of the college's board of trustees. Because signing the contract with 2U would mean committing a large portion of the college's resources to the partnership, and because a decision to partner with a for-profit company could be viewed as controversial, the board was deeply engaged in discussions about the potential risks throughout the decision-making process.

With the help of 2U and the enthusiastic and constructive engagement of nursing faculty and administrators, Simmons developed and launched the program in seven months. Faculty saw the online platform as an opportunity to make a Simmons nursing degree accessible to students who might not otherwise have the opportunity to advance in their careers, especially nurses in rural or remote areas, nurses who aren't able to commute to classrooms, and military nurses who might be serving our country while on active duty abroad.

"We spent about 10 to 12 months trying to create a homegrown online effort using one of our programs. Ultimately, we couldn't develop the enrollment we needed to offset our investments. However, our failed attempt revealed some important realities. We had to face up to it—between the technology requirement and the marketing requirements, we couldn't do it on our own."

—Helen Drinan, President, Simmons College

Impact: The partnership proved a quick success—in the first year, the Simmons Family Nurse Practitioner program generated $5.4 million in new tuition revenue. It has since grown substantially, with total enrollment that now outnumbers that of Simmons' entire undergraduate program, and with students enrolled in almost every state. Encouraged by their success, Simmons and 2U have since developed 11 other programs including programs in social work, public health, and applied behavior analysis. In FY 2017, these programs generated more than $55 million in tuition revenue, surpassing for the first time the combined revenues of the college's 30 on-site graduate programs. With percentage growth for FY 2018 projected in the mid- to high-teens, revenue from online programs is expected to soon be on par with the revenue generated by the college's more than 50 undergraduate programs, this year budgeted at $64.2 million.

For Simmons College, developing online graduate programs revitalized the entire college, encouraging faster evolution across all programs, providing financial stability, and allowing the institution to achieve new national visibility.

Source: Adapted from a case study by Association of Governing Boards of Universities and Colleges.

CASE STUDY:

LEARNINGHOUSE | Concordia UNIVERSITY•SAINT PAUL

Small School, Big Impact

Challenge: Concordia University, St. Paul (CSP) found itself at a crossroads. Enrollments were not increasing significantly, the global economic downturn had shrunk endowments and made students more concerned about tuition costs, and CSP faced stiff competition from dozens of public, private, and for-profit institutions within 50 miles of its campus. Of particular concern was that the university's accomplished adult education program had stopped growing in the face of this intensified competition. Further, CSP's newly launched and promising graduate programs lacked the marketing resources needed to achieve their full potential. Concordia knew that it needed increased investment spending in order to jump-start growth, but it lacked the capital to invest aggressively.

Solution: In 2011, CSP partnered with online education services provider The Learning House (TLH) to expand its online program offerings and increase enrollments in online programs. To enable CSP to focus on its core mission, Learning House provides marketing services (including capital investment, strategic planning, and creative execution) and enrollment and retention support for all of CSP's online undergraduate and graduate programs (with the exception of education graduate programs).

One of CSP's first steps after partnering with TLH was to assess its online program mix, taking into consideration the regional landscape for higher education and trends in local student demand. Using market research data, CSP reworked old programs, launched new programs, and introduced online degree programs it had not previously offered, including an RN-to-BSN program and degrees in computer science. The school built programs from scratch, including finding faculty and writing course curriculum, because the data supported such degrees in their market. Based on research and analysis, CSP also scuttled some plans for new programs.

"If we can find trusted partners who have expertise in areas where we're not as strong, then we can spend our time teaching and not having to worry about the rest."

—Dr. Eric E. LaMott, Provost and Chief Operating Officer, Concordia University, St. Paul

The capital provided by Learning House increased the marketing budget by more than four times in the first year, enabling CSP to utilize media that previously had been out of reach, such as television ads, mobile advertising, online advertising, outdoor advertising, and a concerted public relations effort. Learning House provided expertise as well as capital. TLH helped CSP establish a significantly more sophisticated web presence. From May 2012 to May 2013, organic web traffic to the online campus increased 18-fold. Applications quadrupled, and lead volume for adult undergraduate and graduate programs doubled. Because Learning House is able to track metrics closely, CSP and Learning House can quickly adapt their marketing mix for the most efficient use of marketing dollars.

Learning House also brought a more robust enrollment management infrastructure, including contact agents, enrollment counselors, transcript collectors, and tuition planners—all crucial elements to scaling online enrollment operations. The online enrollment expertise of Learning House was leveraged to streamline CSP's enrollment process for online programs. To increase effectiveness, Learning House operates the CSP enrollment team, employing one enrollment counselor for every 75 active applicants on behalf of CSP. Learning House automated the application process, implemented transcript collection, and made the financial aid process more efficient with tuition planning, which begins once a student completes an application. These changes resulted in an enrollment process that is faster and easier for the prospective student. The average time from lead to start is less than 90 days.

Impact: Since partnering with Learning House, CSP's new student enrollment growth has continued to grow ahead of the market, rising over 34% between 2013 and 2017, while the students supported by TLH in that time frame has risen by 100% to 1,997. With TLH, CSP has launched bachelor's degrees in computer science, psychology, sport management, and nursing as well as master's degrees in exercise science and human services.

Source: Adapted from a case study provided by The Learning House.

Representative companies:

Bridge Education Group

Cambridge Education Group

EC Higher Education

EduCo International Group

EF Education

ELS

INTO University Partnerships

Kaplan International

Kings Education

Navitas

Shorelight Education

Study Group

EXPANDING REACH AND ACCESS

International Student Recruitment/Pathways Providers

A number of private companies, commonly referred to as international pathway program providers (or sometimes individual education program [IEP] providers), have approached the unique challenges of recruiting and retaining international students with a range of solutions. Partner-based pathway programs offer schools access to global networks of recruiters cultivated in some cases over decades. Programs typically combine credit-bearing first-year coursework with developmental English as a second language (ESL) coursework to prepare a student who is unable to meet the English proficiency requirements for standard admission. The programs are often offered directly on a university's campus, although they can be offered off-site, and typically include conditional admission to the partner university upon successful completion of the program.

In these partnerships, the private company invests resources in creating and staffing the program, in conjunction with the partner school, and typically shares student-paid program tuition revenues with the school. While the school may be granting the resulting credits at a discount, the expectation is that the program itself will attract more international students as well as help them to persist through a full program, and that so doing will more than offset any revenue share. Given often significant capital contributions by the private company, these contracts tend to be long-term, often up to 30 years in length, and have a range of business models, including revenue share, surplus share, and formal joint ventures.

CASE STUDY:

INTO | Oregon State University

Developing Pathways at Scale

Challenge: As a major land-, sea-, air- and space-grant institution, Oregon State University (OSU) established comprehensive internationalization as a key goal in its strategic plan, central to delivering on its public mission.

Solution: In 2008, OSU partnered with INTO University Partnerships to accelerate its performance through an innovative new model. Working with INTO, the university redesigned a range of undergraduate and graduate programs focused on promoting international student success. INTO also afforded OSU access to an international marketing and support network that enabled the university to reach, recruit, and retain students from more than 60 countries around the world. As part of this broader strategy, OSU then developed a $55 million International Living-Learning Center in the heart of the main campus to house the program and act as a focal point for international activities at the university. This model provided OSU with access to private sector investment and resources to build capacity and extend its global reach while retaining full control over all academic aspects of the program.

Impact: As a direct result of the partnership, Oregon State University is now one of the fastest-growing universities in the United States, with international student enrollment growth at nearly seven times the national average. Between 2009 and 2014, revenues from the pathways program grew more than 2,800% to more than $40 million, and revenues from international students at OSU overall have grown 583% to $125 million. Satisfaction among students in the program is extremely high. While students in the program typically start with a lower GPA than their peers, they usually grow their GPA at a level above that of their peers outside the program. The revenues from the partnership have been invested in enriching the educational experience for both domestic and international students, enabling the university to invest heavily in additional faculty to support further growth.

Source: Adapted from a case study provided by INTO University Partnerships.

CASE STUDY:

International Diversity Without Compromise

Challenge: In 2013 the University of Vermont (UVM) laid out an ambitious strategic action plan that included reconfirmation of UVM's commitment to global diversity by establishing a 5-year goal of raising international student enrollment from 1% to 5%-7%. In support of this goal and taking guidance from the feedback that had been gathered through campus engagement, UVM developed and launched its Global Gateway Program (GGP) in January 2014.

Solution: As a component of this process, the university evaluated options for expanding its global admissions reach for the successful recruitment of qualified international students, ultimately partnering with Study Group to enhance international marketing and recruitment efforts along with student support. UVM retains ownership of the GGP academic program itself, from course design and delivery to admissions and progression standards. Key factors in the university's decision to establish this partnership included Study Group's global reach and platform of top 200 globally ranked universities, together with a flexible partnership model that recognized UVM's academic priorities, allowing both institutions to build on their strengths.

Impact: This unique partnership soon spurred rapid growth in UVM's international student population, which now comprises 5%-6% of undergraduate enrollment. More important, the students who complete GGP successfully have proven their ability to succeed as UVM degree students, as demonstrated by the academic performance and retention rates posted by the cadre of nearly 400 UVM undergraduates who arrived at the university through GGP. Also important to the campus, students who arrived at UVM via GGP are now pursuing their degrees in more than half of UVM's 100+ undergraduate majors across all colleges and schools. The UVM and Study Group partnership offers an excellent example of leveraging the strengths of two organizations to successfully serve international students while improving the vibrancy of the campus community.

Source: Adapted from a case study provided by Study Group.

"The GGP helped me prepare to become a fully enrolled UVM student. While you are in the GGP you take regular UVM classes with native students, you have professors from prestigious backgrounds, you learn how to study like a college student and you also enhance your English skills while you are in the program."

—Jasper Wei (China), Class of 2017

Representative companies:

Coursera

Education To Go (ed2go)

EdX

Envision

Trilogy

YellowBrick

EXPANDING REACH AND ACCESS

Non-Credit Program Providers

Adult and continuing education is becoming a mission-critical community service in a knowledge-based economy as well as a growing source of institutional revenue. In addition, these programs have been an effective way for institutions to experiment with new modalities (MOOCs), new audiences (corporate education and working adults), and new career-oriented offerings (boot camps).

When done well, non-credit programs can be brand-enhancing and lucrative, leveraging institutional brand equity in relatively low-risk ways.

The private partners operating in this sphere are eclectic and range from traditional publishers to venture-backed start-ups. Some offerings are relatively simple, such as white label online courses offered through branded extension schools. Others, such as MOOCs, require investment from the university, with a back-end revenue share. Others, such as newer boot camp offerings, provide upfront capital to develop programs, with a long-term revenue share providing a return on investment to the private partner.

CASE STUDY:

Building New Recruitment Through Non-Credit Courses

Challenge: George Mason University (GMU) sought to better leverage significant physical and intellectual assets that were underutilized during select seasonal periods and to cultivate an early relationship with highly qualified prospective students earlier in their high school careers.

Solution: In 2009, GMU's Office of Undergraduate Admissions partnered with Envision, a provider of pre-college programming and services for post-secondary institutions, to design, develop, and deliver academic summer programs, both in the US and abroad, for outstanding high school students for college credit. The programs were jointly selected and designed to align both with market demand and George Mason's strategic priorities. Programs were offered in medicine, law, national security, business, and leadership. Envision provided services in the areas of admissions and enrollment, customer service, marketing, residential life, staffing, and training, as well as program design services to scale the project. The partners share in the revenues from the program.

Impact: GMU's Pre-College Program Management Project has effectively and quickly scaled the university's ability to stand up pre-college programs that have positively impacted students and strategic priorities at the university, including revenue, brand expansion, and GMU's recruiting pipeline. Today the Pre-College Program serves 12,000 students annually and provides strategic exposure to approximately one million prospective students globally. Since the partnership began in the fall of 2009, GMU has generated approximately $10 million in incremental revenue, while gaining exposure to roughly eight million additional high-achieving high school students. Over 250 undergraduate students are currently enrolled in the 2017-2018 school year as a direct result of the partnership.

Source: Adapted from a case study provided by Envision.

EXPANDING REACH AND ACCESS

Recruitment and Enrollment Services

Shifting demographics that have changed the composition of college enrollment, combined with the rise of web-based and social media, have created an enrollment marketing environment that has become much more complex over the past 10 years. Mailing brochures and visiting high schools or targeting students based on their age and SAT scores are no longer sufficient strategies for reaching potential students.

Increased competition for students and the need to spend recruitment dollars as efficiently as possible have given rise to a host of firms that specialize in helping schools identify their target markets and reach those students effectively.

Representative companies:

- Capture Higher Education
- Council for Adult and Experiential Learning (CAEL)
- EAB
- Encoura
- Full Measure Education
- GradLeaders
- MindMax
- Ruffalo Noel Levitz

CASE STUDY:

encoura | MARIST COLLEGE

Leveraging Data Science to Make Recruiting Decisions

Challenge: Marist College, situated 70 miles north of New York City, is considered one of the leading colleges of arts and sciences in the nation. It boasts an impressive technology infrastructure, a top-ten study abroad program, an impressive internship program in Manhattan, and a bucolic campus on the Hudson River. Nevertheless, in an increasingly competitive market Marist recognized a need to streamline its process of evaluating program offerings. It also wanted to leverage more and better data throughout its enrollment funnel process in order to both be more efficient and make better choices in attracting and converting the best applicants for the college.

Solution: Marist already employed predictive analytics to rank inquiries in order to determine what leads to pursue and to determine which lists of prospective students to use. But in 2017 Marist engaged Encoura and its Data Lab product to go further in predicting which students would actually follow through and enroll and to help ensure that the students Marist admits are those who will thrive and graduate from the institution. Data Lab's funnel visualization, advanced analytics, and actionable insights allow Marist to be more strategic throughout its entire recruitment process. It has helped inform Marist's decisions about which high schools to visit and which new geographies to target, and has even aided the college with its admissions processes. Because predicting the supply and demand for a program area is a complex endeavor, there is always risk in program development. One way to mitigate risk is through a strong market assessment that takes multiple factors into account. To help address those challenges, Marist has further relied on Encoura's Eduventures Research to assist its program development team with new program identification and vetting, as well as determining which programs to sunset.

Impact: Marist has reorganized its recruiting functions as a result of Encoura's input. In addition, Encoura's Eduventures analysis has helped to define a number of new programs to launch as well as several to sunset.

Source: Adapted from a case study published by Encoura.

"What Encoura is doing now... can help schools use data through the recruitment and enrollment funnel so we can make better decisions along the entire path."

—Sean Kaylor, VP for Enrollment Management, Marketing and Communication, Marist College

Improving Student Success

Shifts in digital communication habits, advances in mobile technology, and breakthroughs in data science over the past 10 years have converged to create advances in the ways in which institutions can identify and address the challenges that students face in successfully completing their academic programs. A burgeoning ecosystem of companies has emerged in this environment to bring scale, expertise, and capital to bear on this central challenge. The business models tend to be primarily fee-for-service. Because the nature of the work is among the most sensitive performed by any private companies inside universities, the working relationships in these partnerships tend to be particularly close.

Representative companies:

Aviso Retention
Blackboard
Burning Glass Technologies
CampusLabs
Civitas Learning
HelioCampus
Hobsons
Nuro Retention
Watermark

IMPROVING STUDENT SUCCESS

Data Analytics

Data science offers a range of innovations to university leaders. Inside the classroom, data science can provide instructors with a real-time understanding of students' specific challenges around comprehending material. Outside the classroom, data science can be applied to help track grades, attendance, scheduling, and a host of other indicators to design appropriate student interventions, re-design support approaches, and make other changes that can improve the likelihood of student persistence and completion. Despite the common reliance on data, the approaches taken by companies in this space can vary considerably and often involve the challenging work of extracting the right data from various incumbent systems on which universities already rely.

CASE STUDY:

CIVITAS LEARNING | USF UNIVERSITY OF SOUTH FLORIDA

Leveraging Data to Break Through a Persistence Plateau

Challenge: The University of South Florida (USF) is a high-impact, global research university dedicated to student success. With nearly 50,000 students, USF serves a high percentage of under-represented minorities, students with limited income, and first-generation students. More than 40% of USF's first-time in college (FTIC) students are Pell recipients. These low-income students are graduating at rates equal to and sometimes higher than non-Pell recipients. These achievements are the result of 15+ years of focused, strategic planning in the university's student success initiatives and a deep commitment to using data to help all students succeed. In 2012, however, after several years of dramatic gains, USF hit a plateau in its rate of improvement. It recognized that to get from good to great in student retention, it was going to have to deepen its approach. With a Planning, Performance and Accountability (PPA) matrix that included more than 100 metrics tied to key strategic

"Our goal is to help our colleagues across the institution do their jobs so they can focus on elevating students."

—Valeria Garcia, Associate Vice President of the Office of Decision Support, University of South Florida

(and now performance-based funding) goals. USF was accustomed to using data to improve its performance. But as data-savvy as it was, the university recognized that it needed to do more to get real-time, actionable data to counselors and teachers in direct contact with at-risk students.

Solution: USF selected Civitas Learning to implement the Civitas Student Success Platform to empower policy makers, administrators, advisors, and faculty with more current and precise information enabling more specific interventions on students' behalf. With the Civitas dashboards, key data are made accessible to those with direct student contact, including staff from financial aid, career services, the counseling center, and academic advocacy. As a result of the platform, USF is able to provide more focused support to students who need it most, exactly when they need it.

Impact: Civitas Learning's Student Success Platform has had a significant impact on speed-to-value for USF's Office of Decision Support. Requests for data, such as the persistence probability for any given segment of the student population, takes minutes to fulfill, versus the days or weeks it would have taken before Civitas. Using Civitas Learning's signature app Illume®, with integrated data from its Banner student information system (SIS) and Canvas learning management system (LMS), USF gained a new level of insight into the full student journey. With inputs from student interactions with the university's LMS, Illume was able to base predictions on real-time behavior to allow for earlier student interventions that otherwise would have had to wait until after midterm exams.

Data recently submitted for approval by USG's Board of Governors show USF hit its 90% first-year retention target. Now the university is on track to also surpass the 70% six-year graduation rate. As a university with "emerging preeminent" status in a performance-funded state, the combination of reaching three metrics — research, retention and graduation — would catapult USF from "emerging preeminent" to "preeminent" status. This achievement is expected to result in additional state funding up to $15 million.

Source: Adapted from a case study published by Civitas.

IMPROVING STUDENT SUCCESS

Coaching/Mentoring

Companies in this category supplement the student support offerings of universities either by interacting with students directly or by providing support mechanisms to student counselors in order to make them more efficient and effective in managing their student caseloads. The category is varied but typically brings scale, expertise, and in some cases technology-based tools that exceed what most schools are able to develop on their own.

Representative companies:

Beyond12
InsideTrack
Motimatic
ReUp

CASE STUDY:

insidetrack®

PennState World Campus

Scaling Online with Coaching

Challenge: In 2010 Penn State University World Campus, the online campus of Penn State University, was experiencing rapid growth and needed help to ensure that prospective students were receiving an appropriate level of support to successfully onboard and persist in the online program. In addition, Penn State needed consulting to help train its internal staff to

(Continued on page 20)

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be able to handle this new pace of expansion and new type of student.

Solution: InsideTrack implemented a coaching program for inquiry conversion and strong starts. Through coaching prospective students, InsideTrack was able to ensure that learners would hit the ground running by clarifying their educational objectives, selecting the best-fit program, connecting to campus resources, and developing a concrete plan for completing their studies. InsideTrack works with admitted students through the beginning stages of their college career to develop the time management, self-advocacy, and other skills required for long-term success. The coaching also allowed InsideTrack to gain insights into ways to improve World Campus' overall enrollment process.

Impact: The result was increased enrollment and better-prepared students, with a strong commitment to completion and to the World Campus program. Insights gained from operational analysis and coaching sessions with prospective students were used to streamline the enrollment process, which cut application processing time by 50%; improved student-facing communications, which enhanced students' understanding of the enrollment process; and reduced melt (attrition between enrollment and class starts). Moreover, engagement in the partnership enabled better coordination of advising, financial aid, registration, and other key functions, which elevated the overall quality of the prospective student experience.

In addition, InsideTrack's partnership with Penn State has allowed for continuous improvement of the student experience and operations, including deeper understanding of student attitudes, behaviors, and needs; more tailored support for key student populations; and richer intelligence about the competitive landscape and student decision-making behavior.

Penn State's investment in InsideTrack's coaching services yielded a 2.7x payback in the first two years, with a corresponding 46% improvement in enrollment conversion and a 9.75% reduction in melt.

In 2015 Penn State renewed and expanded its partnership with InsideTrack. The new agreement allowed institutional leaders to choose from a variety of coaching options for prospective and enrolled students as well as specialized services geared toward specific student populations and consulting services that will equip World Campus with insights and analytics to help improve retention, completion, and career success. As part of the ongoing engagement, InsideTrack co-locates six full-time employees and four interns on the Penn State University Park campus.

In 2017, the Association for Professional, Continuing, & Online Education (UPCEA) recognized Penn State World Campus and InsideTrack with the Mid-Atlantic Region Partnership Award, which honors outstanding collaborations to improve outcomes for students and other higher education stakeholders.

Source: Adapted from a case study published by InsideTrack.

"We've enjoyed a long-standing partnership with InsideTrack centered on student success and the latest innovations in support. Our expanded relationship provides us the flexibility to innovate further and address our changing needs, ensuring that World Campus students have the best, most successful experience possible."

—Craig Weidemann, Vice President for Outreach and Vice Provost, Online Education, Penn State University

IMPROVING STUDENT SUCCESS

Career Services

Career-service offerings vary significantly, and can include student-facing tools, augmented resources, and actual bridges to internships and employers. Vendors in this space provide a combination of scale, which may be elusive for many small and medium-sized universities, as well as technology expertise that can allow universities to dramatically expand their reach and effect in helping their students find gainful employment — sometimes during, but more pointedly after, leaving school.

Representative companies:

12Twenty
CampusTap
Revature
Symplicity

CASE STUDY:

REVATURE | CUNY The City University of New York

Fulfilling a Promise

Challenge: As the largest urban university system in the country, with a diverse enrollment of 270,000 degree-credit students and a mission that speaks to "opportunity for all," the City University of New York (CUNY) had a need to better respond to the employment opportunities for its graduates inherent in the shortage of IT talent in New York City. Finding a cost-effective bridge to this burgeoning area of employment would represent a further fulfillment of the promise made to its students. But CUNY needed to do this in a way that would not add significant new costs for the university or undermine its degree programs.

Solution: CUNY partnered with Revature, a leading technology talent development company, to create "Revature at CUNY," which provides free industry-aligned coding boot camps for CUNY graduates. The first 12-week program, exclusively for CUNY graduates, started in November 2016. It focused on enterprise-level, contemporary technology skills. The courses are designed for both non-technical and advanced students to learn enterprise-level programming skills at their own pace and receive dedicated support from Revature's industry mentors. The coursework covers Java, Microsoft.NET, and other front-end development languages. Students who complete the training are employed by Revature and will receive industry certification and continuing education.

Impact: Since the launch of the partnership in 2017, over 2,000 CUNY students and graduates have enrolled for free in Revature's custom online course training. Graduates have been hired and deployed at a range of companies. In 2017 Revature recruited, trained, and hired over 120 CUNY graduates and expects to hire another 150 in 2018. The partnership has continued to evolve. Since the launch, Revature has extended its program by working with Women in Technology New York (WITNY) and is making a concerted and comprehensive effort to provide pathways exclusively for women into the program to help close the gender gap in the tech sector.

Source: Adapted from a case study provided by Revature.

Increasing Physical Capacity

Shared-risk partnerships between universities and private companies are most evolved in the category of campus real estate development where, according to consultants Brailsford and Dunlavey, as of 2014 shared-risk partnerships between universities and private developers had been executed in more than 35 states with approximately $13 billion worth of supporting bond issuances.

Though the financial arrangements can vary, in essence the deals involve a sharing of capital costs around development and a sharing of receipts (and risk) emanating from the project. The private partner supplies capital and expertise, while the university supplies a stable and predictable revenue stream over an extended period of time.

Student housing is the most common type of development partnership, but recent deals have brokered a broad range of construction including retail, dining, hotels, office, workforce housing, student unions, campus edge projects, health and wellness facilities, sports facilities, and nonstudent, multifamily housing projects.

The arrangements are popular for a number of reasons, but well-aligned interests mean the projects are completed rapidly and with lower project risk to the institution. By essentially providing off-balance-sheet or "off-credit" financing, P3s offer schools a way to satisfy infrastructure demands and replace aging facilities without negatively impacting their credit rating or access to capital.

Student housing development

Representative companies:

American Campus Communities
Asset Campus Housing
CA Ventures
Campus Apartments
Campus Living Villages
Capstone Management Partners
Collier Companies
Corvias Group
Edgemoor
EdR
Hanover Pacific
Harrison Street
Landmark Properties
RISE
The Scion Group
Servitas
University Student Living

Other university real estate development

Representative companies:

Balfour Beatty
Plenary
Public Facilities Group
Skanska
Star America Infrastructure Partners
Trinitas

CASE STUDY:

AMERICAN CAMPUS COMMUNITIES

Drexel UNIVERSITY

Preserving Capital for Core Academic Projects

Challenge: Drexel University, based in Philadelphia, is one of the 15 largest private universities in the US. As a distinctly urban institution, Drexel has a physical campus that serves a central role in fulfilling the university's mission. Several years ago, the institution faced a shortage of on-campus student housing options, had no affordable daycare options near campus, and had no reasonably-priced hotel option for university guests. Simultaneously, Drexel was eager to launch development projects related to its academic facilities in order to advance its teaching and research capabilities. Facing these competing needs, Drexel decided to focus its institution's resources, both staff expertise and financial capital, on projects it saw as linked to its core mission—academic development—and to work with external partners to construct and operate non-academic facilities.

Solution: In 2010, Drexel launched a competitive bidding process to develop a small parcel of land on its campus into student residences. American Campus Communities (ACC) won the bid and constructed what is now Chestnut Square—a 19-story high-rise with 861 beds—around the existing buildings already in the space. ACC owns and operates Chestnut Square, paying annual ground rent to Drexel. The building is considered university-affiliated housing and is integrated with all student life policies. However, students sign leases directly with ACC.

Drexel continued to launch additional projects in the market, including two mixed-use commercial and student residences with over 2,300 additional beds; a complex of market-rate apartments with childcare and preschool facilities; and a 212-room boutique hotel with conference facilities.

For some groups on campus, particularly faculty and staff, this approach was unusual because they just hadn't seen it before. However, through the university's clear communication about the philosophy behind these partnerships, stakeholders came to understand and embrace the overall strategy. Drexel's message about these projects was that the university wanted to devote its own limited capital toward academic projects central to its mission and opted to outsource non-academic projects.

Impact: These facilities represent over $400 million in capital contributed by external partners to develop Drexel's campus. The institution has added capacity to house 3,000 students on campus, and now has both a daycare facility and a hotel for visitors to the community. Simultaneously, Drexel directed its own expertise and capital—close to $300 million—into major academic development, constructing new facilities and renovating buildings to reflect new advancements.

Drexel's latest development initiative is its largest to date. Called Schuylkill Yards, it comprises 14 acres and approximately 8 million square feet of development at the gateway to Drexel's campus. Over the next 20 years, this space will become a mixed-use academic, commercial, residential, retail, and public realm project.

Source: Adapted from a case study by the Association of Governing Boards of Universities and Colleges.

"In developing public-private partnerships, it's a question of core competencies. As we approached each of these projects, we had to ask ourselves whether we were the appropriate party to be carrying them out or whether we would be better served by having partners help us. When it comes to thinking about the construction of certain facilities that are not core mission—though still important to the institution—there is a lot of capacity and expertise in the market available to help us do that work."

— John Fry, President, Drexel University

CASE STUDY:

Plenary Group | University of California UCMERCED

The Doubling of a University

Challenge: In 2012 the University of California, Merced realized it had to create 1.2 million additional square feet of facilities for teaching, research, housing, and student life to satisfy rapidly growing demand. Essentially, the university had to double its capacity in order to accommodate an expected enrollment of 10,000 students by 2020. Further, it needed to accomplish this in the most efficient, economical, and environmentally responsible way possible, on an expedited timetable, with minimal upfront UC investment.

Solution: Following an elaborate process of receiving input from stakeholders and multiple rounds of information requests with private developers, the university chose to partner with developer Plenary Properties to undertake a massive development project known as the Merced 2020 Project. Structured as an ''availability-payment concession,'' the partnership provides for Plenary's team to design, build, operate, and maintain major building systems and partially finance the entire project under a single contract. Financing for the project includes a combination of $600 million of UC Board of Regents-issued revenue bonds, $590.35 million of developer funds, and $148.13 million of UC Merced's own funds.

This approach captures the time and cost advantages of the ''design-build'' development method and effectively adds a preventative capital-maintenance program and capital-renewal program. It does not transfer the university's property rights, does not assign revenue streams, and is not a lease. It provides budgetary certainty over multiple decades and minimizes the financial burden typically created by deferred maintenance.

During construction, the university makes predetermined progress payments to the developer. Once the buildings come online, UCM makes performance-based ''availability payments'' that cover remaining capital costs as well as the operations and maintenance.

Impact: UC Merced was able to nearly double the size of its capital raise without any resulting effect on its bond rating, while at the same time establishing a long-term partner whose financial incentives are aligned with its own, as Plenary will be responsible for maintaining what it builds over an extended period of time at a predetermined cost.

Third-party analysis suggests the Merced 2020 Project will have a total one-time effect related to its design and construction, including direct and ripple effects, estimated at approximately $1.5 billion in Merced County and $2.4 billion statewide. By 2022, the ongoing operations of the project are expected to boost spending by more than $200 million per year in the state.

Source: Adapted from material published by the University of California Merced.

"Plenary... has produced a compact, environmentally sensitive design that blends beautifully with our existing campus, facilitates our multi-disciplinary teaching and research methods, and provides flexibility for future changes in building usage. Most important, it's a cost-effective way of building out our campus."

— Dorothy Leland, Chancellor, University of California, Merced

Leveraging Current Assets

Colleges and universities, whether globally recognized or more local in their scope, represent a collection of often underutilized assets that have the ability to be monetized well beyond their role as institutions of higher learning. In an era when Moody's Investors Service expects college operating costs to rise at a faster rate than tuition revenue, the ability to leverage these underutilized assets can make an enormous difference in affordability for students and even viability for the institution itself.

Representative companies:

Ameresco

Corix

ENGIE

Signet Real Estate Group

Veolia

LEVERAGING CURRENT ASSETS

Campus Infrastructure Services

College and universities are conduits for numerous revenue streams. Like a municipality, institutions of higher education support populations with a variety of utilities and services, including water, energy, parking, and others. Private concessionaires are willing to pre-pay for the right to provide these services over a long contract term.

In these arrangements, universities benefit from off-balance sheet financing and professional services, while vendors and their financial partners benefit from long-term annuities.

CASE STUDY:

ENGIE

THE OHIO STATE UNIVERSITY

Better Management of Ohio State's Energy Consumption

Challenge: Ohio State University (OSU) had a need to monetize its utilities in support of a broad goal of identifying $2 billion in additional resources needed to support the university's mission for the next 10 years. It also sought to improve its energy efficiency by 25% over 10 years.

Solution: OSU's Comprehensive Energy Management Project is a billion-dollar public-private partnership with French energy company ENGIE Services and financed by investment firm Axium Infrastructure to manage the university's power facilities. Under the terms of the deal, the private partners provide Ohio State with $1.165 billion in up-front cash to be used for various operating expenses, including financial aid, and for special academic programs related to themes of environmental sustainability. The private partners in turn receive a 50-year management contract that includes payments for services and investments.

Impact: Together with the direct cost of power, which the university will continue to purchase directly, OSU expects to spend $115 million annually, or the rough equivalent of its pre-deal energy-related expenses. In addition to the cash bolstering the university's

(Continued on page 26)

"This innovative public-private partnership will help us reach our long-term sustainability goals for energy and represents the largest single investment in Ohio State's academic mission in our history."

— Michael V. Drake, President, The Ohio State University

(Continued from page 25)

endowment, the deal funds academic programs in sustainability and brings with it best practices around energy procurement, capital improvement, and energy efficiency. The university accomplishes this without relinquishing its right to approve all capital investments and to determine which types of power to purchase.

Though certainly its largest partnership, the energy deal is not the only innovative arrangement that Ohio State has struck with private partners in order to meet its $2 billion goal. In 2012 the university agreed to a 50-year, $483 million deal to lease its parking operations in a manner somewhat less complex but similar in format to the energy deal. The moves have not been lost on the critical bond ratings agencies. Per Moody's: "By building its cash and investments, the university improves its competitive position in the higher education, healthcare, and research sectors. The upfront payment from the concession and lease agreements with private corporations and from the land sales, as well as investment earnings from the increased endowment, will fund core operations as well as strategic initiatives."

Source: Adapted from material published by the Ohio State University.

LEVERAGING CURRENT ASSETS

Brand Licensing (Including Athletics)

No discussion of the leveraging of university brands would be complete without a discussion of athletics. In the 2016 fiscal year, the NCAA made $788 million in cash payments to colleges and their associated athletic conferences based largely on income from television rights. In 2014, colleges and universities earned $209 million from brand licensing on retail sales of $3.88 billion. In 2016, the top 23 highest grossing university licensing deals generated nearly $1 billion in consumer revenue. Apparel is still the largest licensed product category by a wide margin. However, in recent years there has been a growth in collegiate trademarks used as a part of office products, travel bags, automotive products, and even fitness equipment.

Representative companies:

Fermata Partners
IMG College
JMI Sports
Learfield Licensing

CASE STUDY:

Maximizing Value for Both Parties

Challenge: As UCLA's licensing deal with Adidas was expiring in 2016, its athletic program, one of a handful of large Division I programs on the West Coast, sought to maximize a return for the school, its athletic programs, and facilities.

Solution: UCLA signed a 15-year deal with upstart athletic apparel marketer Under Armour. Valued at $280 million, the deal was the largest licensing deal of its kind to date. Under the agreement, the apparel company paid UCLA $15 million in cash up front, with subsequent annual payments of approximately $11 million in rights and marketing fees. Under Armour also committed to supply an average of $7.4 million in clothing, shoes, and equipment each school year and will contribute an additional $2 million over eight years for upgrades at various UCLA athletic facilities.

Impact: The deal provided Under Armour with a highly desirable presence in West Coast collegiate sports and secured a lucrative contract for the university through a highly competitive process.

Source: Adapted from press reports.

LEVERAGING CURRENT ASSETS

Intellectual Property Acquisition/Licensing

A 2013 survey by the Association of University Technology Managers reported that universities make more than 4,000 patent licensing agreements annually and collect about $2 billion a year in licensing revenue, thanks in part to a 1980 law that grants them the rights to intellectual property discovered as a result of federally funded research. But just like the venture capital industry, these figures mask a bifurcated market with a small number of big winners. While big wins can generate big gains (the patents on inserting foreign DNA into cells brought $790 million to Columbia University, and the patents leading to the development of Remicade, which is used to treat autoimmune diseases, brought New York University more than $1 billion), the vast majority of patents never generate meaningful revenue. According to a 2007 Harvard Business Review article, many university technology transfer offices fail to cover their costs with licensing revenues. Among factors that may limit the success of technology transfer efforts, the paper cited the strength and quality of their relationships with industry and the gap between the research and the ultimate commercial application of the work. It is in this area where private partners, many of whom invest their own capital, can play a critical role in bridging the gap between research patents and successful license revenue streams.

Representative companies:

Allied Minds

Foresight Science & Technology

Intellectual Ventures

CASE STUDY:

GILEAD | ROYALTY PHARMA | EMORY UNIVERSITY

Unlocking Capital for Academic Pursuits

Challenge: Known for its demanding academics, outstanding undergraduate college of arts and sciences, highly ranked professional schools, and state-of-the-art research facilities, Atlanta-based Emory University is consistently ranked among the country's top 20 national universities by *U.S. News & World Report.* In addition, Emory is recognized internationally as a leader in AIDS research, with a National Institutes of Health-funded Center for AIDS research that includes more than 120 faculty members within Emory's School of Medicine, Rollins School of Public Health, Nell Hodgson Woodruff School of Nursing, the Yerkes National Primate Research Center, as well as Emory College and its Graduate School of Arts and Sciences.

In the early 1990s Emory researchers discovered Emtricitabine, found to be effective in the treatment of HIV infection. The drug was licensed to Triangle Pharmaceuticals by Emory University in 1996. Triangle was acquired by Gilead in 2003. Emtricitabine, marketed by Gilead as Emtriva, was first approved by the US Food and Drug Administration in July 2003. It is a component of Truvada® (emtricitabine and tenofovir disoproxil fumarate), approved by the US Food and Drug Administration in August 2004 for the treatment of HIV infection in combination with other antiretroviral agents. Emtricitabine is also a component of a second

(Continued on page 28)

"We feel privileged and humbled to receive such extraordinary recognition for the value of our intellectual property. These dividends will be plowed back into our mission of research and discovery for the benefit of our state, our nation, and the world, in accordance with the priorities we have identified in our university-wide strategic plan."

— Dr. James Wagner, President, Emory University

(Continued from page 27)

combination product marketed by a Bristol-Myers Squibb and Gilead joint venture.

Though benefiting from a stream of royalty payments resulting from the license, the university sought to convert those payments into a lump sum for more effective reinvestment into its ongoing medical research activities. For their part, the licensees sought control over the use of Emtricitabine, an increasingly important component of their drug development efforts.

Solution: In 2005 Gilead Sciences, Inc. (Nasdaq: GILD) and Royalty Pharma entered into an agreement with Emory University to purchase the royalty interest owed to Emory for Emtricitabine. Under the terms of the agreement, Gilead and Royalty Pharma made a one-time cash payment of $525 million to Emory in exchange for elimination of the Emtricitabine royalties due to Emory on worldwide net sales of the product. Lazard acted as financial advisor to Gilead and Citigroup acted as financial advisor to Emory and the inventors.

Impact: The university's share of the transaction was reinvested in Emory's research mission following the terms of the Bayh-Dole Act passed by Congress in 1980 to encourage commercialization of research by universities. Various proportions went to the central administration and schools, academic departments, and laboratories of the faculty inventors, who were based in the School of Medicine's Department of Pediatrics and in Emory College's Department of Chemistry. A minority share of the proceeds went to the investors employed by Emory at the time of the discovery.

Source: Adapted from press reports.

P3•EDU 100 Directory

12Twenty
2U
Academic Partnerships
All Campus
Allied Minds
Ameresco
American Campus Communities
Asset Campus Housing
Aviso Retention
Balfour Beatty
Beyond12
Bisk
Blackboard
Bridge Education Group
Burning Glass Technologies
CA Ventures
Cambridge Education Group
Campus Apartments
Campus Labs
Campus Living Villages
CampusTap
Capstone Management Partners
Capture Higher Education
Civitas Learning
Collegis Education
Collier Companies
Corix
Corvias Group
Council for Adult and Experiential Learning (CAEL)
Coursera
EAB
EC Higher Education
Education To Go (ed2go)
Edgemoor
EdR
EduCo International Group
EdX
EF Education
ELS
Elsmere Education
Emerge Education
Encoura
ENGIE
Envision
Everspring
Fermata Partners
Foresight Science & Technology
Full Measure Education
Global University Systems
GradLeaders
Hanover Pacific
Harrison Street
HelioCampus
Helix Education
HigherEducation.com
Hobsons
iDesign
iLaw
IMG College
InsideTrack
Intellectual Ventures
INTO University Partnerships
JMI Sports
Kaplan International
Keypath Education
Kings Education
Landmark Properties
Laureate
Learfield Licensing
The Learning House
Meteor Learning
MindMax
Motimatic
Navitas
Noodle Partners
Nuro Retention
Orbis
Pearson
Plenary
Public Facilities Group
ReUp
Revature
RISE
Ruffalo Noel Levitz
The Scion Group
Servitas
Shorelight Education
Signet Real Estate Group
Skanska
Star America Infrastructure Partners
Study Group
Symplicity
Synergis Education
Trilogy
Trinitas
University Student Living
Veolia
Watermark
Wiley
YellowBrick

12Twenty

HQ Santa Monica, CA

URL www.12twenty.com

Telephone 888-281-3251

Year Founded 2008

Private

Chief Executive Kenny Berlin, CEO

Lead University Contact Scott Tretsky, VP, Enterprise Sales

Email scott.tretsky@12twenty.com

Services Career services

Description 12Twenty is a data-driven software helping career centers increase department efficiencies, student engagement, employer relations, and ultimately alumni success.

Business Model Fee for service

Total University Partners 250

Representative University Partners Harvard Business School, Carnegie Mellon University, University of California - Los Angeles Anderson School of Management, Tuck School of Business at Dartmouth University, Boston College Law, University of Oregon, London Business School, University of Oxford - Said Business School, Notre Dame - Mendoza School of Business

Source: Company

2U

HQ Landover, MD

URL www.2u.com

Telephone 301-892-4350

Year Founded 2008

Public TWOU

Chief Executive Chip Paucek, CEO

Lead University Contact Andrew Hermalyn, EVP University Partnerships and Programs

Email AHermalyn@2u.com

Services Online program management

Description 2U partners with great colleges and universities to build the world's best digital education. Our platform provides a comprehensive fusion of technology, services, and data architecture to transform our clients into digital versions of themselves.

Business Model Revenue share/risk share; fee for service

Total University Partners 21

Representative University Partners Georgetown University, Harvard University (HarvardX), Northwestern University, Simmons College, Syracuse University, El Tecnológico de Monterrey, UC Berkeley, University of North Carolina Chapel Hill, University of Southern California, Yale University

Source: P3•EDU

Academic Partnerships

HQ Dallas, TX

URL www.academicpartnerships.com

Telephone 214-210-7300

Year Founded 2007

Private Insight Venture Partners

Chief Executive Randy Best, Founder and Chairman

Lead University Contact David Daniels, President, University Partnerships

Email david.daniels@academicpartnerships.com

Services Online program management

Description Academic Partnerships delivers sustainable growth for universities and facilitates student success through upfront capital investment, expertise in scalable online program design, omni-channel marketing, and student enrollment and retention services.

Business Model Revenue share/risk share; fee for service

Total University Partners 15

Representative University Partners Arkansas State University, Eastern Michigan University, Lamar University, University of Texas of the Permian Basin, University of Texas Arlington, University of Cincinnati, LSU Shreveport, Purdue University Calumet, UT El Paso, University of Tennessee Chattanooga

Source: P3•EDU

All Campus

HQ Chicago, IL

URL www.allcampus.com

Telephone 312-525-3100

Year Founded 2012

Private

Chief Executive Joe Diamond, CEO

Lead University Contact Kyle Shea, EVP, Revenue

Email kshea@allcampus.com

Services Online program management

Description All Campus partners with leading traditional colleges and universities to grow online enrollment and maximize market share — providing the initial marketing investment, strategy, and experts to connect each institution with qualified students.

Business Model Revenue share/risk share; fee for service

Total University Partners 20

Representative University Partners University of Southern California, The George Washington University, University of Florida, Purdue University, University of Arizona, Boston University, University of Delaware, Pace University, Lynn University, University of Wisconsin-Platteville

Source: Company

Allied Minds plc

HQ Boston, MA

URL www.alliedminds.com

Telephone 617-419-1800

Year Founded 2004

Public LSE: ALM

Chief Executive Jill Smith, President and CEO

Lead University Contact Neil Pizey, Head of Corporate Development

Email neil@alliedminds.com

Services Intellectual property acquisition/licensing

Description Allied Minds is an IP commercialization company focused on technology and life sciences. They form, fund, manage, and build start-up companies based on early-stage technology.

Business Model Revenue share/risk share

Total University Partners 130

Representative University Partners Harvard University, New York University

Source: P3•EDU

Ameresco, Inc.

HQ Framingham, MA

URL www.ameresco.com

Telephone 508-661-2200

Year Founded: 2000

Public NYSE: AMRC

Chief Executive George P. Sakellaris, Founder, Chairman, President and CEO

Lead University Contact David J. Anderson, EVP

Email danderson@ameresco.com

Services Campus infrastructure services (parking, energy, etc.)

Description Ameresco, a leading energy efficiency and renewable energy solutions provider, serves North America and UK. Our energy experts deliver long-term customer value, environmental stewardship, supply management, and innovative facility renewal solutions.

Business Model Revenue share/risk share; fee for service

Total University Partners 15

Representative University Partners Arizona State University, Roxbury Community College, Medical University of SC, Washington and Lee, Community College of Rhode Island, New Mexico State University

Source: Company

American Campus Communities

HQ Austin, TX

URL www.americancampus.com

Telephone 310-905-8300

Year Founded 1993

Public NYSE: ACC

Chief Executive Bill Bayless, CEO

Lead University Contact Noel Brinkman, SVP Public-Private Partnerships

Email nbrinkman@americancampus.com

Services Student housing development

Description American Campus Communities (ACC) is the nation's largest developer, owner, and manager of high-quality student housing communities.

Business Model Fee for service

Total University Partners 24

Representative University Partners Arizona State University, Butler University, Cleveland State University, Drexel University, Portland State University, Prairie View A&M University, University of California Irvine, University of Michigan, University of Minnesota, University of New Hampshire

Source: P3•EDU

Asset Campus Housing

HQ Houston, TX

URL www.assetcampushousing.com

Telephone 713-782-5800

Year Founded 1998

Private

Chief Executive Michael McGrath, CEO

Lead University Contact Stephen Mitchell, EVP Acquisitions and Business Development

Email smitchell@assetpluscorp.com

Services Student housing development

Description Asset Campus Housing is the largest third-party student housing property management company in the nation, managing over 210 properties consisting of 118,500 beds.

Business Model Fee for service

Total University Partners N/A

Representative University Partners The University of the Bahamas, University of Central Florida

Source: P3•EDU

Aviso Retention

HQ Columbus, OH

URL www.avisoretention.com

Telephone 888-247-8407

Year Founded 2012

Private

Chief Executive Alexander Leader, CEO

Lead University Contact MarKel Snyder, VP, Strategic Partnerships

Email markel.snyder@avisoretention.com

Services Recruitment & enrollment services; Data analytics; Coaching/mentoring

Description Aviso Retention is a technology suite comprised of Aviso Connect, Aviso Predict, and Aviso Engage. Our technologies help colleges and universities reduce tuition erosion by predicting the likelihood that students will persist through to graduation.

Business Model Fee for service

Total University Partners 50

Representative University Partners Concordia University Wisconsin, Central Carolina Community College, Indiana Wesleyan University

Source: Company

Balfour Beatty Campus Solutions

HQ Malvern, PA

URL www.bbcampussolutions.com

Telephone 610-355-8220

Year Founded N/A

Private

Chief Executive Rick Taylor, CEO

Lead University Contact Bob Shepko, President

Email rshepko@bbcgrp.com

Services Other university real estate development; Campus infrastructure services (parking, energy, etc.)

Description Balfour Beatty Campus Solutions is a leading developer, investor, and manager of campus infrastructure. We provide development, asset/property management, and other real estate services to colleges, universities, and their affiliated entities.

Business Model Fee for service

Total University Partners N/A

Representative University Partners University of Manchester, Purdue University, University of Warwick, University of Iowa, University of North Carolina at Charlotte

Source: P3•EDU

Beyond12

HQ Oakland, CA

URL www.beyond12.org

Telephone 866-699-7070

Year Founded 2009

Private

Chief Executive Alexandra Bernadotte, Founder and CEO

Lead University Contact Alexandra Bernadotte

Email info@beyond12.org

Services Data analytics; Coaching/mentoring

Description Beyond 12's mission is to dramatically increase the number of first-generation, low-income, and underrepresented students who graduate from college. Our high-tech, high-touch model increases persistence and helps colleges scale existing supports.

Business Model Fee for service

Total University Partners 5

Representative University Partners University of California

Source: Company

Bisk

HQ Tampa, FL

URL www.bisk.com

Telephone 813-621-6200

Year Founded 1971

Private Family-owned

Chief Executive Michael Bisk, CEO

Lead University Contact Becky Laman, AVP, Strategic Partnerships

Email rebecca-laman@bisk.com

Services Online program management

Description For 45 years, we have provided tools and opportunities to help lifelong learners reach their personal and professional goals. Since 1995, we have helped universities educate students through the development of online degree and certificate programs.

Business Model Revenue share/risk share; fee for service

Total University Partners 9

Representative University Partners Michigan State University - Broad School of Business, University of Notre Dame — Mendoza School of Business, Villanova University, Florida Technical University, University of South Florida — Morsani School of Medicine, Jacksonville University, New England College, University of Scranton, Valparaiso University

Source: Company

Blackboard, Inc.

HQ Washington, DC

URL www.blackboard.com

Telephone 800-424-9299

Year Founded 1997

Private

Chief Executive Bill Ballhaus, CEO

Lead University Contact Craig Chanoff, General Manager and Vice President, Education Services

Email craig.chanoff@blackboard.com

Services Recruitment & enrollment services; Data analytics

Description Blackboard is education's partner in change. All across campus, using our solutions, institutions deliver the type of connected experience today's lifelong students demand, using data and adapting technology to fit students' specific needs.

Business Model Fee for service

Total University Partners 15,000

Representative University Partners Georgetown University, Ivy Tech, Wichita State University, North Carolina Community College System, Yale, George Washington University, Johns Hopkins University, St. Louis University, Kentucky Community and Technical College System, George Mason University

Source: Company

Bridge Education Group

HQ Denver, CO

URL www.bridge.edu

Telephone 303-777-7783

Year Founded 1988

Private

Chief Executive Jean-Marc Alberola, President

Lead University Contact Lisa Rooney, VP Institutional Relations

Email lrooney@Bridge.edu

Services International student recruitment/pathways provider

Description Bridge Education Group is a full-service pathways program (BridgePathways) provider. We also offer consulting services including agent management and research and marketing intelligence.

Business Model Revenue share/risk share; fee for service

Total University Partners 7

Representative University Partners Capital University, Colorado Mesa University, Husson University, Manhattanville College, Metropolitan State University of Denver, Jefferson University, Western New England University

Source: Company

Burning Glass Technologies

HQ Boston, MA

URL www.burning-glass.com

Telephone 617-227-4800

Year Founded 1999

Private

Chief Executive Matthew Sigelman, CEO

Lead University Contact Daniel Silverburg, General Manager

Email dsilverburg@burning-glass.com

Services Data analytics

Description Burning Glass Technologies is an analytics software company that has cracked the genetic code of an ever-changing labor market. We deliver job data and breakthrough planning tools that inform careers, define academic programs, and shape workforces.

Business Model Fee for service

Total University Partners 350

Representative University Partners Northeastern University, Lone Star College, James Madison University, Georgetown University, University of Maryland Baltimore County

Source: Company

CA Ventures

HQ Chicago, IL

URL www.ca-ventures.com

Telephone 312-994-1880

Year Founded 2004

Private

Chief Executive Tom Scott, CEO

Lead University Contact Dan Hrankowsky, VP, Design & Development

Email dhrankowsky@ca-ventures.com

Services Student housing development; Other university real estate development

Description CA Ventures LLC is a Chicago-based real estate investment holding company whose international portfolio includes $7.8 billion in assets throughout the U.S., Canada, and Latin America.

Business Model Revenue share/risk share; fee for service

Total University Partners 55

Representative University Partners N/A

Source: Company

Cambridge Education Group

HQ Cambridge, England

URL cambridgeeducationgroup.com

Telephone 44-1223-346180

Year Founded 1952

Private

Chief Executive Michael Loakimides

Lead University Contact Abraham Varghese, SVP, North American University Partnership

Email avarghese@ceg-us.com

Services International student recruitment/pathways provider

Description Cambridge Education Group delivers high-quality academic, creative, and English language programs, preparing students to progress to top universities. We promise excellent teaching, premium facilities, and the personal service our students demand.

Business Model Revenue share/risk share

Total University Partners 15

Representative University Partners California State University Monterey Bay, Coventry University (UK), Illinois Institute of Technology, Lund University (SW), Morrisville State College, Queen Mary University of London (UK), University of Amsterdam (ND), University of North Texas, University of Rhode Island, University of Rochester

Source: Company

Campus Apartments

HQ Philadelphia, PA

URL www.campusapartments.com

Telephone 215-243-7000

Year Founded: 1958

Private

Chief Executive David Adelman, CEO

Lead University Contact Miles Orth, Executive Vice President & COO

Email morth@campusapartments.com

Services Student housing development

Description Campus Apartments is one of the nation's largest providers of on- and off-campus student housing. We are experienced in all facets of the student housing industry.

Business Model Fee for service

Total University Partners 6

Representative University Partners Emory University, Shippensburg University, University of Pennsylvania, Saint Joseph's University, Howard University, Franklin & Marshall College

Source: P3•EDU

Campus Labs, LLC

HQ Buffalo, NY

URL www.campuslabs.com

Telephone 716-270-0000

Year Founded 2001

Private

Chief Executive Eric Reich, Co-Founder and President

Lead University Contact Sean Casey, VP Strategic Initiatives and Corporate Development

Email scasey@campuslabs.com

Services Data analytics

Description Campus Labs provides data collection and visualization software that enables colleges and universities to make impactful, data-driven decisions.

Business Model Fee for service

Total University Partners 1,300

Representative University Partners Northern Arizona University, Marquette University, Lesley University, State University of New York at Albany, University of Michigan, Lehigh University, Indiana University, Purdue University

Source: P3•EDU

Campus Living Villages

HQ Houston, TX

URL www.campuslivingvillages.com

Telephone 713-871-5100

Year Founded 1986

Private

Chief Executive Thelma Edgell, CEO

Lead University Contact Doris Collins, Vice President Emeritus

Email Doris.Collins@clvusa.com

Services Student housing development

Description Campus Living Villages is a global student accommodation provider with services in finance, design, development, project management, and operation of student housing. CLV is one of the largest higher education student housing providers in the world.

Business Model Fee for service

Total University Partners 16

Representative University Partners Abilene Christian University, Academy of Art University, Louisiana State University, McMurray University, Northeastern State University, Oklahoma City University, University of Delaware, University of Houston, University of Illinois at Urbana-Champaign

Source: P3•EDU

CampusTap

HQ Boston, MA

URL www.thecampustap.com

Telephone N/A

Year Founded 2013

Private

Chief Executive Remy Carpinito, Founder and CEO

Lead University Contact Kyle Clark, Director Business Development

Email kyle@thecampustap.com

Services Career services

Description CampusTap provides private career networking and mentoring communities to help students and alumni pursue meaningful careers.

Business Model Fee for service

Total University Partners 5

Representative University Partners Boston College, Cedar Crest College, New York Institute of Technology, Santa Monica College, The University of Utah - David Eccles School of Business

Source: Company

Capstone Management Partners

HQ Birmingham, AL

URL www.capstonemp.com

Telephone 205-949-5050

Year Founded 2017

Private

Chief Executive Bruce McKee, Principal

Lead University Contact Matthew S. Brown, Senior Vice President

Email mbrown@capstonemail.com

Services Student housing development

Description Capstone Management Partners, LLC is a student housing property management company that provides marketing, leasing, operations, and maintenance management for student communities across the nation.

Business Model Revenue share/risk share; fee for service

Total University Partners 10

Representative University Partners San Diego State University, University of California - Santa Cruz, Cornish College, University of South Florida, Seattle University

Source: Company

Capture Higher Education

HQ Louisville, KY

URL www.capturehighered.com

Telephone 502-585-9033

Year Founded 2011

Private

Chief Executive Steve Huey, CEO

Lead University Contact Larry Erenberger, Sr. Vice President of Partnerships

Email lerenberger@capturehighered.com

Services Recruitment & enrollment services

Description Capture Higher Education provides enrollment management services with a wide variety of customized behavioral analytics, enrollment prediction, and student outreach tools for more effective and progressive student recruitment.

Business Model Fee for service

Total University Partners 9

Representative University Partners University of Toledo, Western Kentucky University, Tusculum College, University of Toledo, Belhaven University, Sweet Briar College, Bethel College, Alderson Broaddus University, Bellarmine University

Source: P3•EDU

Civitas Learning

HQ Austin, TX

URL www.civitaslearning.com

Telephone 512-692-7175

Year Founded 2011

Private

Chief Executive Charles Thornburgh, Founder and CEO

Lead University Contact Tony Capasso, VP Strategic Partnerships

Email tony.capasso@civitaslearning.com

Services Data analytics

Description Civitas Learning partners with institutions to harness the power of insight and action analytics, bringing the best of education, technology, and data together to measurably improve student persistence, retention, and graduation.

Business Model Revenue share/risk share; fee for service

Total University Partners 300

Representative University Partners Butler Community College, Onondaga Community College, National University, Wallace Community College, University of Texas Arlington, Berkeley College, Utah Valley University, Monroe College, Harper College, Daytona State College, Sacramento State College, Coppin State University, The University of Tennessee Knoxville

Source: P3•EDU

Collegis Education

HQ Oak Brook, IL

URL www.collegiseducation.com

Telephone 952-806-4694

Year Founded 2013

Private

Chief Executive James Cowie, President & CEO

Lead University Contact Drew Melendres, VP, Strategic Partnerships

Email Drew.Melendres@collegiseducation.com

Services Online program management

Description Collegis Education is a strategic partner whose revenue-growth solutions help colleges and universities maximize their enrollment potential through data-rich, technology-enabled, marketing, engagement, and retention services.

Business Model Revenue share/risk share; fee for service

Total University Partners 25

Representative University Partners Cabrini University, Concordia University Texas, Denison University, University of Mary, Bellevue University, Saint Joseph's College, Manchester University, Schreiner University, University of North Alabama, Kennebec Valley Community College

Source: Company

Collier Companies

HQ Gainesville, FL

URL www.colliercompanies.com

Telephone 352-375-2152

Year Founded 1972

Private

Chief Executive J. Andrew Hogshead, CEO

Lead University Contact Alyssa Broderick, Assistant Manager

Email alyssa.broderick@colliercompanies.com

Services Student housing development

Description The Collier Companies is the largest privately owned provider of student housing in the nation. Our portfolio is comprised of more than 10,500 units in Florida, Oklahoma, and Georgia.

Business Model Revenue share/risk share; fee for service

Total University Partners N/A

Representative University Partners University of Florida

Source: P3•EDU

Corix Infrastructure Services (US) Inc.

HQ Wauwatosa, WI

URL www.corix.com

Telephone 414-203-8700

Year Founded 2010

Private

Chief Executive Scott Thompson, President & CEO

Lead University Contact Dale Douglas, VP Corporate Development

Email dale.douglas@corix.com

Services Campus infrastructure services (parking, energy, etc.)

Description Corix helps build and manage utility infrastructure for water, wastewater, and sustainable energy. Working with our customers, we deliver safe, cost-effective, long-term sustainable utility infrastructure solutions for communities to grow and thrive.

Business Model Fee for service

Total University Partners N/A

Representative University Partners N/A

Source: P3•EDU

Corvias Group

HQ East Greenwich, RI

URL www.corvias.com

Telephone 401-228-2800

Year Founded 1998

Private

Chief Executive John Picerne, Founder & CEO

Lead University Contact Kurt Ehlers, Partnership Solutions Provider

Email Kurt.Ehlers@corvias.com

Services Student housing development; Other university real estate development; Campus infrastructure services (parking, energy, etc.)

Description Corvias partners with higher education institutions nationwide to solve their most essential systemic problems and create long-term, sustainable value through our unique approach to partnership.

Business Model Revenue share/risk share; fee for service

Total University Partners 14

Representative University Partners Wayne State University, Howard University, Georgia State University, Augusta University, Columbus State University, Dalton State, University of North Georgia, College of Coastal Georgia, East Georgia State College

Source: Company

Council for Adult and Experiential Learning (CAEL)

HQ Chicago, IL

URL www.cael.org

Telephone 312-499-2600

Year Founded 1974

Private Nonprofit

Chief Executive Pamela Tate, CEO

Lead University Contact Scott Campbell, VP Higher Education Engagement

Email scampbell@cael.org

Services Recruitment & enrollment services; Data analytics; Career services

Description Dedicated to linking learning and work, the 501(c)(3) nonprofit Council for Adult and Experiential Learning (CAEL) works within all levels of the public and private sectors to enhance learning opportunities for adults.

Business Model Fee for service

Total University Partners 700

Representative University Partners Alamo Colleges, Cambridge College, City College of San Francisco, CUNY, Mercy College, Mississippi Community Colleges, National Louis University, Texas A&M University Texarkana, UMUC, West Hills Community College District

Source: Company

Coursera

HQ Mountain View, CA

URL www.coursera.org

Telephone 650-316-5752

Year Founded 2012

Private

Chief Executive Jeff Maggioncalda, CEO

Lead University Contact Deanna Raineri, Chief Academic Strategist

Email draineri@coursera.org

Services Online program management

Description Coursera is an online education company offering free and for-fee courses, course bundles (specializations), and degrees from top universities and educational institutions around the world.

Business Model Revenue share/risk share; fee for service

Total University Partners 150

Representative University Partners University of Pennsylvania, University of Michigan, Arizona State University, Case Western Reserve University, Columbia University, Duke University, Johns Hopkins University, Princeton University, Yale University, University of London

Source: Company

EAB

HQ Washington, DC

URL www.eab.com

Telephone 202-747-1000

Year Founded 2007

Private Vista Equity Partners

Chief Executive David Felsenthal, CEO

Lead University Contact Scott Schirmeier, EVP

Email EABCommunications@eab.com

Services Recruitment & enrollment services; Data analytics

Description At EAB, we are making education smarter. We harness the collective power of more than 1,200 educational institutions to generate insights that address education leaders' top challenges.

Business Model Fee for service

Total University Partners 1,200

Representative University Partners Harvard University, University of Florida, University of North Carolina-Chapel Hill, California State University System, University of Pennsylvania, University of Virginia, Duke University

Source: Company

EC Higher Education

HQ Boston, MA

URL www.echigher.com

Telephone 617-247-0121

Year Founded 1992

Private

Chief Executive Alex Parnia, Ph.D., President

Lead University Contact May Arthur

Email partnership@echigher.com

Services International student recruitment/pathways provider

Description EC Higher Education partners with US universities to provide an expanded global profile and improved international reputation. EC delivers opportunities to high-potential international students to thrive academically in the US higher ed system.

Business Model Revenue share/risk share

Total University Partners 5

Representative University Partners University of Hartford, DePaul University, University of California — Santa Clara Silicon Valley Extension, Pacific Lutheran University, State University of New York at Fredonia

Source: Company

Edgemoor Infrastructure & Real Estate

HQ Bethesda, MD

URL www.edgemoor.com

Telephone 301-272-2910

Year Founded 2004

Private

Chief Executive Neal Fleming, Principal and President

Lead University Contact Brian Dugan, Director

Email brian.dugan@edgemoordevelopment.com

Services Student housing development; Other university real estate development

Description Edgemoor offers comprehensive development solutions to a broad range of clients in a streamlined, cost-efficient manner.

Business Model Revenue share/risk share; fee for service

Total University Partners 3

Representative University Partners University of Kansas, George Mason University, University of California — San Francisco

Source: Company

EdR Collegiate Housing

HQ Memphis, TN

URL www.edrtrust.com

Telephone 901-259-2500

Year Founded 1964

Public EDR

Chief Executive Randy Churchey, CEO and Chairman

Lead University Contact Julie Skolnicki, SVP University Partnerships

Email jskolnicki@edrtrust.com

Services Student housing development

Description EdR is one of America's largest owners, developers, and managers of collegiate housing. EdR owns or manages 83 communities with more than 44,700 beds serving 52 universities in 26 states.

Business Model Revenue share/risk share; fee for service

Total University Partners 21

Representative University Partners University of Kentucky, Cornell University, Boise State University, University of California-Berkeley, Northern Michigan University, Syracuse University, University of Connecticut, University of North Carolina, University of Texas

Source: Company

Education To Go (ed2go)

HQ Temecula, CA

URL www.ed2go.com

Telephone 951-972-3777 ext 43777

Year Founded 1997

Private Cengage Learning

Chief Executive Cory Eyler, General Manager

Lead University Contact Rafael Castaneda, Director, Strategic Partnerships

Email rafael.castaneda@cengage.com

Services Non-credit program provider

Description ed2go is the industry leader in affordable online learning for adults. We provide the highest-quality online continuing education courses that are easy to use through a network of over 2,100 top colleges and universities.

Business Model Revenue share/risk share; fee for service

Total University Partners 2,000

Representative University Partners George Mason University, Auburn University Outreach, California State University - San Marcos, Texas A&M - Corpus Christi, Rutgers University

Source: Company

EduCo International Group

HQ Melbourne, Australia

URL www.educoglobal.com

Telephone 61 43 888 0646

Year Founded 2010

Private

Chief Executive Joff Allen, CEO

Lead University Contact Darren Lurie, Group CFO and Head of Business Development

Email darren.lurie@educoglobal.com

Services International student recruitment/pathways provider

Description EduCo International Group is a global expert in recruiting, converting, and retaining international students. EduCo International Group has university partnerships in Australia, Canada, Ireland, and the United States.

Business Model Fee for service

Total University Partners 14

Representative University Partners University of Nebraska, Lincoln, Duquesne University, New Jersey Institute of Technology, University of Saint Thomas, University of Maryland, Baltimore County

Source: Company

EdX

HQ Cambridge, MA

URL www.edx.org

Telephone 617-324-7072

Year Founded 2012

Private Not for profit

Chief Executive Anant Agarwal, CEO

Lead University Contact Johannes Heinlein, VP Strategic Partnerships

Email johannes@edx.org

Services Non-credit program provider

Description EdX is a non-profit organization that operates an open-source platform of online courses from leading global universities and companies.

Business Model Fee for service

Total University Partners 131

Representative University Partners Massachusetts Institute of Technology, Harvard University, University of California Berkeley, University of Texas System, Australian National University, Boston University, Georgetown University, The Hong Kong University of Science and Technology, Notre Dame University, Oxford University

Source: Company

EF Education

HQ Boston, MA

URL www.ef.edu

Telephone 800-457-1300

Year Founded 1965

Private

Chief Executive Edward Hult, CEO North America

Lead University Contact Tarik Zahzah, Director USA/Canada

Email Tarik.Zahzah@EF.com

Services International student recruitment/pathways provider

Description EF Education is an international education company that specializes in language training, educational travel, academic degree programs, and cultural exchange.

Business Model Fee for service

Total University Partners 145

Representative University Partners University of Dayton, University at Albany (SUNY), Bryant University, Douglas College, Montana State University, St. John's University, San Francisco State University

Source: Company

ELS Educational Services, Inc.

HQ Princeton, NJ

URL www.els.edu

Telephone 605-376-5642

Year Founded 1961

Public BSEFF

Chief Executive Reiji Terasaka, CEO

Lead University Contact Ben Iverson, Director, University Partnerships

Email biverson@els.edu

Services International student recruitment/pathways provider; Non-credit program provider

Description Since 1961, ELS Educational Services' mission is to offer holistic international student advising, recruitment, and preparation to enable academic success while empowering universities to internationalize their campuses.

Business Model Revenue share/risk share; fee for service

Total University Partners 650

Representative University Partners California Lutheran University, University of St. Thomas in MN, Case Western University, University of La Verne, Florida Institute of Technology, Marquette University, Hofstra University

Source: Company

Elsmere Education

HQ Denver, CO

URL www.elsmereeducation.com

Telephone 720-255-2840

Year Founded 2012

Private

Chief Executive Justin McMorrow

Lead University Contact Justin McMorrow

Email justin@elsmereeducation.com

Services Online program management; Recruitment & enrollment services

Description Elsmere Education (EEI) partners with top-tier colleges and universities to build, launch, and manage online degree programs. EEI offers a transparent solution focused on high-quality programs with shorter contracts and a lower revenue share model.

Business Model Revenue share/risk share; Fee for service

Total University Partners 3

Representative University Partners University of Oklahoma

Source: Company

Emerge Education

HQ Camp Hill, PA

URL www.emergeedu.com

Telephone 800-208-5499

Year Founded 2014

Private

Chief Executive Kim T. Coon, CEO

Lead University Contact James M. Hunter, PhD, SVP, Business Development & Chief Academic Officer

Email jimhunter@emergeedu.com

Services Online program management

Description Emerge utilizes its resources to generate leads, create and implement marketing campaigns, recruit students, and increase student retention, allowing institutions to focus on what they do best — educating students.

Business Model Revenue share/risk share

Total University Partners 5

Representative University Partners Concordia University Chicago, Geneva College, Montclair State University, Oakland City University, San Diego Christian College

Source: Company

Encoura

HQ Lee's Summit, MO

URL www.encoura.org

Telephone 800-862-7759

Year Founded 2017

Private Sterling Partners

Chief Executive Patrick Vogt, CEO and Director

Lead University Contact Dennis Syracuse, COO and Chief Client Officer

Email dennis.syracuse@nrccua.org

Services Data analytics

Description Encoura Data Lab is an enrollment platform that combines student intelligence data, advanced analytics, and education-specific research so institutions can make informed decisions that optimize fit and create the highest probability of success.

Business Model Fee for service

Total University Partners 1,800

Representative University Partners High Point University, Hanover College, University of Mobile, Maryville College, University of New Haven, University of Tampa, Norwich University, Marist College, Minnesota State University, Keuka College

Source: P3•EDU

ENGIE North America, Inc.

HQ Houston, TX

URL www.engie-na.com

Telephone 713-636-0000

Year Founded 1981

Private

Chief Executive Stefaan Sercu, CEO and President

Lead University Contact Lynn Byrd, Vice President Business Development

Email lynn.byrd@na.engie.com

Services Campus infrastructure services (parking, energy, etc.)

Description ENGIE is a global energy player and an expert operator in the three businesses of electricity, natural gas, and energy services.

Business Model Fee for service

Total University Partners N/A

Representative University Partners Ohio State University

Source: P3•EDU

Envision

HQ Vienna, VA

URL www.envisionexperience.com

Telephone 866-858-5323

Year Founded 1985

Private Gryphon Investors

Chief Executive Duncan Young, CEO

Lead University Contact Andrew Potter, Chief Academic Officer

Email apotter@envisionexperience.com

Services Non-credit program provider

Description Envision partners with universities to help them provide powerful pre-college program offerings that lead to additional revenue and expanded student recruitment pipelines.

Business Model Revenue share/risk share

Total University Partners 15

Representative University Partners George Mason University, Stanford University

Source: Company

Everspring Inc.

HQ Chicago, IL

URL www.everspringpartners.com

Telephone 847-278-4288

Year Founded 2011

Private

Chief Executive Jeff Conlon, Co-Founder and CEO

Lead University Contact Mike Wright, EVP University Partnerships

Email mwright@everspringpartners.com

Services Online program management

Description Everspring partners with universities to create and scale distinctive high-quality online programs. Our innovative approach, powerful technology, and integrated services consistently deliver exceptional retention, graduation, and satisfaction ratings.

Business Model Revenue share/risk share; Fee for service

Total University Partners 12

Representative University Partners William & Mary, University of Kansas, Santa Clara University, Yeshiva University, Kent State University, Case Western Reserve University, Tulane University, Auburn University

Source: P3•EDU

Fermata Partners LLC

HQ Atlanta, GA

URL www.fermatapartners.com

Telephone 404-996-1966

Year Founded 2011

Private

Chief Executive Derek Eiler, Co-Founder and Managing Partner

Lead University Contact Chris Prindiville, Co-Founder and Partner

Email chris@fermatapartners.com

Services Brand licensing (including athletics)

Description Fermata Partners is a specialized consumer products licensing agency focused on colleges and universities, global football clubs, and iconic sports lifestyles brands.

Business Model Fee for service

Total University Partners 7

Representative University Partners University of Virginia, University of Wisconsin, University of Georgia, University of Notre Dame, University of Miami, University of Oregon, University of Kentucky

Source: P3•EDU

Foresight Science & Technology, Inc.

HQ Hopkinton, MA

URL www.ForesightST.com

Telephone 401-273-4844

Year Founded 1980

Private

Chief Executive Norton Kaplan, President

Lead University Contact Alyssa Nacewicz, Director, Sales & Marketing

Email alyssa.nacewicz@foresightst.com

Services Intellectual property acquisition/licensing

Description A full-service consultancy providing tech transfer, commercialization, and training services. Foresight supports or evaluates the commercial potential of 500+ technologies per year across all industries with a staff of 70 senior consultants.

Business Model Fee for service

Total University Partners 20

Representative University Partners SUNY - The State University of New York, University of Illinois, University of Texas System, Clemson University, University of Southampton, City University of Hong Kong, Rochester Institute of Technology

Source: Company

Full Measure Education

HQ Washington, DC

URL www.fullmeasureed.com

Telephone 855-FME-1100

Year Founded 2013

Private

Chief Executive Greg Davies

Lead University Contact Charles Brodsky

Email chuck@fullmeasureed.com

Services Recruitment & enrollment services

Description Full Measure Education is an expert in closing the communication gap with students through the development and deployment of mobile communication strategies.

Business Model Fee for service

Total University Partners 37

Representative University Partners York College, Central Alabama Community College, Hope College

Source: Company

Global University Systems

HQ London, United Kingdom

URL www.globaluniversitysystems.com

Telephone +44 (0) 20 3435 4455

Year Founded 2003

Private

Chief Executive Aaron Etingen

Lead University Contact Andrew Malley

Email Amalley@globaluniversitysystems.com

Services Online program management; International student recruitment/pathways provider; Non-credit program provider

Description Global University Systems (GUS) is a multinational group that operates as both an owner/operator and partner for multiple brands, universities, colleges, and schools in over 20 global locations including the UK, USA, Singapore, and Canada.

Business Model Revenue share/risk share

Total University Partners 21

Representative University Partners The University of Law, Arden University, Webster University, Grenoble School of Management, Bocconi School of Management, The University of Bradford, The University of Wolverhampton, Concordia University Chicago, Victoria University, University of Exeter

Source: Company

GradLeaders, LLC

HQ Dublin, OH

URL www.gradleaders.com

Telephone 614-791-9000

Year Founded 2002

Private

Chief Executive Jack Gainer, CEO

Lead University Contact Bill Donnelly, VP Sales

Email bdonnelly@gradleaders.com

Services Career services

Description GradLeaders provides student recruitment and career service technology, connects employers with job-seeking students, and offers alumni analysis reports from university career centers worldwide.

Business Model Fee for service

Total University Partners 7

Representative University Partners Harvard Business School, New York Institute of Technology, Georgia State University — J. Mack Robinson College of Business, Michigan Ross School of Business, University of Oregon, Southern New Hampshire University, University of California Irvine, The Paul Merage School of Business

Source: P3•EDU

Hanover Pacific

HQ Irvine, CA

URL www.hanoverpacific.com

Telephone 714-855-2985

Year Founded 2007

Private

Chief Executive Joe Waechter, Chairman

Lead University Contact Samuel Kim, MD Development

Email skim@hanoverpacific.com

Services Student housing development, Other university real estate development

Description HP's services span the project life cycle and are flexible to meet campus needs from independent, off-campus housing to construction management for on-campus developments.

Business Model Revenue share/risk share; fee for service

Total University Partners N/A

Representative University Partners Claremont Graduate University, University of LaVerne, Western University

Source: P3•EDU

Harrison Street Real Estate Capital

HQ Chicago, IL

URL www.harrisonst.com

Telephone 312-920-0500

Year Founded 2005

Private

Chief Executive Chris Merrill, Co-Founder, President & CEO

Lead University Contact Michael Leonczyk, Vice President

Email mleonczyk@harrisonst.com

Services Student housing development; Other university real estate development; Campus infrastructure services (parking, energy, etc.)

Description Harrison Street is a privately owned investment management firm with an exclusive focus in education, healthcare, and storage. Since inception in 2005, the firm has invested over $19.9 billion in our sectors.

Business Model Revenue share/risk share

Total University Partners 131

Representative University Partners University of Chicago, University of South Florida, University of California — Berkeley, Texas A&M University, Marquette University, Seattle University, Cornish College of the Arts, Columbia College, Long Island University

Source: Company

HelioCampus, Inc.

HQ Bethesda, MD

URL www.heliocampus.com

Telephone 844-99-HELIO

Year Founded 2016

Private UMUC Ventures

Chief Executive Darren Catalano, Chief Executive Officer

Lead University Contact Jody DellaMonica, Business Development Manager

Email jody.dellamonica@heliocampus.com

Services Data analytics

Description HelioCampus helps colleges and universities use analytics to increase enrollment, improve student success, ensure financial sustainability, and accelerate gift giving.

Business Model Fee for service

Total University Partners 15

Representative University Partners George Mason University, The University of North Carolina System, Ithaca College, University of Massachusetts Lowell, St. Edward's University, and The University of Maryland University College

Source: Company

Helix Education

HQ Denver, CO

URL www.helixeducation.com

Telephone 800-279-9335

Year Founded 2013

Private

Chief Executive Matthew Schnittman, President & CEO

Lead University Contact Kari Kovar, COO

Email kkovar@helixeducation.com

Services Online program management; Recruitment & enrollment services

Description Helix Education helps colleges and universities across the nation thrive at maximizing enrollment growth through data-driven services and technologies across the post-traditional student life cycle.

Business Model Revenue share/risk share; fee for service

Total University Partners 14

Representative University Partners Brenau University, Davenport University, Huston-Tillotson University, Judson University, National Louis University, Parker University, Thomas More College, Mount Mercy University

Source: Company, P3EDU

HigherEducation.com

HQ Houston, TX

URL www.highereducation.com

Telephone 713-534-1948

Year Founded 2007

Private

Chief Executive Patrick Gavin, CEO

Lead University Contact Joeri Weyenberg, President

Email jweyenberg@highereducation.com

Services Online program management

Description HigherEducation.com delivers over 15,000 online student enrollments annually to its university partners. The company leverages best in class content marketing that drives the largest marketplace of high-intent prospective students.

Business Model Revenue share/risk share; fee for service

Total University Partners 120

Representative University Partners Xavier University, University of Iowa, Point University, Liberty University, Kaplan University

Source: Company

Hobsons

HQ Cincinnati, OH

URL www.hobsons.com

Telephone 800-927-8439

Year Founded 1974

Private

Chief Executive Kathryn Cassino-McHugh, CEO

Lead University Contact Howard Bell, SVP Higher Education Student Success

Email howard.bell@hobsons.com

Services Recruitment & enrollment services, Data analytics

Description Hobsons delivers college and career readiness solutions that help bridge the gap between college access and completion by engaging students throughout their educational journey.

Business Model Fee for service

Total University Partners More than 12,000 K-12 and higher education institutions partner with Hobsons.

Representative University Partners Lynn University, University of California — Santa Barbara, Ramapo College, Helena College, University of Nebraska, Youngstown State University

Source: P3•EDU

iDesign

HQ Dallas, TX

URL www.idesignedu.org

Telephone 800-581-5418

Year Founded 2013

Private

Chief Executive Paxton Riter, Co-Founder and CEO

Lead University Contact Paxton Riter

Email paxton.riter@idesignedu.org

Services Online program management; Non-credit program provider

Description iDesign partners with colleges and universities to build, grow, and support online and blended programs. iDesign was created to disrupt the incumbent OPM business model by taking a faculty-centric approach toward online education.

Business Model Fee for service

Total University Partners 25

Representative University Partners University of Pittsburgh, University of Southern California, University of Nebraska, University of North Carolina System, Loma Linda University, Schreiner University

Source: Company

iLaw Ventures

HQ Tuscaloosa, AL

URL www.ilawventures.com

Telephone 239-325-3169

Year Founded 2013

Private A member of the Barbri Group

Chief Executive Kenneth Randall, President

Lead University Contact Michael Gregory, VP Business Development

Email michael.gregory@ilawventures.com

Services Online program management

Description iLaw is the leading partner for online J.D., post-J.D., and non-J.D. programs. We work closely with law schools to create solutions that build on your school's strengths while taking on tasks that allow you to concentrate on the academics.

Business Model Revenue share/risk share

Total University Partners 50 ABA-accredited law schools

Representative University Partners Baylor University, Boston University, Emory University, University of Illinois, Texas A&M University, Vanderbilt University

Source Company

IMG College, LLC

HQ Winston-Salem, NC

URL www.imgcollege.com

Telephone 216-522-1200

Year Founded 2007

Private

Chief Executive Ben Sutton, Jr., Chairman and President

Lead University Contact Mike Scanlan, Director Corporate Communications

Email Mike.Scanlan@img.com

Services Brand licensing (including athletics)

Description IMG College is the United States' largest collegiate sports marketing company, representing more than 200 of the nation's top collegiate properties including the NCAA and its 89 championships, NCAA Football, and leading conferences

Business Model Fee for service

Total University Partners 290

Representative University Partners Washington State University, Duke University, Vanderbilt University, Syracuse University, Villanova University, The Ohio State University, Boston College, Wake Forest University, University of Miami, West Virginia University

Source P3•EDU

InsideTrack

HQ Portland, OR

URL www.insidetrack.com

Telephone 424-218-5333

Year Founded 2001

Private A member of the non-profit Strada Education Network

Chief Executive Pete Wheelan, CEO

Lead University Contact Dave Jarrat, VP of Marketing

Email dave.jarrat@insidetrack.com

Services Recruitment & enrollment services; Coaching/mentoring

Description InsideTrack's professional coaching and uCoach engagement and analytics platform increase student enrollment, completion, and career readiness. Leverage insights gained from our work with 1.7+ million students and 1,600+ programs since 2001.

Business Model Fee for service

Total University Partners 1,600

Representative University Partners Austin Community College, California State University, Individuals Dedicated to Excellence and Achievement (IDEA) Public Schools, Ivy Tech Community College, Northeast Wisconsin Technical College, Northeastern University, Northwestern University, Old Dominion University, Penn State University, University of Washington

Source: Company

Intellectual Ventures Management, LLC

HQ Bellevue, WA

URL www.intellectualventures.com

Telephone 425-467-2300

Year Founded 2000

Private

Chief Executive Nathan Myhrvold, Founder and CEO

Lead University Contact N/A

Email info@intven.com

Services Intellectual property acquisition/licensing

Description Intellectual Ventures Management, LLC engages in the business of invention. It engages in licensing, selling, and buying of patents.

Business Model Revenue share/risk share; fee for service

Total University Partners N/A

Representative University Partners University of Manitoba, Rutgers University, University of California, New Jersey Institute of Technology, California Institute of Technology, State University of New York, New York University, University of Texas, Texas A&M University, University of Connecticut

Source: P3•EDU

INTO University Partnerships

HQ San Diego, CA

URL www.intoglobal.com

Telephone 858-356-4400

Year Founded 2005

Private Andrew Colin

Chief Executive John Latham, CEO

Lead University Contact Bruce Magid, EVP, Partnership Development, North America

Email bruce.magid@intoglobal.com

Services International student recruitment/pathways provider

Description INTO specializes in building deeply embedded partnerships that enable universities to achieve their internationalization goals. Together with our partners, we share a commitment to helping students fulfill their potential and become global citizens.

Business Model Revenue share/risk share

Total University Partners 20

Representative University Partners Oregon State University, University of South Florida, Colorado State University, Marshall University, George Mason University, Drew University, Saint Louis University, The University of Alabama at Birmingham, Washington State University, Suffolk University

Source: Company

JMI Sports

HQ San Diego, CA

URL www.jmisports.com

Telephone 619-756-6340

Year Founded 2006

Private

Chief Executive Erik Judson, CEO

Lead University Contact Kacie Renc, President Development

Email renc@jmisports.com

Services Brand licensing (including athletics)

Description JMI Sports is a full-service collegiate marketing firm providing the highest quality management of athletics multimedia rights and Total Campus Marketing programs, maximizing the economic potential of universities.

Business Model Fee for service

Total University Partners 5

Representative University Partners Clemson University, University of Kentucky, University of Pennsylvania, University of Georgia

Source P3•EDU

Kaplan International

HQ London, United Kingdom

URL www.kaplanpathways.com

Telephone +44 (0)20 8727 3500

Year Founded 2005

Public Division of Graham Holdings NYSE: GHC

Chief Executive David Jones, CEO Kaplan International

Lead University Contact Mary Jane Miller, SVP North America Higher Ed

Email maryjane.miller@kaplan.com

Services International student recruitment/pathways provider

Description Kaplan International has a world-leading global student recruitment network, along with a number of innovative models that support university partners.

Business Model Revenue share/risk share; fee for service

Total University Partners 13

Representative University Partners Northeastern University, Pace University, University of Glasgow, Adelaide University, University of Liverpool, University of York, University of Nottingham

Source: Company

Keypath Education

HQ Chicago, IL

URL www.keypathedu.com

Telephone 224-419-7988

Year Founded 2014

Private Sterling Partners

Chief Executive Steve Fireng, CEO

Lead University Contact Michael Purcell, EVP

Email michael.purcell@keypathedu.com

Services Online program management

Description Keypath Education is dedicated to creating global access to online education by partnering with universities to launch quality online degree programs. Services include research, marketing, student recruitment, retention, and course development.

Business Model Revenue share/risk share

Total University Partners 23

Representative University Partners Baylor University, Florida State University, Michigan Technological University, James Cook University, RMIT University, Southern Cross University, University of New South Wales, Victoria University, Aston University, University of Exeter

Source: Company

Kings Education

HQ Los Angeles, CA

URL www.kingseducation.com

Telephone 213-625-0320

Year Founded 1957

Private

Chief Executive Jose Antonio Flores, US Managing Director

Lead University Contact Jose Antonio Flores

Email jose.flores@kingseducation.com

Services International student recruitment/pathways provider

Description Kings is a private international education group in the USA and UK. We offer university Pathways. Our pathways provide individualized attention and progression support, placing students in a top 100 nationally-ranked university.

Business Model Revenue share/risk share

Total University Partners 5

Representative University Partners Rider University, Pine Manor College, Marymount California University, Concordia College, University of Wisconsin

Source: Company

Landmark Properties, Inc.

HQ Athens, GA

URL www.landmark-properties.com

Telephone 678-835-2674

Year Founded 2003

Private

Chief Executive J. Wesley Rogers, President and CEO

Lead University Contact: Jason Doornbos, EVP Development

Email jason.doornbos@landmark-properties.com

Services Student housing development

Description Landmark Properties is a fully integrated real estate firm specializing in the acquisition, development, and management of high-quality student housing communities.

Business Model Fee for service

Total University Partners 40

Representative University Partners Georgia Tech University, The University of Georgia, Auburn University, The University of Alabama, Florida State University, University of Tennessee, Pennsylvania State University, Oregon State University, University of California-Berkeley, Texas State University

Source P3•EDU

Laureate Education, Inc.

HQ Baltimore, MD

URL www.laureate.net

Telephone 410-843-6100

Year Founded 1989

Public LAUR

Chief Executive Eilif Serck-Hanssen, CEO

Lead University Contact Adam Morse, SVP Corporate Finance

Email adam.morse@laureate.net

Services Online program management

Description Laureate Education, Inc. is the largest global network of degree-granting higher education institutions, with more than one million students enrolled across over 60 institutions in more than 20 countries at campuses and online.

Business Model Revenue share/risk share; fee for service

Total University Partners 4

Representative University Partners University of Liverpool (UK), University of Miami, Johns Hopkins University

Source: Company

Learfield Licensing Partners

HQ Indianapolis, IN

URL www.learfieldlicensing.com

Telephone 317-669-0808

Year Founded 1997

Private

Chief Executive Bob Bernard, CEO/ President

Lead University Contact Tony Johnson, EVP

Email tjohnson@learfieldlicensing.com

Services Intellectual property acquisition/licensing

Description Learfield Licensing Partners is a world-class licensing firm that provides the best practices and strategies in the industry to properly protect, grow, and promote your brand.

Business Model Revenue share/risk share; fee for service

Total University Partners 627

Representative University Partners N/A

Source: Company

The Learning House, Inc.

HQ Louisville, KY

URL www.learninghouse.com

Telephone 502-589-9878

Year Founded 2001

Private Weld North LLC

Chief Executive Todd Zipper, President and CEO

Lead University Contact Jay Hatcher, SVP, Business Development & General Counsel

Email jhatcher@learninghouse.com

Services Online program management; International student recruitment/pathways provider; Non-credit program provider; Recruitment & enrollment services

Description Learning House is an academic program manager that delivers more students, more graduates, and better outcomes through a broad portfolio of technology-enabled education solutions.

Business Model Revenue share/risk share

Total University Partners 53

Representative University Partners Concordia University St. Paul, Aurora University, Campbellsville University, University of West Alabama, West Virginia State University, Thomas Jefferson University, Lesley University, St. Ambrose University, Virginia Wesleyan University, Fairleigh Dickinson University

Source: Company

Meteor Learning

HQ Boston, MA

URL www.meteorlearning.com

Telephone 978-624-7001

Year Founded 2014

Private

Chief Executive William Rieders, CEO

Lead University Contact Brian Mahoney, EVP, Partnerships and Programs

Email brian.mahoney@meteorlearning.com

Services Online program management

Description Meteor Learning partners with colleges and universities to develop workforce-aligned degrees. Our mature network of corporate partners and full suite of services enable partners to quickly drive new revenue streams from working professionals.

Business Model Revenue share/risk share; fee for service

Total University Partners 3

Representative University Partners Merrimack College, Boston College, Houston Baptist University

Source: Company

MindMax, LLC

HQ Rockland, MA

URL www.mindmax.net

Telephone 718-884-0130

Year Founded 2009

Private

Chief Executive Lee Maxey, CEO

Lead University Contact Laura Cazayoux, Vice President of Client Operations

Email lcazayoux@mindmax.net

Services Recruitment & enrollment services

Description MindMax provides strategic consulting, marketing, and enrollment services for colleges and universities.

Business Model Fee for service

Total University Partners 5

Representative University Partners The University of California, Irvine Division of Continuing Education; Boston University; Harvard Extension School; The University of Vermont, Continuing and Distance Education; Rhode Island School of Design, Continuing Education

Source: P3•EDU

Motimatic

HQ San Francisco, CA

URL www.motimatic.com

Telephone 650-248-1893

Year Founded 2015

Private University Ventures

Chief Executive Alan Tripp, CEO

Lead University Contact Chris Tilghman, VP

Email ctilghman@motimatic.com

Services Data analytics; Coaching/mentoring

Description Motimatic has developed the first automatic motivation system for improving student engagement, retention, and graduation. Our technology blends the latest advances in ad tech and behavioral science to serve motivating messages to specific students.

Business Model Fee for service

Total University Partners 20

Representative University Partners Old Dominion University Online, Indiana University Online, Southern New Hampshire University, American Intercontinental University

Source: Company

Navitas

HQ Boston, MA

URL www.navitas.com

Telephone 617-279-0030

Year Founded 1994

Public ASX NVT

Chief Executive David Buckingham, CEO

Lead University Contact Stacey Stevens, VP Partnership Development

Email stacey.stevens@navitas.com

Services International student recruitment/pathways provider

Description As pioneers in campus internationalization, we help our partners build a stronger, more diverse international student population, improve academic outcomes, deliver superior student experiences, and generate sustainable revenue.

Business Model Revenue share/risk share

Total University Partners 32

Representative University Partners University of New Hampshire, University of Massachusetts (Boston, Dartmouth, Lowell), Virginia Commonwealth University, Florida Atlantic University, University of Idaho, Simon Fraser University, University of Manitoba

Source: Company

Noodle Partners

HQ New York, NY

URL www.noodle-partners.com

Telephone 646-422-9946

Year Founded 2014

Private Swan Legend, Osage Partners, Owl Ventures

Chief Executive John Katzman, CEO

Lead University Contact Greg O'Brien, COO

Email gobrien@noodle.com

Services Online program management; Data analytics; Non-credit program provider; Recruitment & enrollment services

Description Noodle Partners has disrupted the traditional OPM model. We deliver the same fit and finish of programming as the best of them, but at dramatically lower cost. We give school clients 100% transparency and flexibility around scope of service.

Business Model Revenue share/risk share; fee for service

Total University Partners 12

Representative University Partners Tulane University, American University, Claremont Graduate University, Boston College, University of Virginia, University of Washington, Pepperdine University, Wake Forest University

Source: Company

Nuro Retention

HQ Chicago, IL

URL www.nuroretention.com

Telephone 866-238-7327

Year Founded 2011

Private

Chief Executive Tom McNamara, CEO

Lead University Contact Amy Sorter, National Sales Director

Email asorter@nurolearning.com

Services Data analytics

Description Nuro is an innovative software and data analytics platform developed as the most comprehensive solution for improving college completion on the market today. Using predictive and proactive analytics, Nuro identifies persistence and retention trends.

Business Model Fee for service

Total University Partners 25

Representative University Partners University of California Berkeley, Iowa Lakes Community College, Independence University, Mid Michigan Community College, ERAE Adult Education Schools, Utica College, Wilmington College, Richard Bland College of William and Mary

Source: Company

Orbis Education

HQ Carmel, IN

URL www.orbiseducation.com

Telephone 317-663-0260

Year Founded 2003

Private

Chief Executive Steve Hodownes CEO

Lead University Contact Dan Briggs, Founder

Email dan.briggs@orbiseducation.com

Services Online program management

Description We are the leading provider of pre-licensure healthcare programs for universities and the only OPM totally dedicated to healthcare. Our programs produce thousands of high-quality graduates ready to enter the workforce and meet employers' demands.

Business Model Revenue share/risk share

Total University Partners 15

Representative University Partners Xavier University, Northeastern University in Boston, Loyola University of Chicago, Marquette University

Source: Company

Pearson Online Program Management

HQ: New York, NY

URL www.pearson.com/us/higher-education/products-services-institutions/online-program-management.html

Telephone 877-303-2340

Year Founded 1995

Public NYSE: PSO

Chief Executive John Fallon, CEO

Lead University Contact Robin Bishop, VP Business Development

Email robin.bishop@pearson.com

Services Online program management

Description Pearson provides online learning services and solutions for schools, colleges, and universities worldwide.

Business Model: Revenue share/risk share; fee for service

Total University Partners 10

Representative University Partners Abilene Christian University, Arizona State University, George Washington University, Hofstra University, Maryville University, Norwich University, Rutgers University, University of Cincinnati, University of Nevada, University of Southern California

Source: P3•EDU

Plenary Group USA

HQ Los Angeles, CA

URL www.plenarygroup.com

Telephone 424-278-2180

Year Founded 2005

Private Employee owned

Chief Executive Brian Budden, President and CEO

Lead University Contact Mike Marasco, CEO Plenary Concessions

Email mike.marasco@plenarygroup.com

Services Other university real estate development; Campus infrastructure services (parking, energy, etc.)

Description Plenary Group is North America's leading specialized developer and long-term investor of public-private partnership projects, with a portfolio of 29 projects worth $16.5 billion, including projects in higher education.

Business Model Revenue share/risk share

Total University Partners 2

Representative University Partners University of California - Merced, Purdue University

Source: Company

Public Facilities Group

HQ Seattle, WA

URL www.publicfacilitiesgroup.org

Telephone 206-849-6260

Year Founded 2016

Private

Chief Executive John Finke, President

Lead University Contact John Finke

Email johnfinke@publicfacilitiesgroup.org

Services Student housing development; Other university real estate development; Campus infrastructure services (parking, energy, etc.)

Description Public Facilities Group combines privately issued tax-exempt debt, progressive design-build delivery, focusing on optimizing lifecycle costing. A national leader, PFG staff has completed 28 projects with development costs of $1.8 billion.

Business Model Fee for service

Total University Partners 5

Representative University Partners University of Washington, Edmonds Community College, Washington State University, University of Alaska - Fairbanks, Seattle Pacific University

Source: Company

ReUp Education

HQ San Francisco, CA

URL www.reupeducation.com

Telephone 917-239-0518

Year Founded 2015

Private Michelson Runway, University Ventures, Entangled Ventures, Serious Change Investments

Chief Executive Nitzan Pelman, CEO

Lead University Contact Sarah Horn, Co-Founder and Chief Experience Officer

Email horn@reupeducation.com

Services Coaching/mentoring

Description At ReUp Education, we partner with universities to re-enroll students who have dropped out of college. We use a blend of humans and technology to locate students and then support them in the re-enrollment process.

Business Model Revenue share/risk share

Total University Partners 3

Representative University Partners Bellevue University, Clarion University, Western Governors University

Source: P3•EDU

Revature

HQ Reston, Virginia

URL www.revature.com

Telephone 703-570-8181

Year Founded 2003

Private

Chief Executive Srikanth Ramachandran, CEO and Founder

Lead University Contact Joe Mitchell, EVP University Partnerships

Email joe.mitchell@revature.com

Services Non-credit program provider; Career services

Description Revature, the leader in emerging technology talent, creates enterprise-level software engineers through in-person, online, and on-campus coding immersion programs. At Revature, we create pathways for college graduates to successful careers in technology.

Business Model Revenue share/risk share

Total University Partners 16

Representative University Partners University of Virginia, University of South Florida, The City University of New York, University of Missouri, Arizona State University, Florida State University, Boise State University, George Mason University, University of Maryland University College, University of North Carolina Charlotte

Source: Company

RISE A Real Estate Company

HQ Valdosta, GA

URL www.risere.com

Telephone 229-247-2077

Year Founded 1995

Private

Chief Executive Ryan Holmes, CEO

Lead University Contact Jeremy Doss, SVP

Email jeremy.doss@risere.com

Services Student housing development; Other university real estate development

Description RISE is committed to providing the highest quality services in the industry, backed by 23 years of proven experience as developers, managers, and investors of campus and multi-family assets.

Business Model Fee for service

Total University Partners 32

Representative University Partners Louisiana State University, West Virginia State University, Western Carolina University, Valdosta State University, Troy University, University of Georgia, Abraham Baldwin Agricultural College, University of South Dakota, University of North Georgia

Source: Company

Ruffalo Noel Levitz

HQ Cedar Rapids, IA

URL www.ruffalonl.com

Telephone 800-756-7483

Year Founded 1991

Private

Chief Executive Al Ruffalo, Founder

Lead University Contact Brett Frazier, Chief Customer Officer

Email brett.frazier@ruffalonl.com

Services Recruitment & enrollment services

Description Ruffalo Noel Levitz offers colleges and universities a comprehensive suite of pre-enrollment, campus, and post-campus services, including enrollment management, student retention, and fund-raising management.

Business Model Fee for service

Total University Partners 300

Representative University Partners Aurora University, Austin College, Averett University, Baylor University, Bowling Green University, Creighton University, Elmhurst College, Fresno Pacific University, Goshen College, Indiana Wesleyan University

Source: P3•EDU

The Scion Group LLC

HQ Chicago, IL

URL www.thesciongroup.com

Telephone 312-704-5100

Year Founded 1999

Private

Chief Executive Robert Bronstein, Co-Founder and President

Lead University Contact Eric Bronstein, EVP

Email ebronstein@thesciongroup.com

Services Student housing development

Description The Scion Group LLC owns, operates, and manages student housing properties, both on and off campus in North America.

Business Model Fee for service

Total University Partners 57

Representative University Partners Texas A&M University, Miami University, Rochester Institute of Technology, University of Minnesota, University of Alabama, California State, Florida State University, University of Florida, DePaul University, Marquette University

Source: P3•EDU

Servitas

HQ Irving, TX

URL www.servitas.com

Telephone 972-759-1600

Year Founded 2011

Private

Chief Executive Rafael Figueroa, CEO

Lead University Contact Angel Rivera, VP Development

Email arivera@servitas.com

Services Student housing development; Other university real estate development

Description A leader in the full spectrum of student housing and student-centric mixed-use developments, Servitas provides the highest level of service to its higher education partners.

Business Model Revenue share/risk share; fee for service

Total University Partners 30

Representative University Partners Texas A&M, Florida International University, Blinn College, Orange Coast College

Source: Company

Shorelight Education

HQ Boston, MA

URL www.shorelight.com

Telephone 857-317-2001

Year Founded 2013

Private

Chief Executive Tom Dretler, CEO and Co-Founder

Lead University Contact Basil Cleveland, EVP and Co-Founder

Email basil@shorelight.com

Services Online program management; International student recruitment/pathways provider

Description Shorelight creates life-changing experiences for international students. We build meaningful partnerships with top U.S. universities and skilled counselors. Together, we inspire students to be exceptional leaders in a globally connected world.

Business Model Revenue share/risk share

Total University Partners 16

Representative University Partners American University, Auburn University, Adelphi University, University of Kansas, Louisiana State University, University of South Carolina, University of Illinois at Chicago, University of Central Florida, University of Utah, University of the Pacific

Source: Company

Signet Real Estate Group

HQ Akron, OH

URL www.signetre.com

Telephone 330-762-9102

Year Founded 1995

Private

Chief Executive Kenneth J. Krismanth, CEO

Lead University Contact Kirsten Stuver, Director Student Housing

Email kstuver@signetre.com

Services Student housing development, Infrastructure services

Description Signet is an expert at partnering with public entities such as municipalities, government agencies, universities, and healthcare providers on privately developed real estate projects. Our comprehensive P3 development experience includes providing innovative development, finance, and ownership structures to our public clients that minimize development and finance risks.

Business Model Revenue share/risk share; fee for service

Total University Partners N/A

Representative University Partners University of New Mexico, University of Akron, University of Florida, Northeast Ohio Medical University

Source: P3•EDU

Skanska USA Building Inc.

HQ New York, NY

URL www.usa.skanska.com

Telephone 917-438-4500

Year Founded 2000

Public SKBSY

Chief Executive Richard Kennedy, CEO

Lead University Contact Daniel Maldonado, SVP, Business Development

Email Daniel.Maldonado@skanska.com

Services Student housing development; Other university real estate development; Campus infrastructure services (parking, energy, etc.)

Description Teaching and learning are the top priorities on any academic campus. At Skanska, we cultivate strong partnerships with our higher education clients and deliver sustainable, leading-edge projects that align with the unique goals of each institution.

Business Model Revenue share/risk share; fee for service

Total University Partners 178

Representative University Partners New York University, Harvard University, Eastern Oregon University, Virginia Tech, Yale University, University of Texas, Arizona State University, Florida State University, Massachusetts Institute of Technology, University of Maryland

Source: Company

Star America Infrastructure Partners

HQ Roslyn, NY

URL www.starinfrapartners.com

Telephone 516-882-4100

Year Founded 2011

Private

Chief Executive William Marino, CEO

Lead University Contact Mark Melson, COO

Email mmelson@starinfrapartners.com

Services Student housing development; Other university real estate development; Campus infrastructure services (parking, energy, etc.)

Description Star America Infrastructure Partners is the leading developer of new infrastructure solutions.

Business Model Revenue share/risk share

Total University Partners 5

Representative University Partners N/A

Source: Company

Study Group

HQ New York City, NY

URL www.studygroup.com

Telephone 817-713-0989

Year Founded 1994

Private

Chief Executive David Leigh, CEO

Lead University Contact Emily Williams Knight, Ed.D., MD North America

Email ewilliamsknight@studygroup.com

Services International student recruitment/pathways provider

Description Study Group is a global leader in preparing students for international academic success and rewarding careers through the creation and management of pathway programs across more than 40 university partners.

Business Model Revenue share/risk share

Total University Partners 47

Representative University Partners University of Vermont, Baylor University, Australia National University, Durham University, Lancaster University, University of Leeds, Surrey University, University of Sydney, West Virginia University

Source: Company

Symplicity

HQ Arlington, VA

URL www.symplicity.com

Telephone 703-351-0200

Year Founded 1996

Private

Chief Executive Matthew Small, President and CEO

Lead University Contact Justin Tan, COO

Email jtan@symplicity.com

Services Career services

Description Symplicity helps institutions connect students with the people, knowledge, and experiences they need to launch successful careers.

Business Model Fee for service

Total University Partners 1,200

Representative University Partners Yale University, Boston University, University of Toronto, Cornell University, Duke University, The University of Texas at Austin, Cleveland-Marshall College of Law

Source: P3•EDU

Synergis Education, Inc.

HQ Mesa, AZ

URL ww2.synergiseducation.com

Telephone 480-656-8307

Year Founded 2011

Private Bertelsmann and University Ventures, Mitsui, University of Texas Investment Management Company

Chief Executive Norm Allgood, CEO

Lead University Contact John Donohue, Chief Academic and Development Officer

Email jdonohue@synergiseducation.com

Services Online program management

Description Synergis Education provides online program management, including marketing and enrollment, academic services with emphasis on instructional design, student retention, and systems integration.

Business Model Revenue share/risk share; fee for service

Total University Partners 4

Representative University Partners Gwynedd Mercy University, Samuel Merritt University

Source Company

Trilogy Education Services

HQ New York, NY

URL www.trilogyed.com

Telephone 917-757-0826

Year Founded 2015

Private

Chief Executive Dan Sommer, Founder and CEO

Lead University Contact Adam Spivak, VP Business Development

Email aspivak@trilogyed.com

Services Non-credit program provider

Description Trilogy is a continuing education program manager of skills-based training programs for leading universities. Universities leverage Trilogy's platform, services, and community to prepare learners for the digital economy.

Business Model Revenue share/risk share

Total University Partners 30

Representative University Partners University of California - Berkeley Extension, Northwestern School of Professional Studies, Rutgers Division of Continuing Studies

Source: Company

Trinitas

HQ Lafayette, IN

URL www.trinitas.ventures

Telephone 765-464-2800

Year Founded 2002

Private

Chief Executive Loren P. King, CEO

Lead University Contact Mark Baumgarten, EVP, Campus Partnerships

Email EVPropertyManagement@trinitas.ventures

Services Student housing development; Other university real estate development

Description Trinitas partners with higher education institutions to deliver real estate solutions through public-private partnership platforms. We specialize in development opportunities on or adjacent to campuses for all residential and commercial use types.

Business Model Revenue share/risk share; fee for service

Total University Partners N/A

Representative University Partners Kennesaw State, University of Texas at Dallas, University of Indianapolis

Source: P3•EDU

University Student Living

HQ Marlton, NJ

URL www.universitystudentliving.com

Telephone 856-596-0500

Year Founded 2011

Private

Chief Executive Joe Coyle, President

Lead University Contact Ned Williams, SVP

Email ned.williams@tmo.com

Services Student housing development; Other university real estate development; Campus infrastructure services (parking, energy, etc.)

Description USL is a national owner, operator, and developer of student housing. We have expertise in both on-campus student housing public private partnerships, as well as off-campus student, market rate, and mixed-use projects.

Business Model Revenue share/risk share; fee for service

Total University Partners 10

Representative University Partners University of California - Davis, Rowan University, Kean University, University of Minnesota, Boston University, Louisiana State University Health, Rutgers University - Camden

Source: Company

Veolia North America, LLC

HQ Chicago, IL

URL www.veoliawaterna.com

Telephone 312-552-2800

Year Founded 1984

Private

Chief Executive William DiCroce, CEO

Lead University Contact Peter Tellegen, SVP Strategy and Corporate Development

Email peter.tellegen@veolia.com

Services Campus infrastructure services (parking, energy, etc.)

Description Veolia North America, LLC designs, develops, and provides water, waste, and energy management solutions for the development of municipalities and industries in North America.

Business Model Fee for service

Total University Partners N/A

Representative University Partners University of East Anglia, University of Minnesota

Source: P3•EDU

Watermark

HQ New York, NY

URL www.watermarkinsights.com

Telephone 212-868-2700

Year Founded 1998

Private

Chief Executive Kevin Michielsen

Lead University Contact Webster Thompson, EVP Business Development

Email webster@watermarkinsights.com

Services Data analytics

Description Watermark's educational intelligence systems empower administrators, faculty, and students to engage in meaningful assessment practices that result in better data and insights to help drive improvement.

Business Model Fee for service

Total University Partners 1,100

Representative University Partners University of Arizona, Rochester Institute of Technology, Syracuse University, St. Cloud State University, South Piedmont Community College, California State University, Central Connecticut State University, The George Washington University, Governors State University, Texas State University

Source: Company

Wiley Education Services

HQ Orlando, FL

URL www.edservices.wiley.com

Telephone 407-618-5400

Year Founded 1996

Public NYSE: JW.A

Chief Executive Brian Napack, President & CEO

Lead University Contact Gene Murray, VP New Partner Development

Email gmurray@wiley.com

Services Online program management; International student recruitment/pathways provider

Description Wiley Education Services is a leading provider of comprehensive, tailored services to universities around the world. We help learners achieve success and our partners further their vision in an increasingly competitive and dynamic market.

Business Model Revenue share/risk share; fee for service

Total University Partners 39

Representative University Partners American University, Benedictine University, George Mason University, Purdue University, Sacred Heart University, Saint Mary University, University of Birmingham, Vlerick Business School

Source: Company

YellowBrick

HQ New York, NY

URL www.yellowbrick.co

Telephone 917-512-4630

Year Founded 2014

Private University Ventures; Entangled Ventures

Chief Executive Rob Kingyens, CEO

Lead University Contact Chris Edwards, EVP Partnerships

Email chris@yellowbrick.co

Services Non-credit program provider

Description Working with leading universities, YellowBrick creates learning experiences that help tomorrow's leaders discover and pursue academic and career paths in growing, global industries that align to their passions, including fashion, sports, beauty, music, and media.

Business Model Revenue share/risk share

Total University Partners 5

Representative University Partners Columbia University, The New School, Parsons School of Design, Fashion Institute of Technology

Source: Company

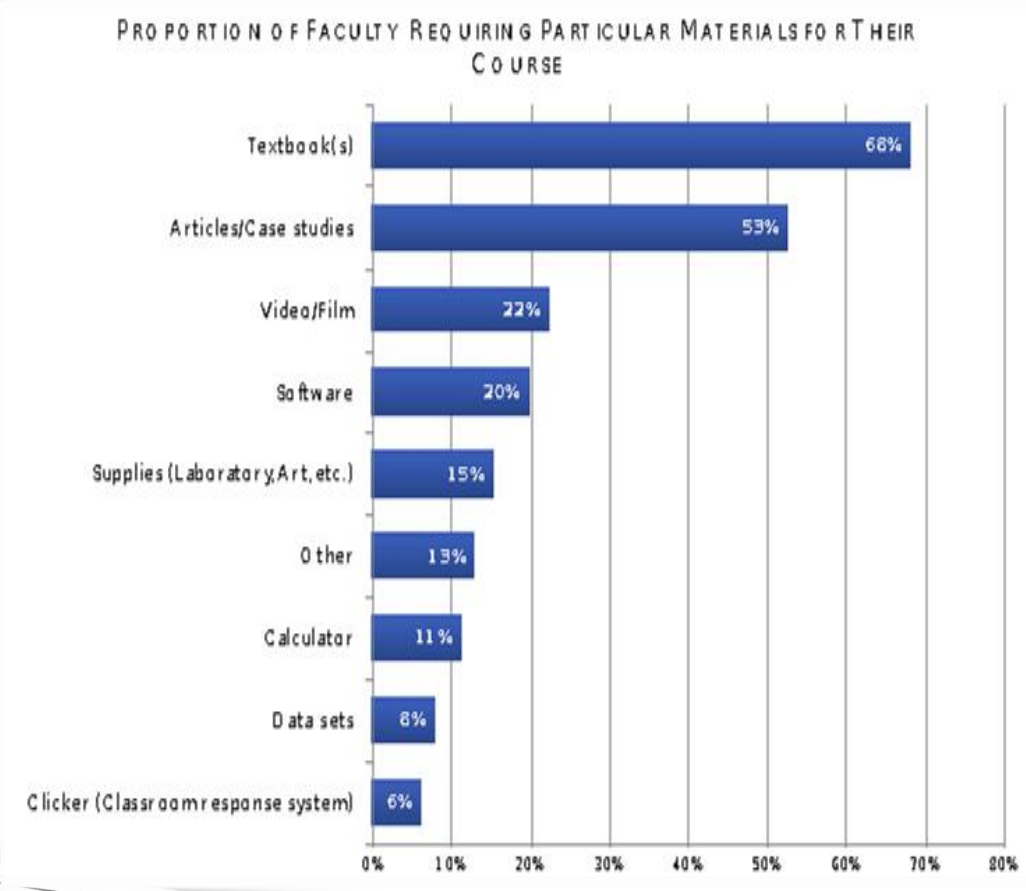
www.p3edu.com

Affordable Course Content Briefing

VCU Board of Visitors
Academic and Health Affairs Committee

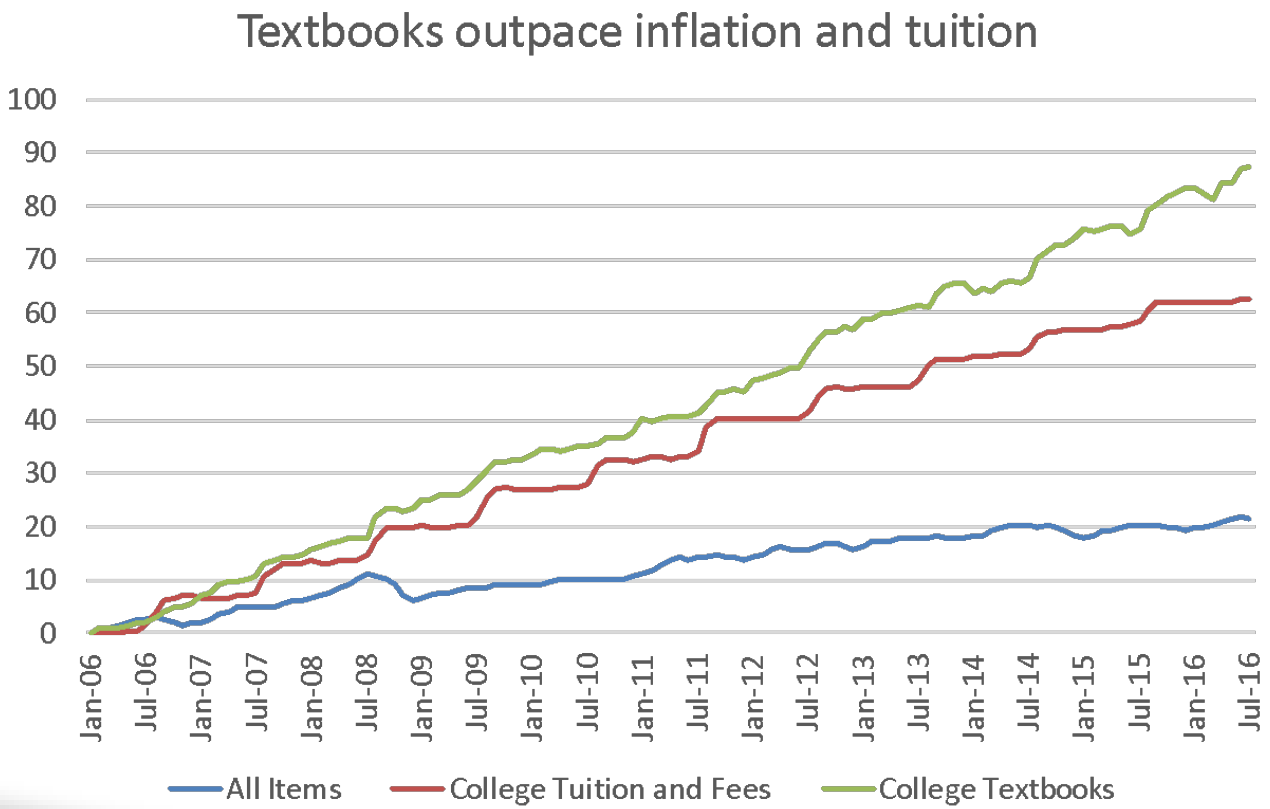
September 14, 2018

Majority of faculty members require textbooks in classes



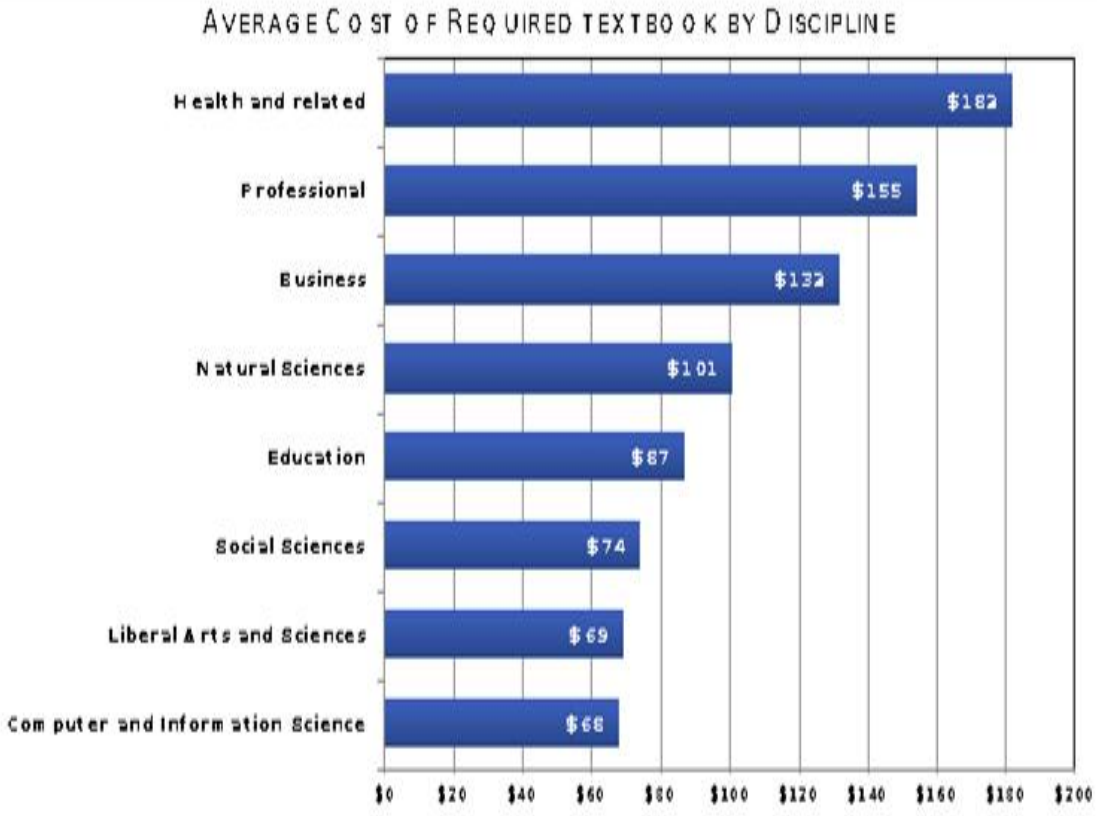
Opening The Textbook: Educational Resources in U.S. Higher Education 2017

Textbook costs are accelerating more than other costs



Bureau of Labor Statistics http://www.bls.gov/cpi/

Textbook costs particularly affect STEM and professional education



Opening The Textbook: Educational Resources in U.S. Higher Education 2017

Textbook costs are significant for students at VCU

The average student should budget

$1,250

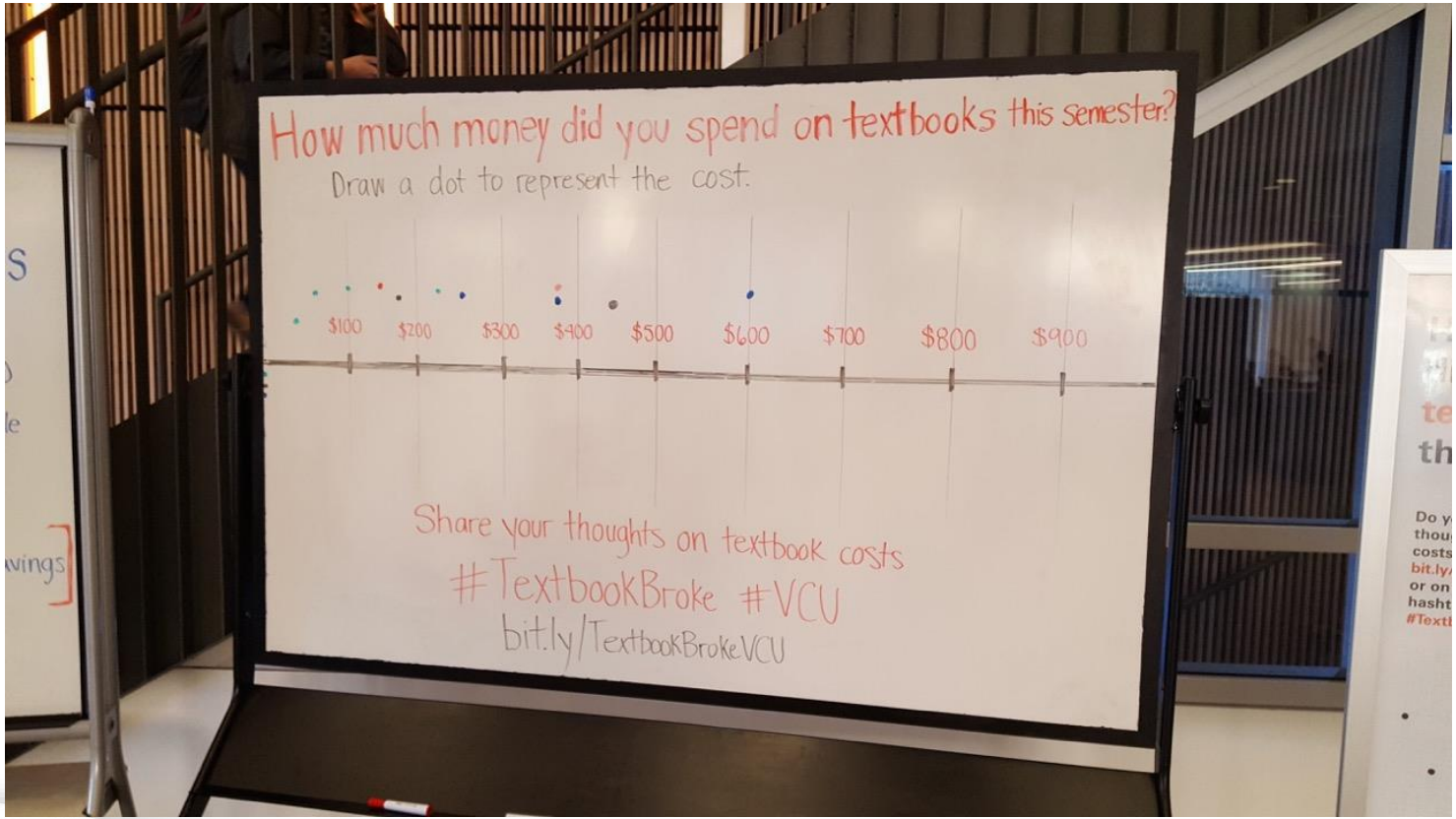
for books and supplies in 2017-18.

VCU actual cost = $1,493

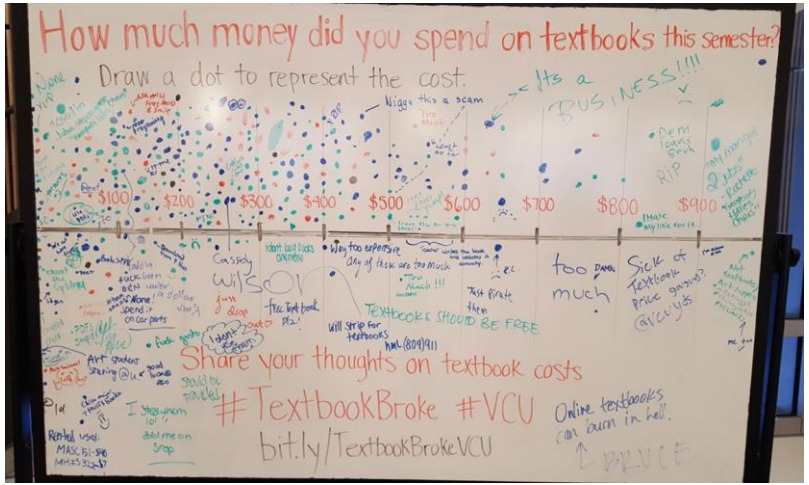
https://trends.collegeboard.org/college-pricing/figures-tables/average-estimated-undergraduate-budgets-2017-18

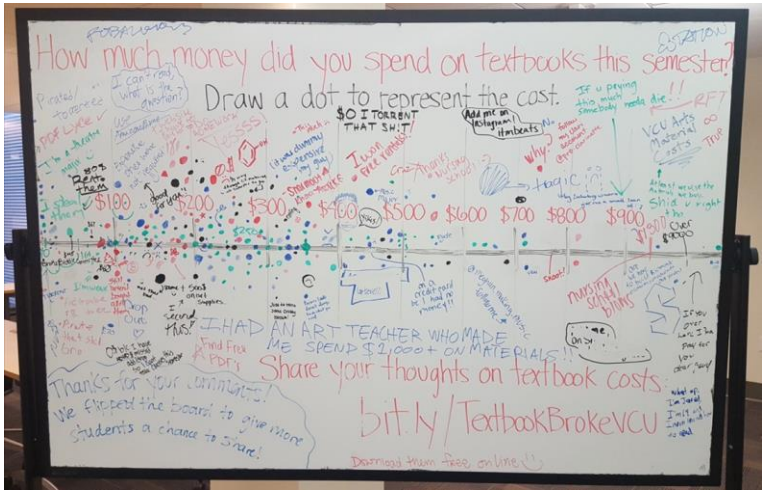
VCU

Textbook costs for students at VCU: their own testimony

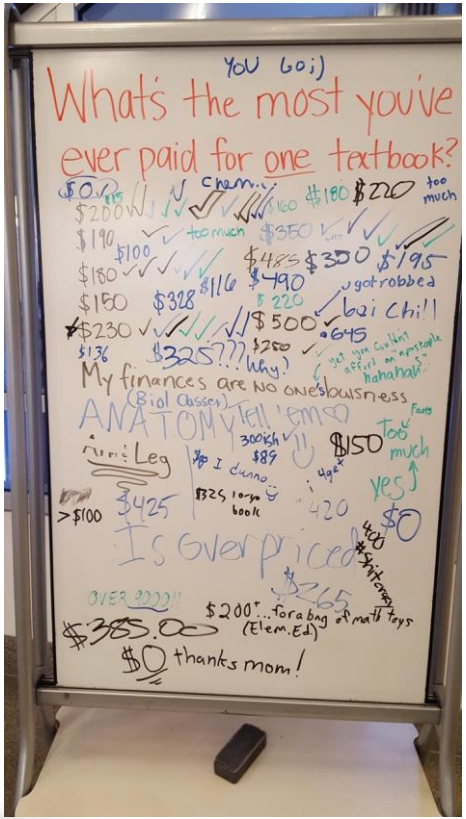


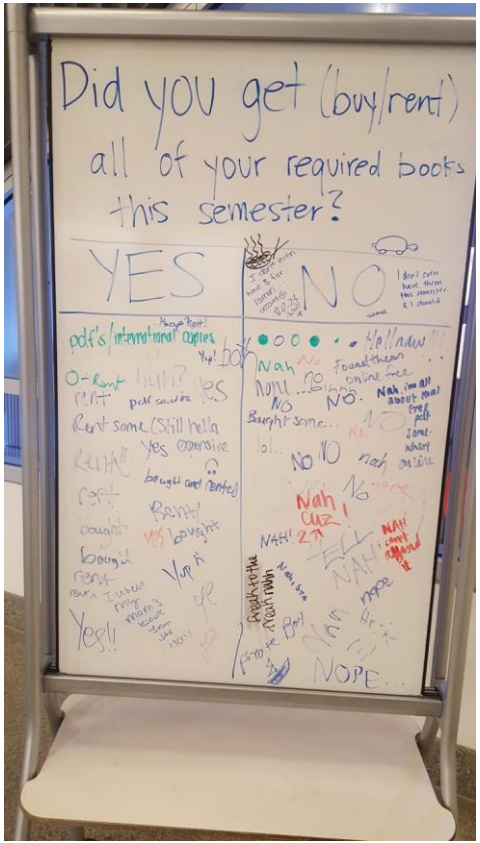
Free and low-cost course materials for students at VCU: status





Textbook costs for students at VCU: their own testimony





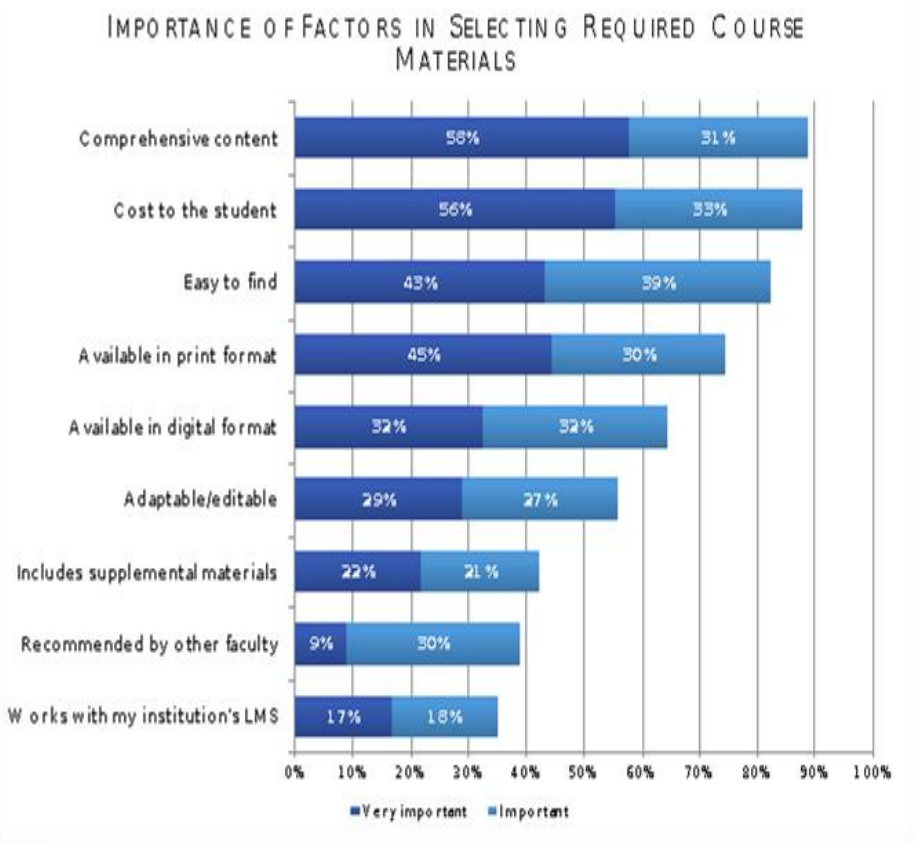
Textbook costs impact student behavior and student success

In your academic career, has the cost of required textbooks caused you to:

66.6%	Not purchase required textbook
47.6%	Take fewer courses
45.5%	Not register for a specific course
37.6%	Earn a poor grade
26.1%	Drop a course
20.7%	Withdraw from a course
19.8%	Fail a course

http://www.openaccesstextbooks.org/pdf/2016_Florida_Student_Textbook_Survey.pdf

Faculty consider textbook costs important



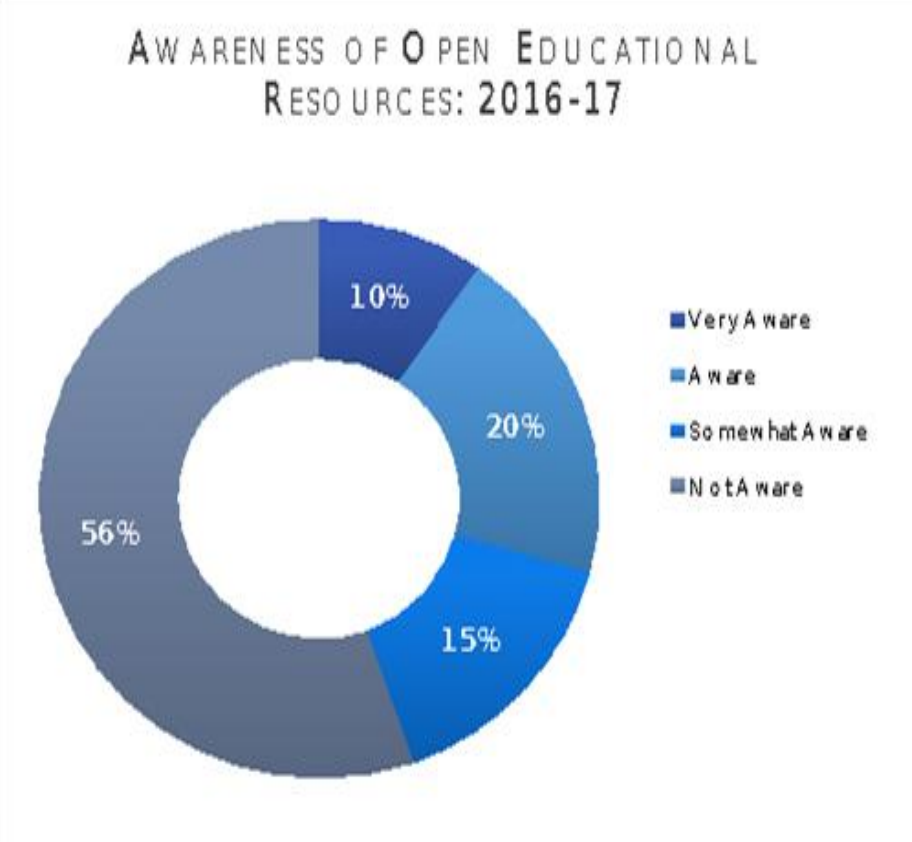
Opening The Textbook: Educational Resources in U.S. Higher Education 2017

Affordable Course Content can help

Affordable course content (ACC): curriculum materials required for a class that are low cost or no cost. Includes materials that are library-licensed or available at low additional cost to students.

Open educational resources (OER): a type of affordable content. OER is any type or format of content or software that is in the public domain or licensed in a way that allows free use, modification, and redistribution, so that faculty can freely choose and reuse materials that best ensure student success.

Faculty awareness of ACC is a major obstacle



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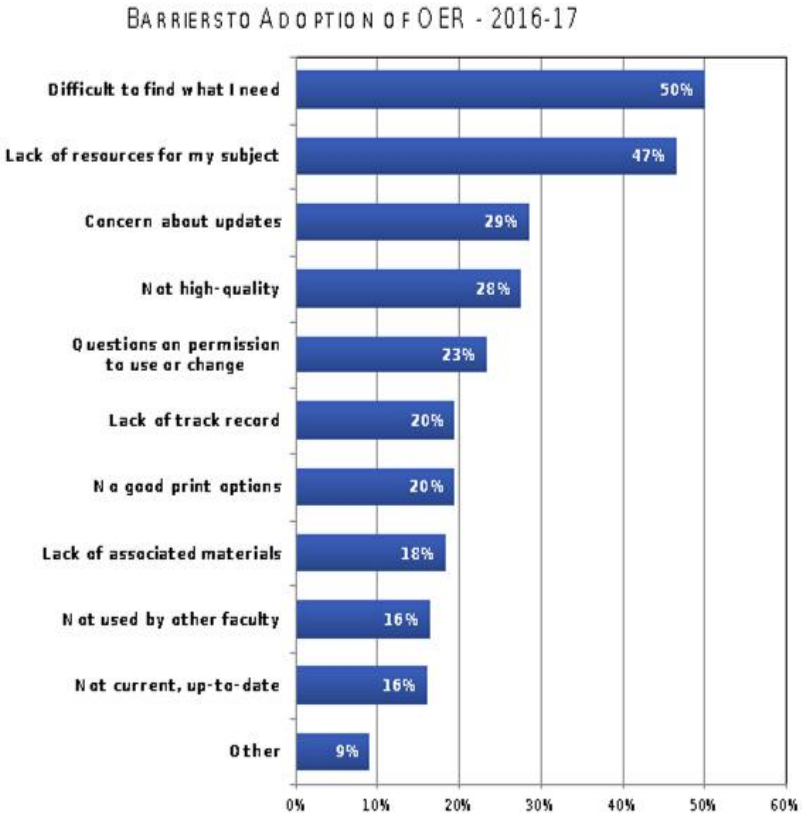
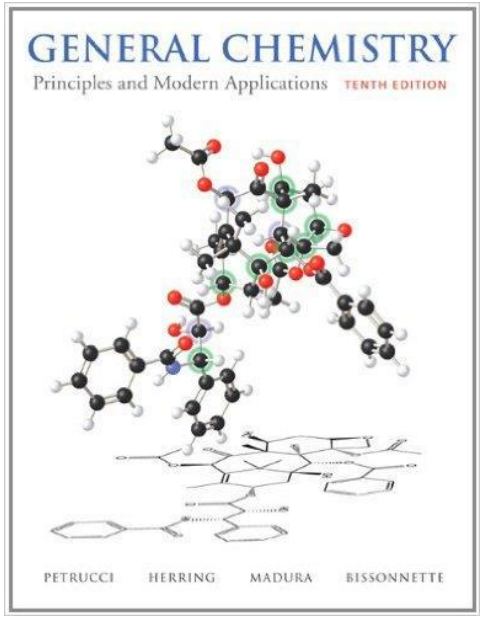
Finding available, quality ACC materials is another



Opening The Textbook: Educational Resources in U.S. Higher Education 2017

But when ACC is used, it's just as good as commercial materials

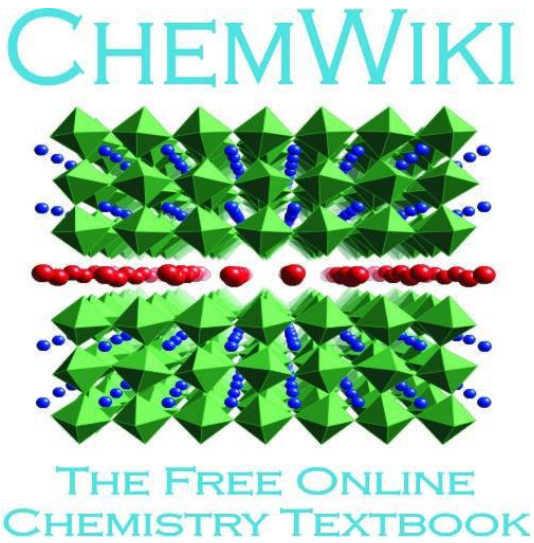


448 students

$290.05

Total cost > $130,000

- Same semester
- Same teacher
- Same lecture
- Same homework
- Same TAs
- Same exams
- Back-to-back classes
- Pre-test
- NO statistically significant difference in course outcomes.



478 students

FREE

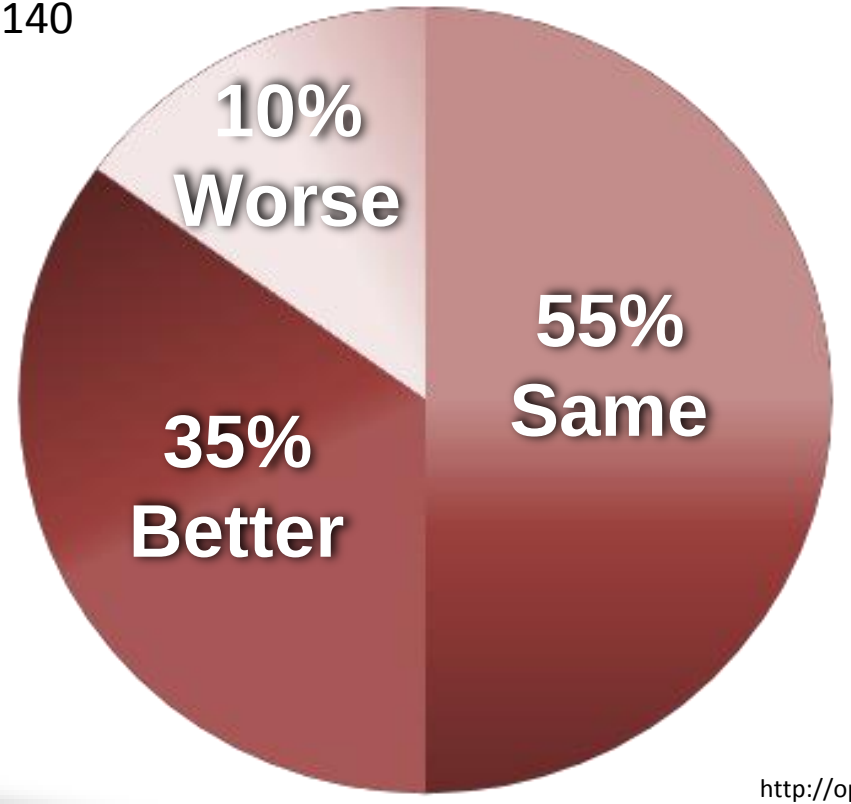
Total cost = $0.00

VCU

Assessing the Impact and Efficacy of the Open-Access ChemWIki Textbook Project, Educause Learning Executive Brief, January 2015

Students and faculty simply don’t perceive a downside to ACC

In 20 peer-review studies about perception of ACC quality, covering 16,140 professors and students, study participants judged ACC materials compared to commercially-provided materials as:



http://openedgroup.org/

So What Are We Doing At VCU To Expand The Use Of ACC??

Free/low-cost course materials for students at VCU: **already in progress**

$1,004,743	Student textbook savings in 2017-18
9,130	Students who saved on textbook costs
39	Faculty who have participated in open textbook creation workshops
34	Faculty who received funding to develop free textbooks through a partnership of VCU Libraries, CTLE, and the ALT Lab
UNIV 111/112/200 Math 151 BIOL 151	Examples of classes where students used free course materials
2018-19	VCU Libraries will purchase unlimited-use digital versions of select course materials for some high-enrollment
	VCU Libraries has created a new position focused exclusively on accelerating adoption of free and low-cost course materials by faculty

VCU

Free/low-cost course materials for students at VCU: **next steps**

- $600,000 allocated by General Assembly beginning July 2018 to Virginia's academic library consortium (VIVA) will fund expanded use of free and low-cost materials:
  - Open Textbook Initiative training and support for faculty adoption of ACC materials.
  - Powerful web portal to assist faculty in finding OER, ebooks already available through the VCU Libraries, and other ebooks and free course materials…and to allow them to ask librarians to order certain ebooks for their courses as well. This will make it much easier to find ACC materials.
  - Fund course redesign work by faculty to switch from commercial to ACC materials
- General Assembly has mandated new language for Virginia university textbook policies that specifically encourages adoption of free and low-cost course materials (passed March 2018 with bipartisan support)
- Dean of Libraries was part of leadership team that advocated for these measures, and provided testimony to relevant General Assembly committees and staff

Free/low-cost course materials for students at VCU: **status**

- New full-time librarian at VCU focused exclusively on accelerating adoption of free and low-cost course materials by faculty.
- The VCU Libraries will purchase unlimited-use digital versions of materials and textbooks for certain high-enrollment courses. This will eliminate student purchases of materials for those courses, delivering significant overall savings to the university student community.
- VCU Libraries, working other VCU campus partners, has awarded $38,717 in grants for a second cohort of VCU faculty in its Affordable Course Content Awards program. These faculty will redesign their courses to adopt, adapt, or create free and low-cost course content. The 2017-18 cohort now are using their redesigned courses to save students textbook costs in 2018-19.
- New web resources to help faculty learn about and adopt affordable course content, including a web page devoted to ACC and a research guide on ACC and OER.

VCU

Online guidance from VCU Libraries

- Getting-started guide to affordable course content

  https://guides.library.vcu.edu/oer/introduction

- Introduction to affordable course content

  https://www.library.vcu.edu/services/faculty/course-content/

- News about successful and ongoing initiatives

  https://www.library.vcu.edu/about/news/2017/seven-faculty-projects-selected-for-vcus-inaugural-affordable-course-content-awards-.html

  https://www.library.vcu.edu/about/news/2018/diverse-faculty-projects-receive-affordable-course-content-grants-for-2018-19.html

VCU

Questions? Want to learn more?

John Ulmschneider
Dean of Libraries and University Librarian
jeulmsch@vcu.edu
804-828-1105

Opening the Textbook:

Educational Resources in U.S. Higher Education, 2017

Julia E. Seaman and Jeff Seaman

BABSON Survey Research Group

Opening the Textbook:

Educational Resources in U.S. Higher Education, 2017

Julia E. Seaman, Ph.D.

Research Director, Babson Survey Research Group

Jeff Seaman, Ph.D.

Director, Babson Survey Research Group

2017

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Cover design is by Mark Favazza (www.favazza.com).

ACKNOWLEDGMENTS

This research would not be possible without the assistance of a number of organizations. First, we wish to thank the William and Flora Hewlett Foundation for their considerable help in framing the project, as well as their support of the data collection, analysis, and report creation. Their background and knowledge of open educational resources and contacts within the OER community was invaluable in defining the focus of the study. We also wish to thank the Global Healthy Living Foundation for their support in the administration of the Hewlett Foundation grant.

This report presents results derived from a nationally representative sample of higher education faculty. In addition to providing responses to a wide range of questions, these faculty also provided thousands of comments and observations on the state of teaching and learning. Each section of this report includes a selection of faculty quotes relevant to that topic. These quotes are presented as close to the original as possible, with the only changes being the correction of typos and the removal of any personally identifying information.

We wish to thank the thousands of faculty members who took the time to provide us with these detailed and thoughtful responses. We understand that you are very busy people, and appreciate your effort. This report would not be possible without you, and we hope that you find it useful.

Julia E. Seaman
Jeff Seaman
Babson Survey Research Group
2017

Executive Summary

Responses from over 2,700 U.S. faculty paint both a "Good news" and a "Bad news" picture for the role of open educational resources (OER) in U.S. higher education. Both sides of the equation are clearly evident in the responses from higher education teaching faculty who had recently selected required curricula materials (primarily textbooks) their course.

To begin with the bad news: the levels of awareness of OER, the licensing tied to it, and overall adoption of OER materials, remains low. Only 10% of faculty reported that they were "Very aware" of open educational resources, with 20% saying that they were "Aware." Awareness of Creative Commons licensing also remains low, with only 19% of faculty reporting that they are "Very aware." Measures that combine both dimensions are even lower, with 8% classified as "Very aware" and 17% as "Aware" on a joint measure of OER and of Creative Commons licensing awareness.

Faculty continue to report significant barriers to OER adoption. The most serious issues continue to be the effort needed to find and evaluate suitable material. Nearly one-half of all faculty report that "there are not enough resources for my subject" (47%), and it is "too hard to find what I need" (50%). In light of this, the reported level of adoption of open-licensed textbooks (defined as either public domain or Creative Commons) of only 9% is not a surprise. Many faculty members also voice concerns about the long-term viability of open educational resources, and worry about who will keep the materials current.

That said, there is also considerable cause for optimism among those who support OER. The awareness and adoption levels may be low, but they also show steady year-to-year improvements. For example, the open-licensed textbook adoption rate of 9% for 2016-17 represents a substantial increase over the rate of 5% for 2015-16. Likewise, awareness of both Creative Commons licensing and OER itself has increased each year.

OER also addresses a key concern of many faculty: the cost of materials. A majority of faculty classify cost as "Very important" for their selection of required course materials. Faculty report that their required textbooks have an average price of $97, and only 22% say that they are "Very satisfied" with that cost. It is therefore not surprising that most faculty report that not all of their students buy all the required texts for their class, with only a third saying that 90% or more of their students have purchased the required textbook.

A particular area of OER success is among large enrollment introductory-level courses. These courses touch the largest numbers of students, are often taught in multiple sections (66%), and are typically required for some subset of students (79%). Faculty teaching these courses were presented with a list of the most commonly used commercial textbooks (up to twelve) for their specific course, along with an open text alternative from OpenStax, a non-profit OER publisher based out of Rice University.

The rate of adoption of OpenStax textbooks among faculty teaching large enrollment courses is now at 16.5%, a rate which rivals that of most commercial textbooks. This is a substantial increase over the rate observed last year (10.8%). Users of OpenStax textbooks also had levels of satisfaction equal to their peers teaching introductory level courses who had selected commercial textbooks. These adoptions address concerns about cost as well: faculty who did not select an OpenStax textbook reported an average cost of $125 for the required textbook, while those who did select an OpenStax text reported an average cost of $31.

The OpenStax results among large enrollment introductory-level courses shows that OER can be successful. OpenStax has been able to reach penetration levels equal to most of their commercial competitors, with equal levels of faculty satisfaction, in a very short time. This comes amid continuing concerns on the part of faculty about the limited nature of OER materials, particularly the lack of associated materials like tests, quizzes, and homework assignments, that are typically provided by commercial alternatives.

The OpenStax model has also successfully addressed another faculty concern: the desire for print over digital. Faculty continue to report that their students prefer printed materials, and OpenStax provides this alternative in addition to a freely distributed digital version.

The results show that when you deal directly with the top faculty concerns of finding and evaluating potential OER options, OER can be as successful as commercial alternatives. OpenStax has done this by using an adoption and distribution model that is very similar to that of commercial publishers, with nicely formatted printed copies available for students in their normal bookstore.

One lesson from the OpenStax results is that you need to reach individual faculty members in order to be successful. Two-thirds (67%) of all faculty reported that they were the sole decision maker for the new or revised course material, while an additional 22% of faculty engaged in a group decision. Faculty have a well-proven model for selecting their teaching materials, and any new player will have to be successful within that model.

OpenStax's success is not complete, however. Initial adoption has primarily been among faculty who are willing to embrace new teaching styles, have greater willingness to move away from the traditional lecture style for teaching, and have a higher appreciation for digital materials. It is unclear if faculty with more traditional approaches, or greater reliance on associated materials, will follow in the same numbers.

It is also not clear if the OpenStax model will work outside of large enrollment classes. A mature OER distribution channel stocked with well-developed, high-quality options can address two of the most common factors cited by faculty when selecting educational resources: the need for comprehensive content and resources that are easy to find. OER has a district advantage for the remaining top concern: the cost to the student. Questions remain, however. Will there be sufficient adoption in smaller classes to support the production and updating of OER textbook alternatives? Is there enough volume in this market to support other OER publishers?

DEFINITIONS

This study is designed to explore the process by which faculty members select the educational materials that they employ in their courses. The most common of these is the required textbook - faculty members typically select one or more books that all students are required to use through the duration of the course. Faculty also employ a wide range of other materials: some optional, others required for all students. This study only deals with required materials, using the following definition:

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

In addition to examining the overall resource selection process, this study also explores the particular class of materials classified as open educational resources (OER). The Hewlett Foundation defines OER as:

> *OER are teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use and re-purposing by others. Open educational resources include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge.*[1]

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

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

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

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

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

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

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

An intermediate stage between traditional copyright, with all rights reserved, and public domain, where no rights are reserved, is provided by Creative Commons licenses. A Creative Commons license is not an alternative to copyright, but rather a modification of the traditional copyright license that grants some rights to the public.

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

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

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

STUDY RESULTS:

Selecting Educational Resources

"I have deliberately developed the policy for my courses that students will have no textbooks or any other materials that must be purchased. All reading materials are digital and accessed online." (Full-time Social Sciences Faculty)

"As a literature professor, I require my students to bring their literary texts to every class. I also require that they have actual physical books (unless a student has an ADA accommodation). One reason is that recent cognitive research has shown that student understanding and retention is better when reading words on paper than on screens. I have also found that even the most tech-savvy students can navigate a book more quickly than they can an electronic text." (Full-time English Language and Literature Faculty)

"I teach a sophomore level linear algebra course for which I require/recommend a textbook. But I don't care which edition they use, so the cost can vary from $0, for an online pdf of an earlier version they might find to $142 for a new copy of the latest edition." (Full-time Computer and Information Science Faculty)

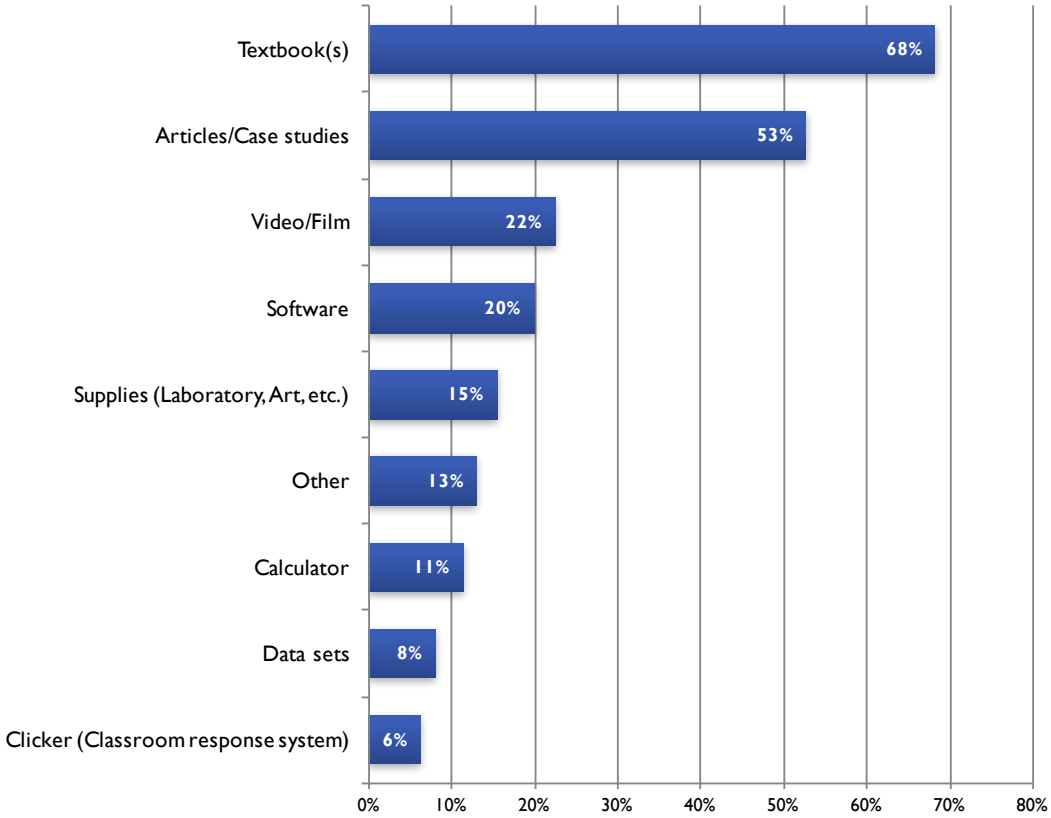
"My main concern with resources for my classroom is with student use. I find that students 1) do not absorb information when they read and 2) resist doing assigned reading and 3) a small minority of students actually purchases required texts, even if there are assignments that require the text." (Full-time Professional Faculty)

Faculty may recommend or require particular materials for the students in their courses, ranging from specific editions to free resources to multiple types of materials. This study focuses on those that are required, defined as all items "listed in the course syllabus as required for all students, either acquired on their own or provided to all students through a materials fee."

The most common item by far that faculty list on their syllabus as "required" is one or more textbooks, with 68% of all faculty reporting that they have a required textbook. Other print materials (e.g., articles and case studies) are required by a majority of faculty. All other types of materials are required by less than one-quarter of faculty. Software (22%) and video and film (20%) are required by more faculty than supplies (15%), calculators (11%), data sets (8%), clicker systems (6%), or other materials (13%).

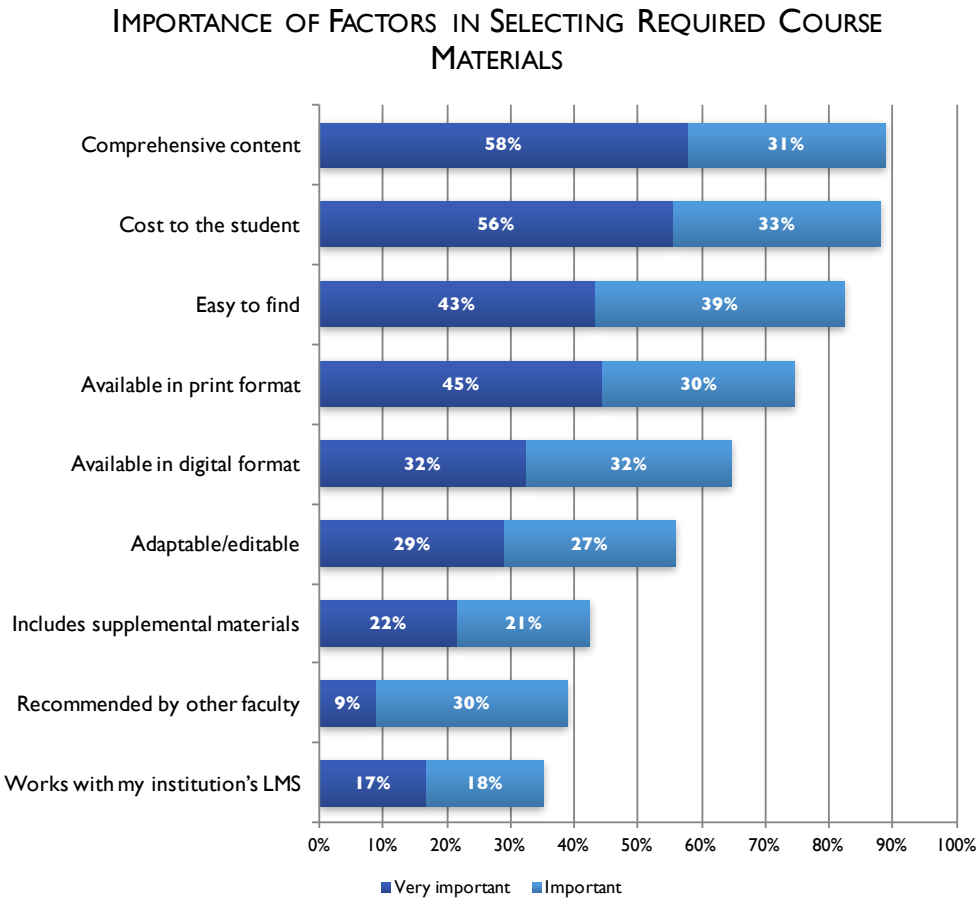
Some faculty also list items which they recommend, but do not require students to purchase. The most common of these are articles and case studies, which are recommended by 20% of faculty. There are also recommended textbooks (17%) and videos/films (17%), as well as recommended software (11%). Only a single digit percentage of faculty recommend other types of materials, like supplies, data sets, and clickers.

PROPORTION OF FACULTY REQUIRING PARTICULAR MATERIALS FOR THEIR COURSE



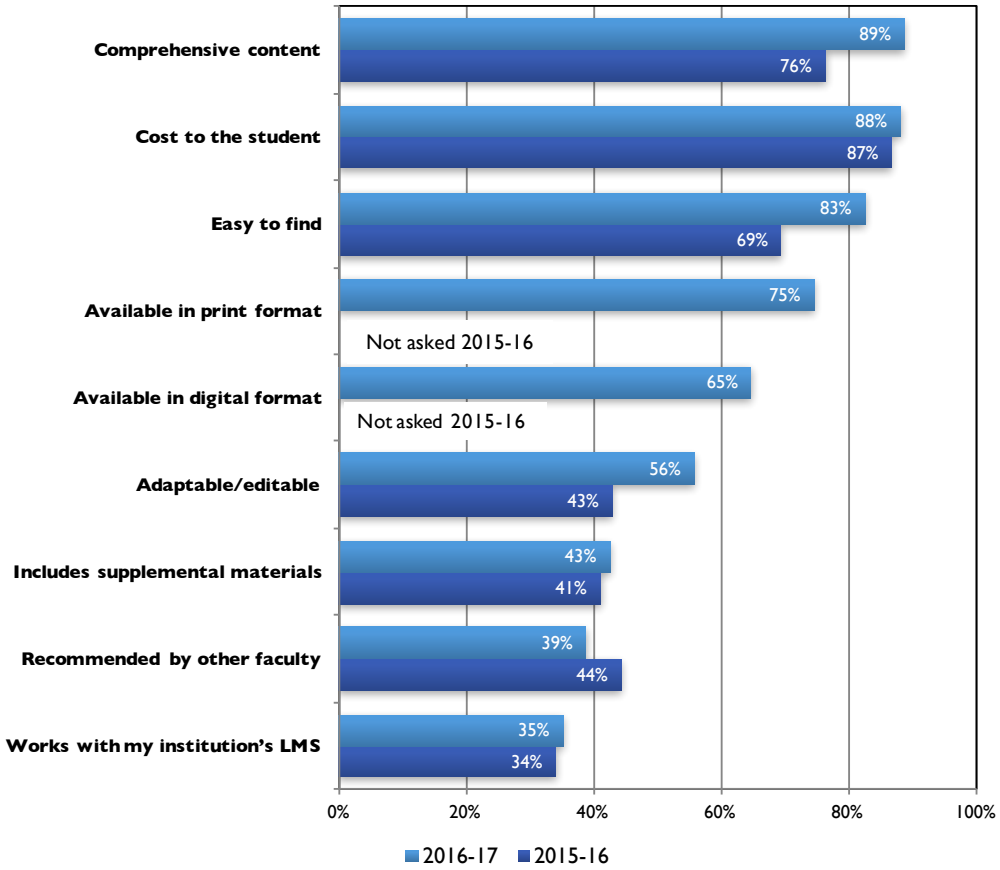
Faculty were asked which factors were most important when they selected these required materials. Two factors were mentioned as being "Very important" by a majority of faculty members: comprehensive content and cost to the student. The most-cited factor was the comprehensiveness of the resource (58% reporting it as "Very important" and 31% as "Important"). This was followed by cost to the student: over one-half (56%) of faculty said cost was "Very important," and an additional 33% reported that cost was "Important." These two factors were followed by how easy it was to find the resource (43% reported that it was "Very important" and 39% as "Important"). The only other factor with a similar "Very important" rating was that the material be available in print format (45% "Very important" and 30% as "Important").

The availability of resources in digital format was seen as less important than print, but still had nearly two-thirds of faculty saying it was "Very important" or "Important". A somewhat smaller number of faculty listed material that was adaptable or editable, with the remaining factors mentioned by less than one half of responding faculty members. Recommendation by other faculty members had the lowest proportion of faculty rating as "Very important" (9%), a rate far lower than for any other factor.



The relative ranking of the importance of the different factors in the selection of required course materials has changed only slightly from the results of last year's survey. The same top three factors are seen as much more important than other aspects of the material for both time periods. The proportion of faculty rating cost as important has remained steady, while there has been an increase among those who rate comprehensiveness of the content as important for their choice, moving it to the number one spot.

IMPORTANCE OF FACTORS IN SELECTING REQUIRED COURSE MATERIALS 2015-16 AND 2016-17



There has also been an increase in the proportion of faculty reporting that materials being easy to find is important. It remains the third-most mentioned factor, ahead of two newly included factors. Additional growth was seen for a preference that materials be adaptable or editable, though it remains the sixth-most mentioned factor. Faculty comments in last year's survey displayed a considerable concern about the way in which their materials were distributed, in particular if they were available in print or digital form. Some faculty were enthusiastic about digital distribution, while many others reported that their students had a preference for printed materials. While the faculty responses do show a greater preference for print than for digital, this is not an either/or choice. Many faculty say that they want their materials to be available in both formats.

Cost to the Student

"About two years ago, I attended a workshop on open access textbooks that really opened my eyes to the cost of course materials for students. I am now reworking all of my courses to limit the cost to students. I had no idea how many students didn't buy textbooks because of the cost." (Full-time Social Sciences Faculty)

"I think the use of OER are the most responsible thing we can do as educators in the face of the rising costs of higher education. Exploration of the OER and their potential use to enhance student engagement and learning are the future of higher education, it's time to get on board." (Full-time Natural Sciences Faculty)

"The high cost of educational resources and textbooks are a barrier to many of our students. It is unclear why the costs are so high, and what is driving the costs." (Full-time Computer and Information Science Faculty)

"It is most urgent that educators be made aware of the day to day impact that the cost of textbooks has on our students, in terms of everyday life as well as in terms of success and retention." (Full-time Social Sciences Faculty)

"Over the past few years my community college encouraged adopting OER materials. We now have many no- and low-cost courses. Our students report how helpful this cost savings is for them." (Full-time Liberal Arts and Sciences Faculty)

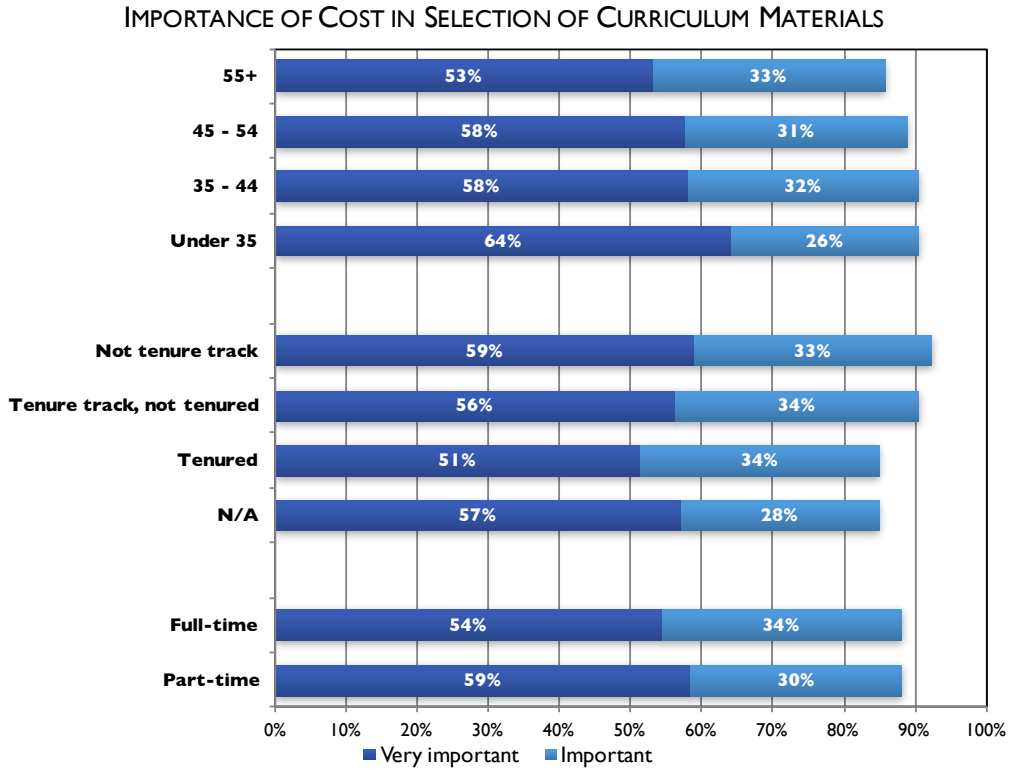
"Textbooks are becoming cost prohibitive. That being said, I think students learn better when they have a printed resource at the ready when they are learning. Anything that educators can do to bring the costs of education toward a more reasonable amount should be a priority." (Full-time Computer and Information Science Faculty)

"Textbooks have become excessive in cost, especially the popular ones. The students complain about the cost as well as extras like clickers." (Full-time Natural Sciences Faculty)

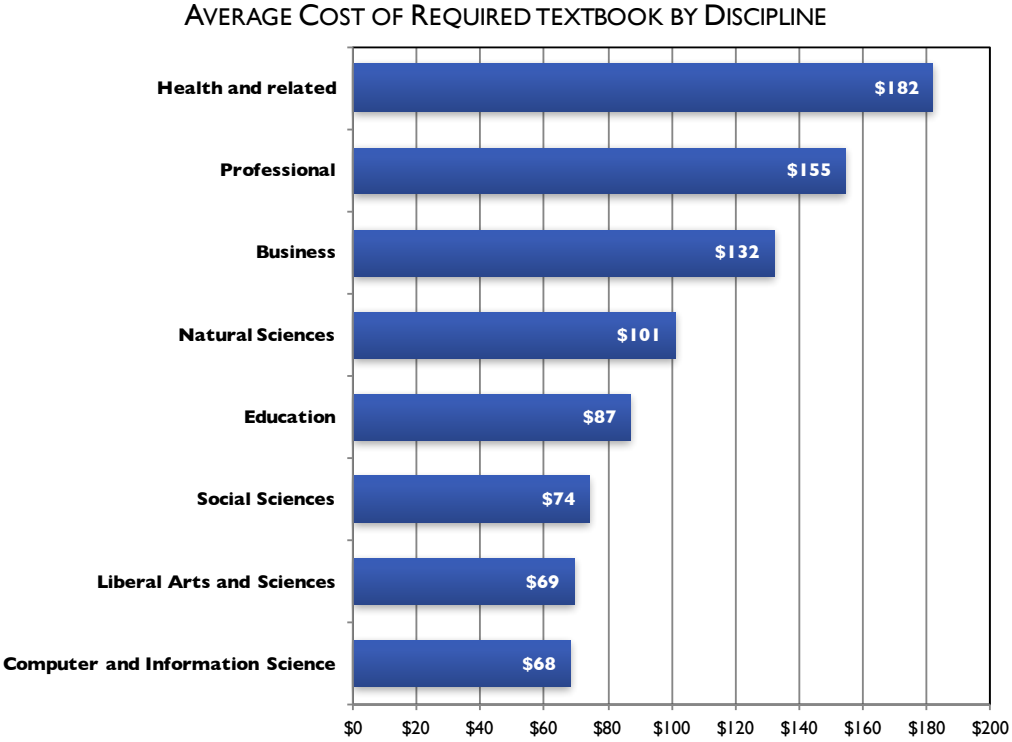
"The cost of text, preprinted materials is of utmost concern to me." (Part-time Liberal Arts and Sciences Faculty)

"While a well-written and illustrated text can be an invaluable resource for students, the current high costs of texts prohibits many students from purchasing them. OER are wonderful, but not always reliable as it may be that no one is responsible for correcting errors or updating the content." (Part-time Natural Sciences Faculty)

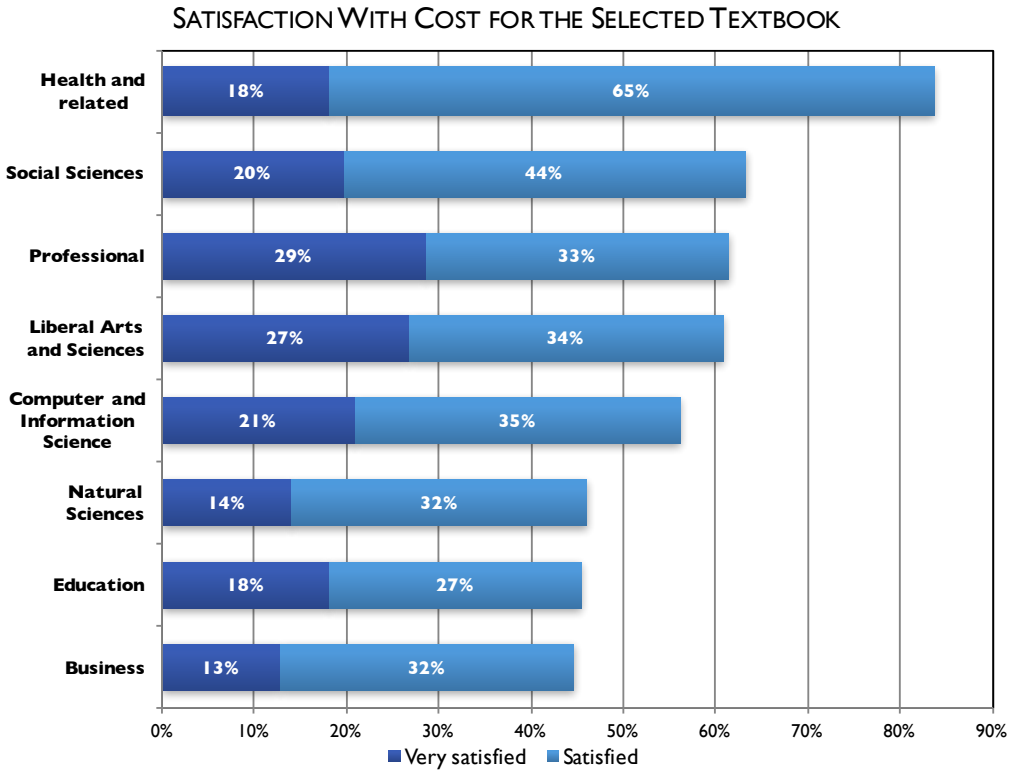
Nearly 90% of all faculty say that cost to the student is either "Important" or "Very important" in their selection of required course materials. A majority of faculty classify cost as "Very important," a finding that holds up across faculty at all levels, all ages, and all types of institutions. However, there is a slight trend for younger and non-tenure-track faculty to consider it more important than older and tenured faculty.



Faculty report that the cost to the student for their required textbook has an average price of $97 (across all levels of courses), with a median price of $75. There is considerable variability by discipline, with faculty in Health and related fields saying that their textbook averages $182, while those in Computer and Information Science say their students are spending only $68, on average.



With a majority of faculty saying that cost is very important in their selection, and also reporting that the average cost for their students is near one hundred dollars, it may not surprise to find that faculty are not very satisfied with the cost of textbooks. Only 22% of all faculty say that they are "Very satisfied" with the cost of their selected textbook. An additional 37% report that they are "Satisfied".



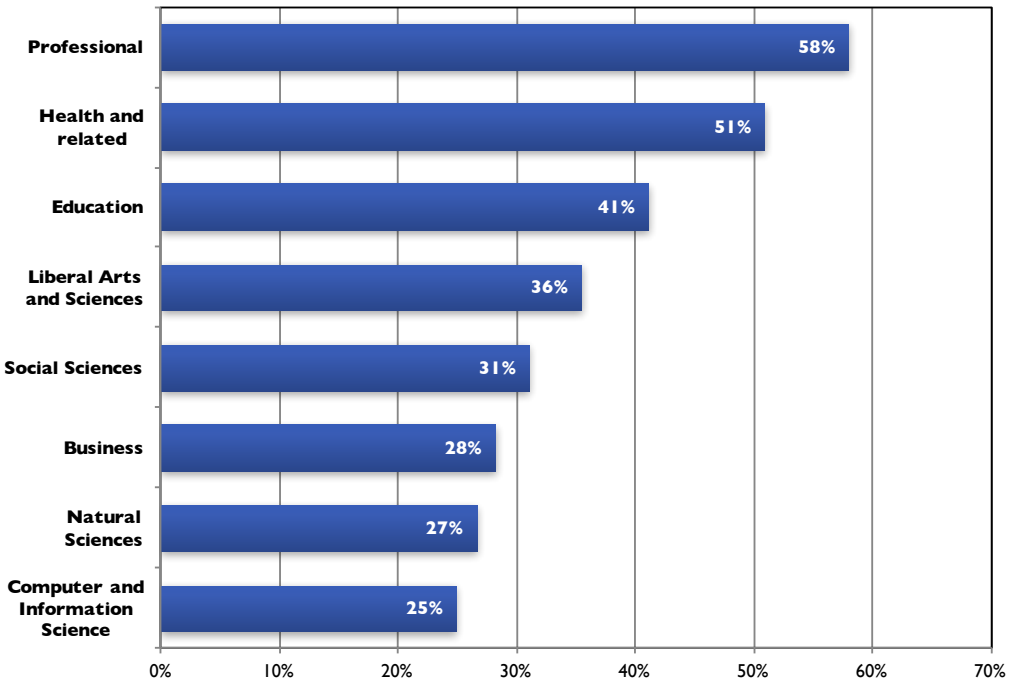
Faculty in Health and related fields may have the highest average textbook cost, but they also report the greatest proportion of faculty who are satisfied with the cost of their selection. Additionally, the Professional faculty with the second highest average textbook cost also show a majority satisfied with cost. They appear to believe that the product is worth the cost. A majority of faculty in Social Sciences, Liberal Arts and Sciences, and Computer and Information Science with the lowest average textbook cost report that they are satisfied with the cost of their selected textbook. Faculty in Business, Education, and Natural Sciences are the only segment where less than a majority report being satisfied with the cost.

Nearly 90% of faculty say that cost is "Important" or "Very important" for their selection, and the majority of that faculty say they're satisfied with the cost. So how is student access to the required materials affected? If costs were keeping students from having access to the required materials, we would expect that faculty would tell us that most or all of their students had purchased the text.

Only slightly more than a third of all faculty say that 90% or more of their students have purchased the required textbook. The remaining 64% of faculty report that less than 90% of their students made the purchase, and 44% of faculty say that less than 80% of their students that purchased the required textbook. Faculty at two-year institutions report a higher number of students purchasing the required textbook (42% at two-year institutions, as compared to 34% at four-year institutions saying at least 90% had made the purchase).

The two areas with the highest average cost for required textbooks (Professional studies, and Health and related fields) also report the greatest levels of success in having all of their students purchase the required textbook. These are the only disciplines where a majority of faculty believe that 90% or more of their students have purchased the required text. Only one quarter of faculty in Business, Natural Science, and Computer and Information Science faculty believe that 90% or more of their students have purchased the required text.

PROPORTION OF FACULTY REPORTING THAT AT LEAST 90% OF THEIR STUDENTS HAD PURCHASED THE REQUIRED TEXTBOOK BY DISCIPLINE



Awareness of Open Educational Resources

"I am not fully aware of the content available through OER but I will take a look. I am always interested in getting the right materials into my students' hands." (Part-time Business Faculty)

"Many of the faculty at my institution do not seem to be aware of OER, although faculty are aware of the financial challenges our students face. I have found the quality of materials to be excellent and now use them in all of my physics and math classes." (Full-time Computer and Information Science Faculty)

"My awareness of OER is limited. I am sure that if I knew more about them, then I would use them more." (Full-time Social Sciences Faculty)

"I don't know anything about OER, but I would be interested in knowing more about it." (Full-time Liberal Arts and Sciences Faculty)

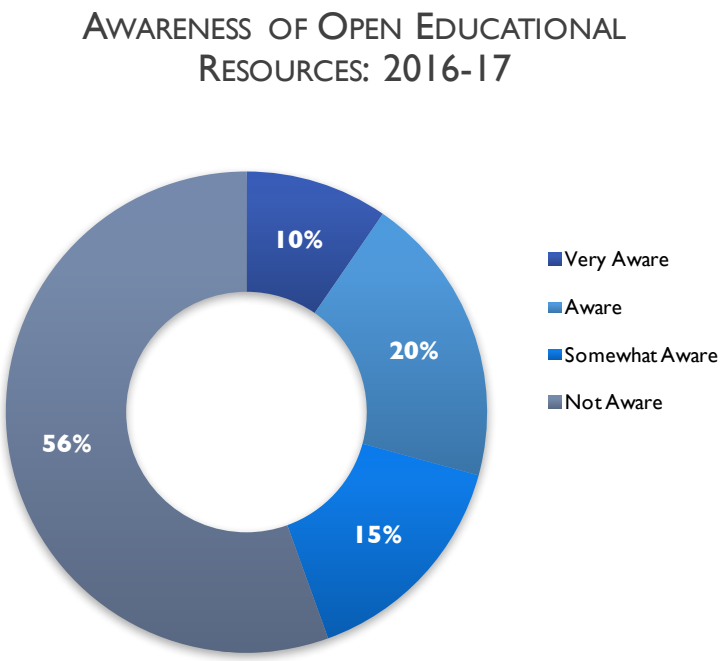
"I may have used OERs, but don't know them by that name. I look forward to learning more - I just searched online and will read up!" (Full-time Natural Sciences Faculty)

Many faculty members have only a vague understanding of the details of what constitutes open educational resources. Some confuse "open" with "free," and assume all free resources are OER. Others confuse "open resources" with "open source," and assume OER refers only to open source software. Because of these differing levels of understanding, the phrasing of the awareness question needs to be specific. The question should provide enough of the dimensions of OER to avoid confusion, without being so detailed that the question itself educates the respondent sufficiently that they could claim to be "aware."

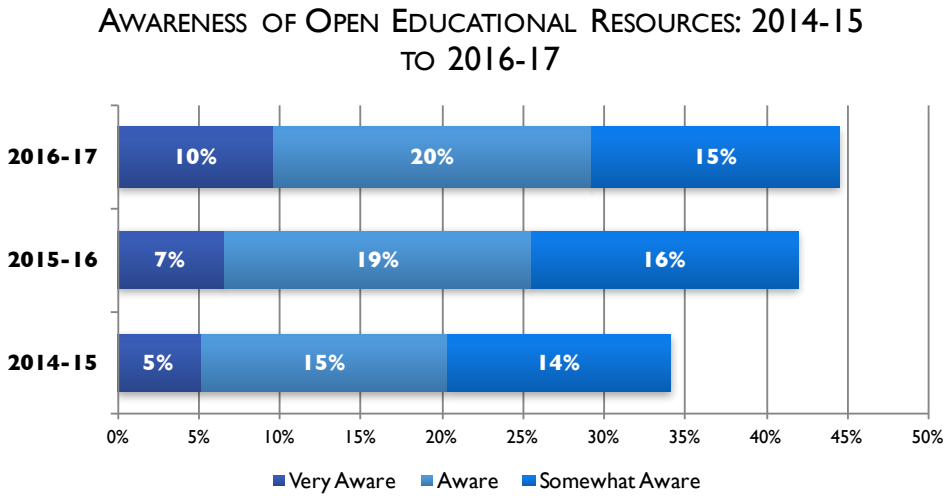
Multiple question wordings were tested for the earlier reports in this series. A question with broad definitions but no examples was found to be more precise than a question just using the term "open educational resources." Adding a series of detailed examples of OER was even more precise, but proved too leading for the respondents and artificially boosted the proportion that could legitimately claim to be "aware." The version used here was found to have the best balance in differentiating among the different levels of awareness, while avoiding leading those with no previous knowledge of the concept[8]. This question wording has been used for the past two years so that year-to-year comparisons can be made.

[8] Additional details are provided in the Methodology section of this report.

When faculty members were asked to self-report their level of awareness of open educational resources, a majority (56%) said that they were generally unaware of OER ("I am not aware of OER" or "I have heard of OER, but don't know much about them"). These results were confirmed by faculty comments, and some showed excitement or desire to learn more. Only 10% reported that they were very aware ("I am very aware of OER and know how they can be used in the classroom"), and twice that many (20%) said that they were aware ("I am aware of OER and some of their use cases"). An additional 15% of faculty reported that they were only somewhat aware ("I am somewhat aware of OER but I am not sure how they can be used").



The 2016-17 results reinforce the trend of increased awareness of OER observed over the past two surveys. Faculty claiming to be very aware doubled from 5% in 2014-15 to 10% in the most recent year. Those saying that they were "aware" grew from 15% to 20%, and those "somewhat aware" from 14% to 15%. The proportion that reported no awareness dropped from nearly two-thirds (66%) in 2014-15 to just over 50% (56%) this year.



Awareness of Licensing of Open Educational Resources

"I have worked in the publishing industry and I am a published author and I'm very concerned about copyright infringement with open source materials." (Full-time Natural Sciences Faculty)

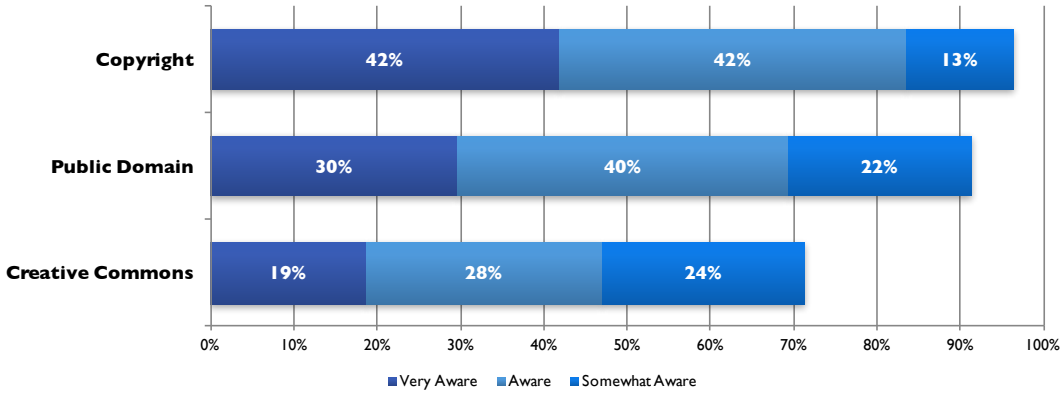
"I'm not sure whether the images that I find as results of Creative Commons searches qualify as OER, or if OER is separately labeled as such, and searchable that way. I plan to look into these resources and use them in the future." (Full-time Natural Sciences Faculty)

"While I appreciate the efforts of others to create open access materials via various kinds of licenses, I question who will pay for this kind of labor in the future as the university employment model changes increasingly towards adjunct and other limited responsibility contracts in lieu of tenure." (Full-time Computer and Information Science Faculty)

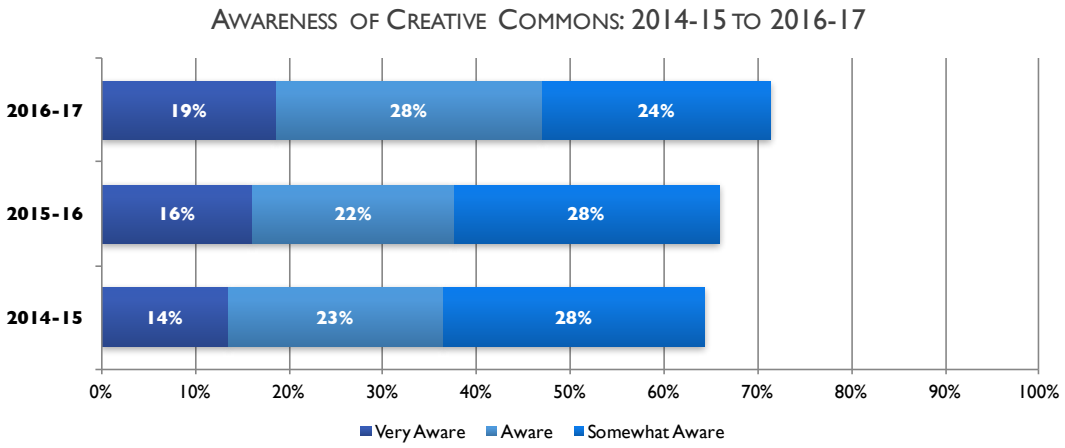
Open licensing and the ability to reuse and remix content is central to the concept of open educational resources[9]. It is therefore critical to understand faculty awareness of these concepts. Most faculty continue to report a high degree of awareness of copyright status of their classroom content (84% "Very aware" or "Aware"), with 96% expressing some degree of awareness. Awareness of public domain is also very high, with over 90% of respondents reporting some degree of awareness. The level of awareness of Creative Common licensing, on the other hand, is somewhat lower. Less than one-half of faculty say that they are either "Very aware" (19%) or "Aware" (28%), and only 71% report any level of awareness.

Awareness levels have been increasing for all three legal permissions. The 84% reporting that they were "Very aware" or "Aware" of copyright is a small increase over the 80% rate reported last year, and the 78% rate the year before. Awareness of public domain increased very slightly, with "Very aware" or "Aware" totals growing from 69% this year compared to 67% last year and 68% the year before. Awareness levels of Creative Commons have increased the most, with the number of faculty reporting that they were "Very aware" or "Aware" now at 47%, up from 38% last year and 36% the year before that.

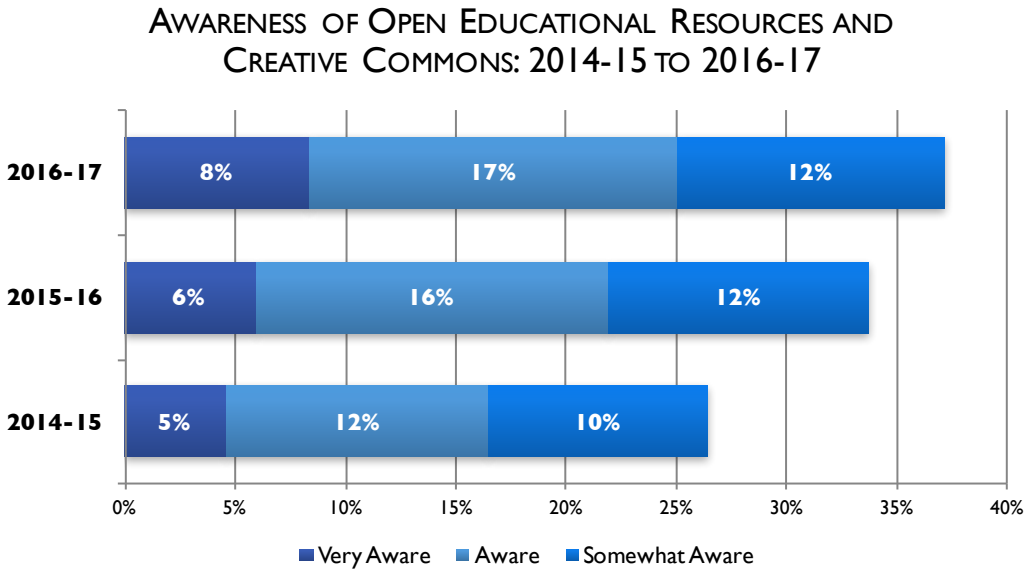
AWARENESS OF LEGAL PERMISSIONS: 2016-17



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



Given that faculty members may have only a "fuzzy" understanding and awareness of open educational resources, a more precise understanding of that level of understanding and awareness can be gained from examining a combination of responses. Examining the difference between faculty who report that they are aware of OER and faculty who report that they are aware of *both* OER and Creative Commons licensing provides a good indication of the depth of understanding of OER among faculty members. If faculty who report that they are unaware of Creative Commons licensing are removed for any of the "Aware" categories of the measure of OER awareness, we create a much stricter index of OER awareness.



The level of OER awareness drops when we apply this stricter definition, but only somewhat. Those classified as "Very aware" dips from 10% to 8%, "Aware" from 20% to 17%, and "Somewhat aware" from 15% to 12%. The overall proportion classified into any of the "Aware" categories changes from 44% when awareness of Creative Commons is not required, to 37% when it is.

The level of combined awareness of OER and Creative Commons has increased each year. Faculty reporting that they are "Very aware" increased from 5% in 2014-12 to 8% in 2016-17. Likewise, those reporting that they are "Aware" grew from 12% to 17% over this same period. The total percentage of faculty claiming some degree of awareness using this stricter definition increased from 26% in 2014-15 to 34% in 2015-16, and finally to 37% in 2016-17. This may correlate with faculty exposure to digital copyrights, OER, and other online material with the increasing preference and usage of digital course materials.

Digital versus Print

"Students still prefer printed textbooks." (Full-time Natural Sciences Faculty)

"Textbooks are becoming cost prohibitive. That being said, I think students learn better when they have a printed resource at the ready when they are learning." (Full-time Computer and Information Science Faculty)

"My experience with digital materials assigned in many courses does not suggest that all students will actually do the reading whether in print or digital form." (Full-time Social Sciences Faculty)

"Both the printed and digital versions of the book present pros and cons in students' ability to learn course topics. The reality is many students may not always utilize the ebook, ematerials daily if there is limited to no access to a smartphone or no in-home Internet services. Many students often do not bring a laptop to use during class/lecture, so this makes it difficult to follow along using the ebook/printed textbook." (Part-time Social Sciences Faculty)

"I do not use electronic devices in my classroom and do not permit my students to use anything except print materials in my classes." (Full-time Liberal Arts and Sciences Faculty)

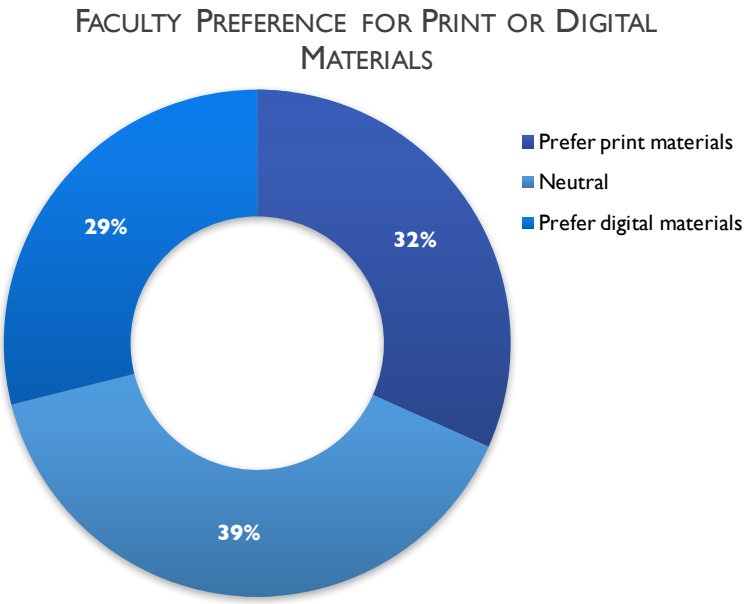
"I have surveyed all of my classes for student preference with regards to textbooks. Overwhelmingly, students indicated a preference for print versions (70-95%)." (Full-time Natural Sciences Faculty)

"Students really want the option of a print version, even if the online version is free." (Full-time Social Sciences Faculty)

"I used an OER for one semester of Intro. to Microbiology. The feedback from the students was that the majority wanted a print book." (Full-time Natural Sciences Faculty)

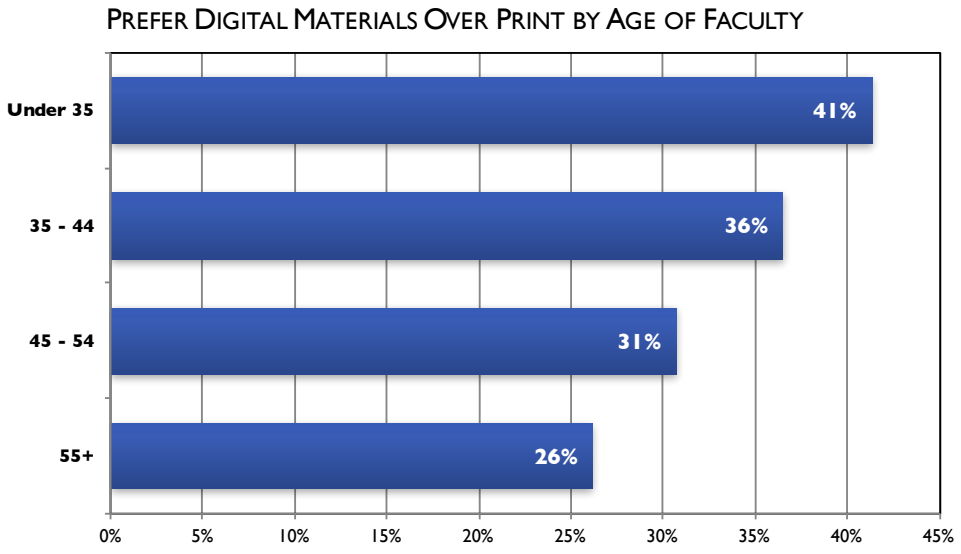
"I want my students to save money, but I teach at a community college and most students are not disciplined enough to pull the book up on the computer. They are getting better, however. Many still need to see the printed words on a page. I am also concerned with online resources not having things such as a table of contents, glossary (important to my students), index, etc." (Full-time Natural Sciences Faculty)

Both commercial publishers and the OER community provide many different sets of course materials in digital formats. In some cases, these are part of a subscription service which students access online during the course. At other times, the material is provided as a free download. Faculty have mixed opinions about the relative merits of digital versus print, with roughly equal numbers saying that they prefer each alternative. The largest group, however, report that they are neutral.



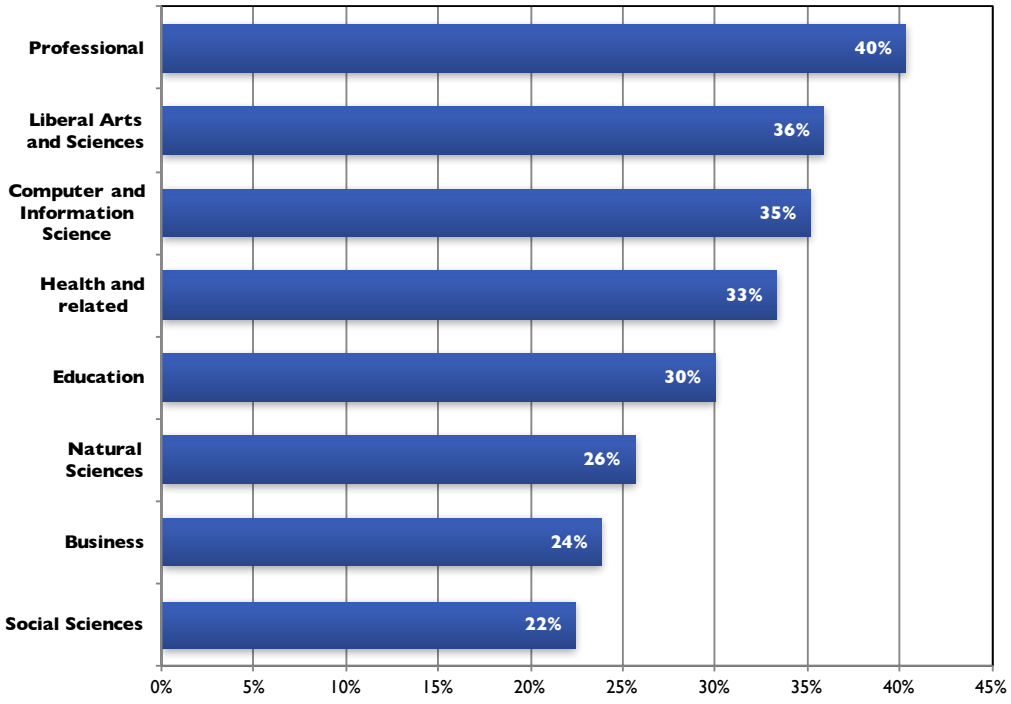
Many faculty do not see the choice between digital and print as mutually exclusive. They often state that prefer to have the choice, and that they prefer for their students to have that choice as well. Faculty comments reflect a potential disconnect, with faculty consistently mentioning the use of digital materials as a means to reduce costs, while at the same time reporting that their students still strongly prefer printed materials.

There is a strong pattern by age in the preference for digital materials over print, with older faculty much less inclined to prefer digital than younger faculty (26% for those over age 55 as compared to only 41% for those under age 35). This result might imply a growing acceptance of digital, as additional younger faculty begin teaching.



As might be expected, there is also a strong pattern by discipline in the preference for digital materials over print. Faculty teaching in the Social Sciences are the least likely to show a preference for digital (22%). Those teaching Business and Natural Sciences also show little enthusiasm for digital materials. Faculty teaching in Professional programs, on the other hand, are much more positive towards digital, with a preference rate nearly twice that of those in Social Sciences (40% preferring digital over print).

PREFER DIGITAL MATERIALS OVER PRINT BY DISCIPLINE OF FACULTY



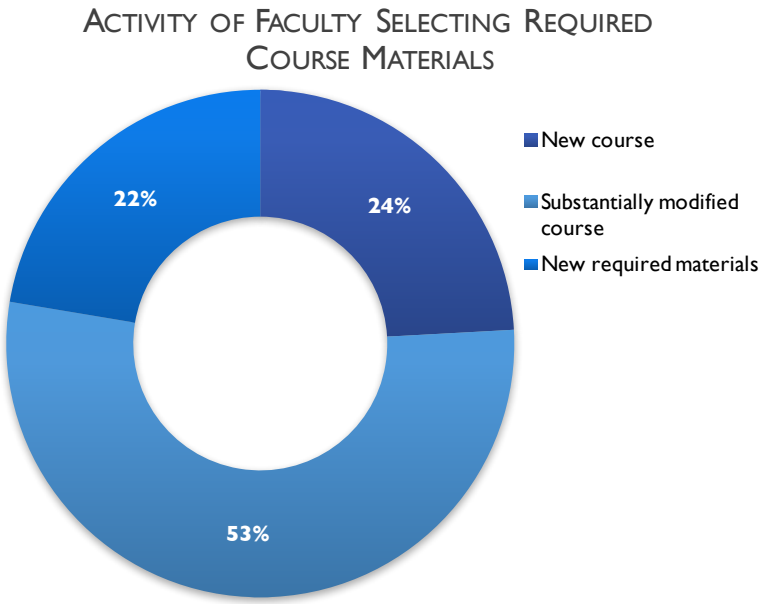
Educational Resource Decision Process

It is important to focus on specific faculty decisions, not hypotheticals. Faculty in this study were asked about three different activities that represent the faculty member making a decision on the required materials for a particular course: creating a new course, substantially revising an existing course, or adding or changing required course materials. The specific question wording used was:

> Over the past two years, either working alone or with others, have you...
>
> Created a new course *(A course that was not previously listed in the course catalog)*
>
> Substantially modified an existing course *(Examples include making a substantive change in the content included in the course, changing the delivery method (e.g., converting a face-to-face course to online) or a similar change of this magnitude. Do not count the normal fine-tuning to a course during its delivery or the typical term-to-term refinements that all courses go through)*
>
> Added or changed required course materials *(Items listed in the course syllabus as required for all students, either acquired on their own or provided to all students through a materials fee, examples include a printed or digital textbook, other course-complete printed (course pack) or digital materials, or materials such as laboratory supplies)*

Deciding on new or revised educational materials is a very common occurrence for teaching faculty. The vast majority (89%) reported that they had performed at least one of these activities over the previous two years, and large numbers had done more than one. The most common activity was changing required materials for an existing course (73%), followed by substantially modifying a course (65%). While creating a new course was the least common activity, nearly one-half of faculty (49%) had performed this action over the previous two years.

Only those faculty who had engaged in a decision process over the past two years were asked about their motivations and process for that decision. Faculty who had engaged in this process for more than one course were asked to respond based on the course with the largest enrollment. A majority (53%) of the resulting decision processes were for a substantial revision to an existing course, with roughly equal numbers of faculty creating a new course (24%) and requiring new materials for a course without doing substantial modifications (22%).



The reasons that faculty gave for engaging in the decision process varied considerably, ranging from the need to fill a gap in the curriculum to just being bored of teaching the course the same way for multiple years:

"I had been teaching the course for 15 years, and it was sucking the life out of me. It needed to be rebuilt from the ground up." (Full-time Mathematics Faculty)

"I have been away from the course for a few years and thought now that I am teaching it again, it was a good time to rework the course from beginning to end. Also, I want to add more digital content and an online component to the course." (Full-time Social Sciences Faculty)

"I wanted to use a 'flipped' class in order free up class time for students to work on problems in groups, helping me to gauge their comfort with the material and better tailor material to their needs." (Full-time Mathematics Faculty)

"A course cross-listed in another department was cancelled by that department and so our department needed a new course for that semester." (Full-time Social Sciences Faculty)

"A new online course was needed and I was asked by our division chair to develop it." (Full-time Natural and Physical Sciences Faculty)

"I participated in a faculty fellow program that asked us to pilot active and engaged learning in our courses. I modified my course to have consistent use of active learning strategies in my ESOL writing and grammar course." (Part-time English Language and Literature Faculty)

"I took over a class from another instructor. It was widely regarded as being too easy and lacking rigor." (Full-time Social Sciences Faculty)

"A traditional course was changed to an online format to better accommodate the varied schedules of the nursing students who take it." (Full-time Mathematics Faculty)

"We wanted the course to appeal to more than just our major students." (Full-time Computer Science Faculty)

"Student feedback and even I was not motivated to read the assignments. It was lacking interesting ways to help students." (Full-time Social Sciences Faculty)

"My goal is to provide students with the most up-to-date material available. I teach from the primary research literature, which requires me to constantly update the required material." (Full-time Natural and Physical Sciences Faculty)

"Based on input from students and from the Graduate Teaching Assistant, I felt the changes would be able to engage students more fully in the material being presented and in thinking critically about the subject matter." (Full-time Natural and Physical Sciences Faculty)

"The person who had refused to share the course for years finally retired." (Full-time Social Sciences Faculty)

"Due to a proposal from the Teaching to Increase Diversity and Equity in STEM from AACU." (Full-time Natural and Physical Sciences Faculty)

"Our course was dreadful outdated, didn't work with today's students, and was not easy to follow. It was too old-grained for today's learners." (Full-time Natural and Physical Sciences Faculty)

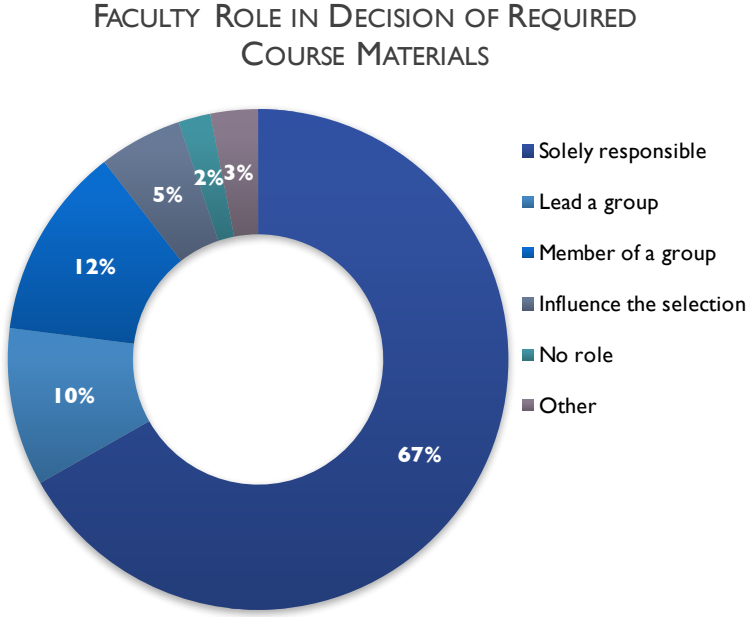
"Effort to improve student retention by providing more options for student credit." (Full-time Natural and Physical Sciences Faculty)

"High failure rates (Full-time Natural and Physical Sciences Faculty)

"I am bored repeating myself. Also, more significantly, the threads of a discipline become clearer with time." (Full-time Natural and Physical Sciences Faculty)

"I decided to participate in a university level effort to include critical and creative testing across the curriculum." (Full-time Computer Science Faculty)

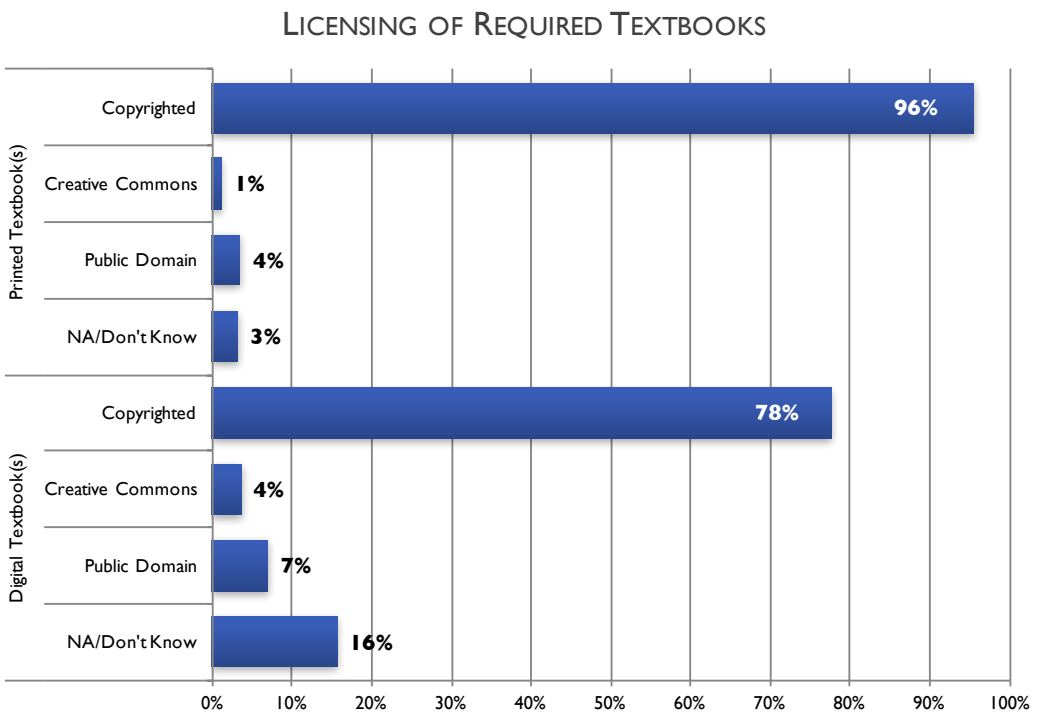
Two-thirds (67%) of all faculty reported that they were the sole decision maker for the new or revised course material. An additional 22% were engaged in a group decision, with 10% being the lead and 12% acting as a member of the group.



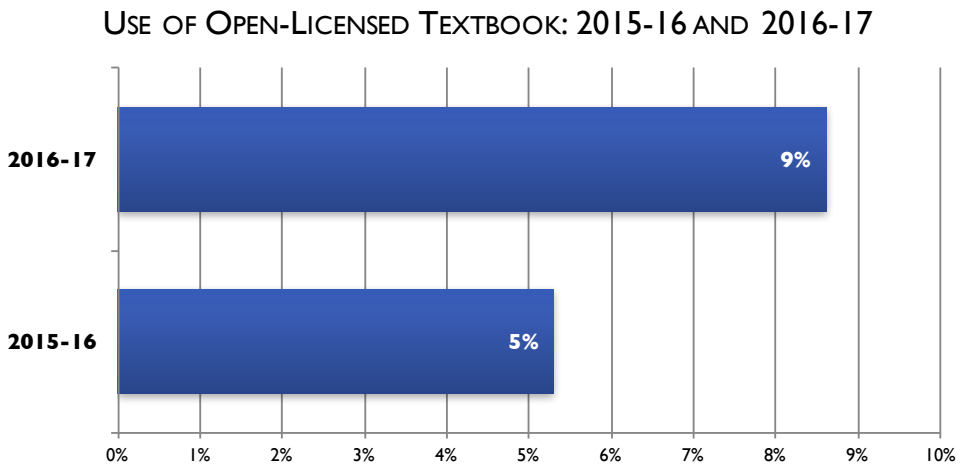
The courses that faculty reported on were overwhelmingly at the undergraduate level (74%). Most were delivered face-to-face (78%), with only 14% blended and 8% online. Faculty classified these courses primarily as an "Introductory course" (40%), but intermediate (31%) and advanced level (28%) courses were both well represented. Because we asked faculty who worked on more than one course to select the largest enrollment course for their responses, the reported courses skew larger than might otherwise be the norm. A large portion of these courses (46%) are taught in multiple sections, a rate that goes up to 66% among the introductory level courses.

Nearly three quarters of the courses that faculty are reporting on are required for students, either for all students (28%) or for selected students (e.g., majors in this discipline) (45%).

Faculty were asked how their required printed and digital textbooks were licensed. Faculty overwhelmingly reported that they were using copyrighted printed textbooks (96%), with only small proportions stating that the text was licensed under Creative Commons (1%) or was in the public domain (4%). The numbers for the digital version of the textbook were also highly slanted towards copyrighted material, but at a rate considerably lower (78%) than for print versions. The rate that faculty said that their digital textbooks were either creative Common Commons or public domain were higher than for printed textbooks, but the second largest group (16%) were faculty reporting that they did not know how the digital materials were licensed. This is well in line with earlier results showing faculty do not have a high level of awareness of the various legal permissions that govern the use and sharing of their required textbooks.



Only a small proportion of faculty report that they are using an open-licensed textbook (defined as either public domain or Creative Commons). However, the 9% rate for 2016-17 represents a substantial increase over the rate for 2015-16 of 5%. Use of open-licensed textbooks may be rare, but it is growing.



Potential Barriers

"I prefer the 'regular' publishers who have been providing excellent resources for many, many years. I'm very old-school about textbooks and hope I will never be forced to use OER." (Full-time Social Sciences Faculty)

"After settling on the idea of teaching statistics in a Simulation-based Inference manner, there were very sparse offerings in the OER domain." (Full-time Computer and Information Science Faculty)

"I'm convinced OER is the future of education. The reason we have such exceptional educational resources today is because authors/publishers were motivated by $$ to build them. I would love to believe that OER can get there (pedagogical excellence) without required avarice but so far, I haven't seen it." (Full-time Natural Sciences Faculty)

"I am not satisfied with the current crop of OER, creative commons, or open source resources available." (Full-time Social Sciences Faculty)

"My chief reason for not using more 'free' textbooks has to do with the supplemental resources and the need to 'start over' in class design." (Full-time Natural Sciences Faculty)

"I disagree with the basic premise that more students will get a better education if course material (or tuition) is free. Motivation, prioritizing, and commitment seem to be the biggest factors in educational success, so having reasonably priced, high quality materials is my priority." (Part-time Social Sciences Faculty)

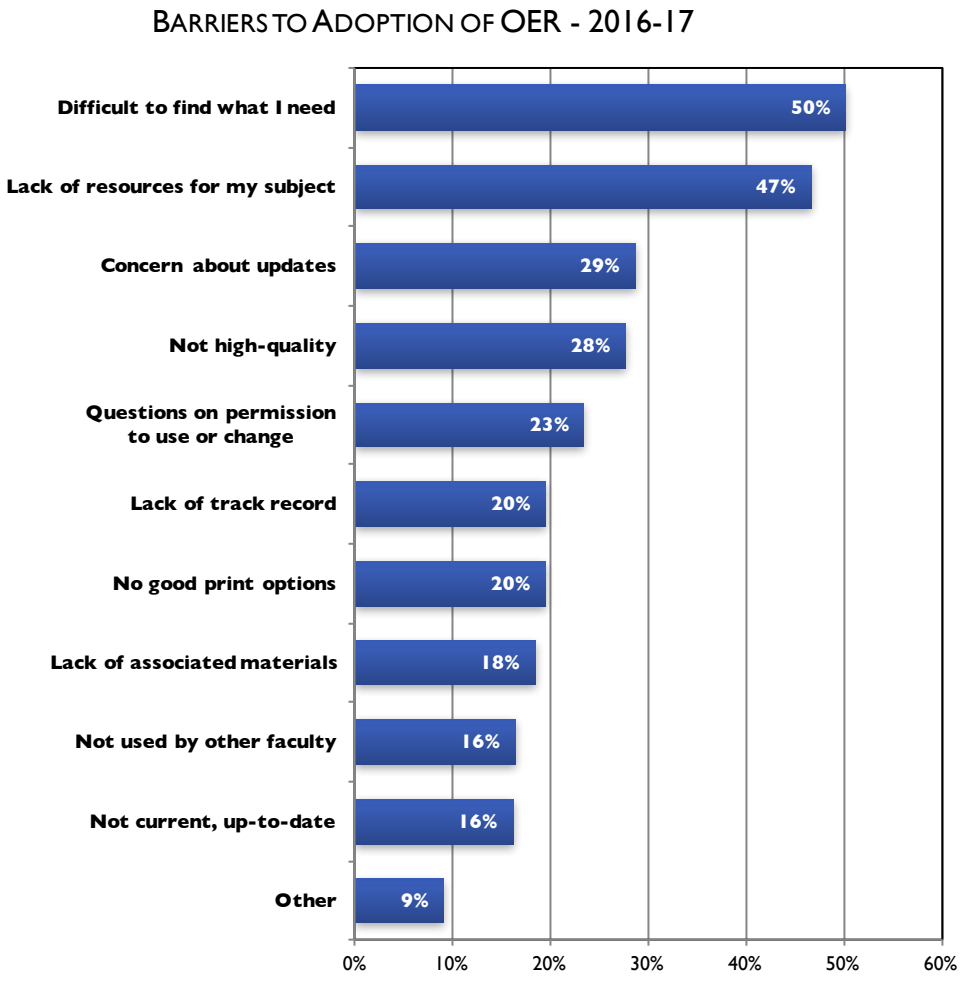
"I have found that there are problems with free material. Massive infusion of funds to develop free material does not assure quality." (Full-time Computer and Information Science Faculty)

"I teach detailed scientific Concepts and we require high quality medical illustrations. From what I've seen from open source materials, the quality of the illustrations and the accuracy of the information is often lacking, and there have been many times that illustrates have been lifted from copyrighted sources and presented as open source." (Full-time Natural Sciences Faculty)

"I tried using an OER textbook in the spring. It was a catastrophic experience. I assumed the materials would be high quality because I have colleagues who have used OER and had good experiences. I didn't spend much time adapting the materials for my classroom. My students' learning suffered in response." (Full-time Natural Sciences Faculty)

The results from this year's survey show that the most serious issues facing wider adoption of open educational resources continues to be the effort needed to find and evaluate suitable material. Nearly one-half of all faculty report that "there are not enough resources for my subject" (47%), and that it is "too hard to find what I need" (50%). These rates exceed those of any other potential barrier. The pattern has been consistent over time, with faculty ranking the effort needed to find and evaluate suitable material as the most critical barriers to adoption. This has been the top issue for each of the three years the question has been asked.

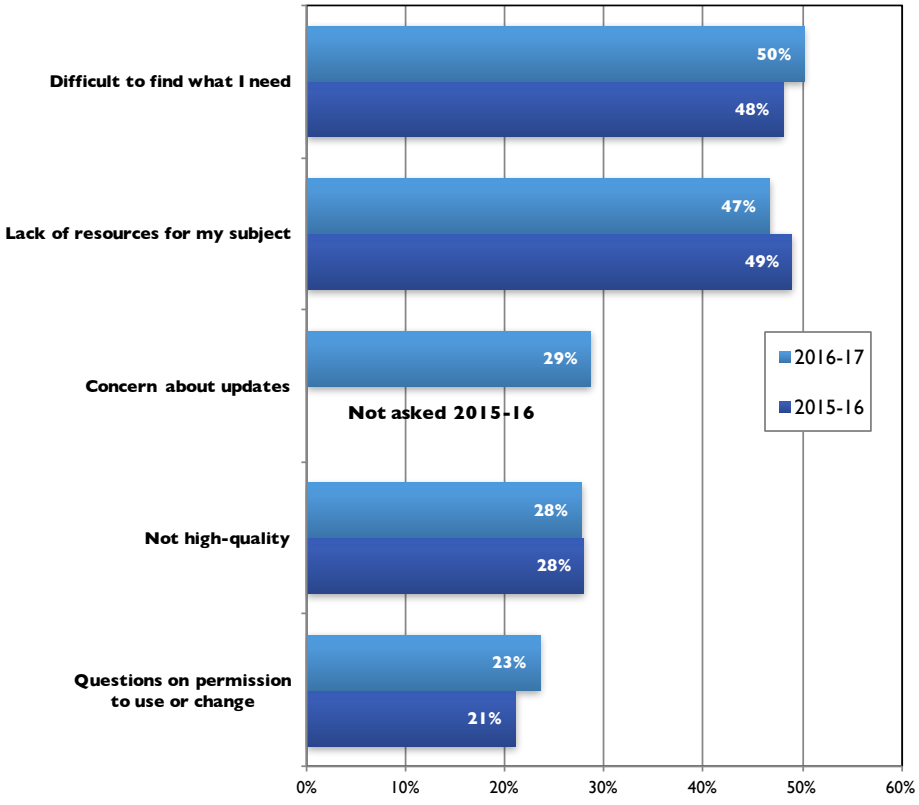
Many faculty members also voice concerns about the long-term viability of open educational resources, and worry about who will keep the materials current. The third-most mentioned barrier, "concern about updates," is also often cited in the open-ended comments. Faculty specifically mention the lack of a financial incentive as reason to think that there will not be regular updates.



Concerns about quality are reflected in both the fourth-mentioned item, "not high quality" (28%), and "not current or up-to-date" (16%). The lack of nuanced understanding of the full nature of open educational resources is evident in the fact that nearly one-quarter of all faculty report that "questions about permissions to use or change" the materials as a potential barrier to their adoption. There also appear to be concerns about fitting in with other standards at the department and institution, or faculty not wanting to be early adopters of OER materials: 16% of respondents listed "not used by other faculty" as a barrier to adoption.

There has been little change among faculty perceptions of these barriers. Comparing the 2016-17 results for the top-mentioned barriers to those reported last year shows only the smallest changes. The top two continue to relate to the difficulty in finding suitable resources, while concerns about quality and permissions also remained relatively stable. The 2015-16 survey did not include an option asking about updates to the OER materials. It was added to the most recent survey because many faculty mentioned this in their open-ended response to this question.

BARRIERS TO ADOPTION OF OER - 2016-17 AND 2015-16



The Process of Textbook Adoption for Introductory Courses

"I think it would be great if there were free, open access course materials for introductory courses in biology and other disciplines. But then, I think it would be great if we had universal health care in the U. S., too." (Full-time Natural Sciences Faculty)

"I use an OpenStax text in my introductory courses only. I have looked at other free/OER resources, but I have not found any of sufficient quality to use. The OpenStax book I use is not the best, but is sufficient with supplements I provide." (Full-time Social Sciences Faculty)

"I was very interested in using OpenStax Chemistry but found many major errors when I read a few chapters." (Full-time Natural Sciences Faculty)

"We are extremely happy with our adoption of the OpenStax biology textbook. We have derived and edited our own collection. The process allows us to customize our teaching materials." (Full-time Natural Sciences Faculty)

"I chose the OpenStax textbook because it addressed all my concerns about OER: print option available, high quality (not as high as some texts, but high enough considering what I add during my class time), and resources available (although not as much as I would like to see, but for an experienced instructor, they are fine)." (Full-time Social Sciences Faculty)

"We are all using OpenStax biology books. The main issue is lack of supporting material, but that is overcome by a collection of resources that the department has collected over the years, and is provided to all new adjuncts." (Full-time Natural Sciences Faculty)

"I chose OpenStax because it was reviewed by the California state committee, because it covers every topic in the course outline of record at my college, and because it comes with a test bank (a must!)." (Part-time Social Sciences Faculty)

"I have used OER materials from OpenStax and found the supplements really helpful. Students really want the option of a print version, even if the online version is free. I love the adaptability and played around with adding content, too." (Full-time Social Sciences Faculty)

"I tried out an OpenStax text for my course this spring and was very pleased. Especially now that I know that they do offer a print version of the book." (Full-time Natural Sciences Faculty)

Not all faculty textbook choices have the same level of impact. The decisions of those who teach large enrollment introductory level courses will affect far more students than those teaching smaller enrollment courses. OER publishers are well aware of this, and have concentrated their offerings to serve these large enrollment courses. Faculty members in this study who made a textbook decision for a large enrollment introductory level course were presented with additional questions concerning their decision. The courses addressed in this study were:

- Algebra and Trigonometry
- American Government
- Anatomy and Physiology
- Biology (majors/mixed majors)
- Biology (non-majors)
- Calculus
- Chemistry (2 semester)
- Chemistry (General)

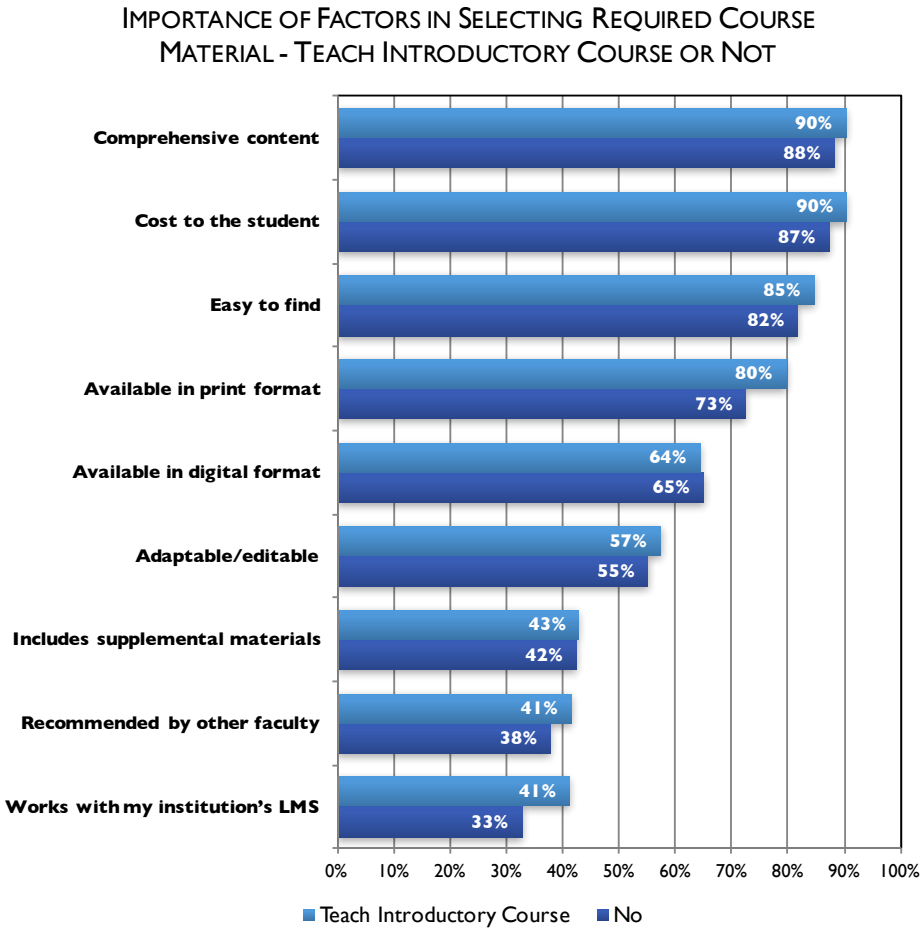
- College Algebra
- College Physics (Algebra based)
- Introductory Psychology
- Introductory Sociology
- Macro Economics
- Micro Economics
- Microbiology
- Pre-algebra
- Precalculus
- Principles of Economics
- Statistics
- U.S. History
- University Physics (Calculus based)

Faculty teaching one of these courses were presented with a list of the most commonly used commercial textbooks (up to twelve) for that specific course, along with an open text alternative from OpenStax, a non-profit OER publisher based out of Rice University. The choice of an OpenStax OER alternative for these courses was made to provide a consistent set of options for all courses, so relative adoption rates could be estimated. OpenStax has been providing texts and ancillaries for introductory courses since 2012, and currently have an OER offering for each of the above-listed courses.[10]

Introductory level courses are often taught in multiple sections (66%) and are typically required for at least some students (79%). Faculty teaching these courses are still the primary decision maker for selecting the required course materials. However, the decision is made at the department or higher level 19% of the time, a rate only slightly higher than the overall rate of 16% for all courses.

The selection process for the large enrollment courses is very similar to that for all courses. Faculty teaching these courses rank the importance of the various factors in their decision in exactly the same order as the general faculty, with only a few small differences in reported levels. The difference in rated importance for most factors is within a few percentage points. The only ones where there is any hint of a difference are the availability in print format (where those teaching introductory level courses rate it 7% higher) and that the resources work with the institution's learning management system (where there is a similar 7% difference).

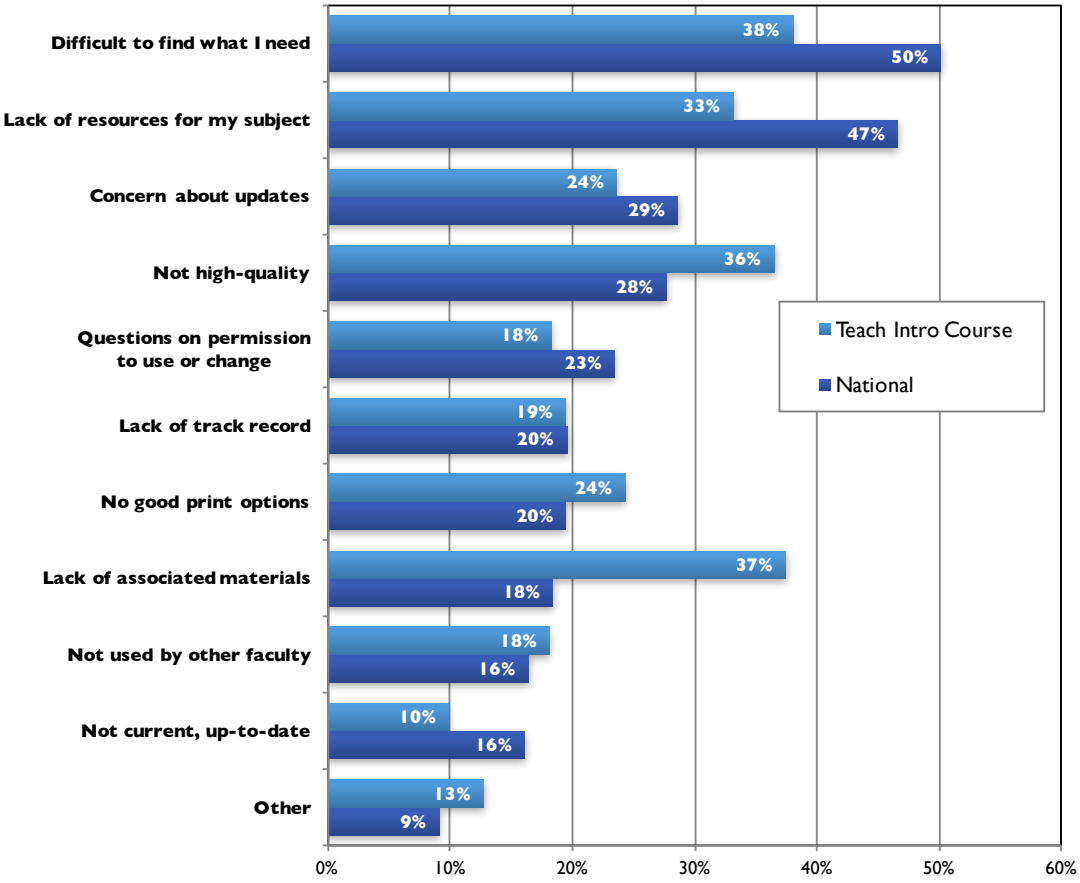
[10] There are other open textbook options for several of these courses. OpenStax textbooks were used in this study to provide a consistent alternative for all courses. https://OpenStax.org/



While the relative ranking of factors used in selecting course materials is very similar between those teaching introductory-level courses and all other faculty, the perception of what barriers prevent them from adopting an OER alternative are very different. Faculty teaching introductory-level courses are concerned that it is "difficult to find what I need" and a "lack of resources for my subject" but at a much lower level than the overall faculty response. This is most likely because it is exactly these courses that OER publishers have been targeting, meaning that the range of OER options is far better for these courses than for most others.

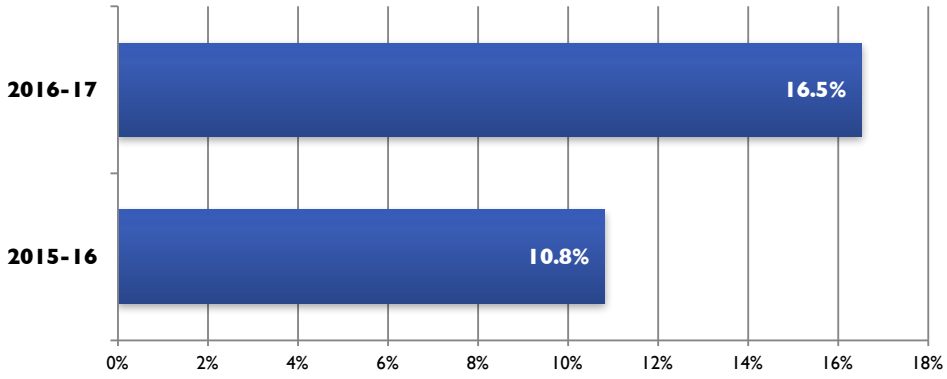
Faculty teaching introductory-level courses may be more aware of OER options that are other faculty, but that does not mean that they do not have some serious concerns. They are more concerned that the OER alternatives are not of high quality (36% as compared to 28% among all faculty), and very concerned about the lack of associated materials, with a rate more than double that of the overall faculty sample (37% compared to 18%).

BARRIERS TO ADOPTION OF OER - 2016-17

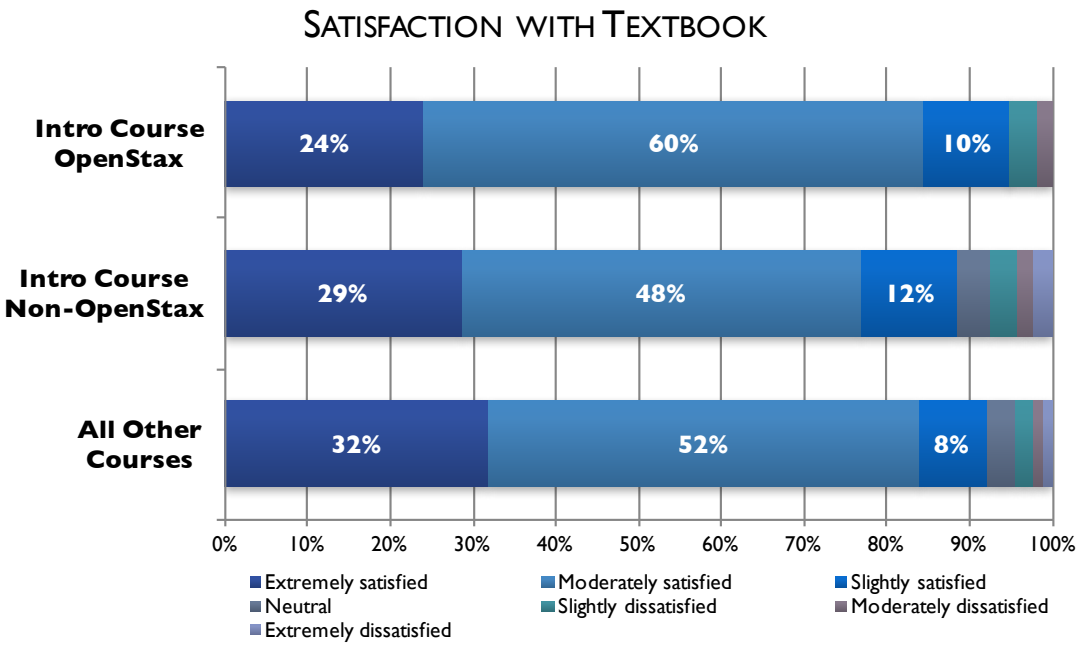


The rate of adoption of OpenStax textbooks among faculty teaching these large enrollment courses is now at 16.5%, a rate which rivals that of most commercial textbooks. This is a substantial increase over the rate observed in the previous year (10.8%).

ADOPTED AN OPENSTAX TEXTBOOK FOR INTRODUCTORY LEVEL COURSE: 2015-16 AND 2016-17

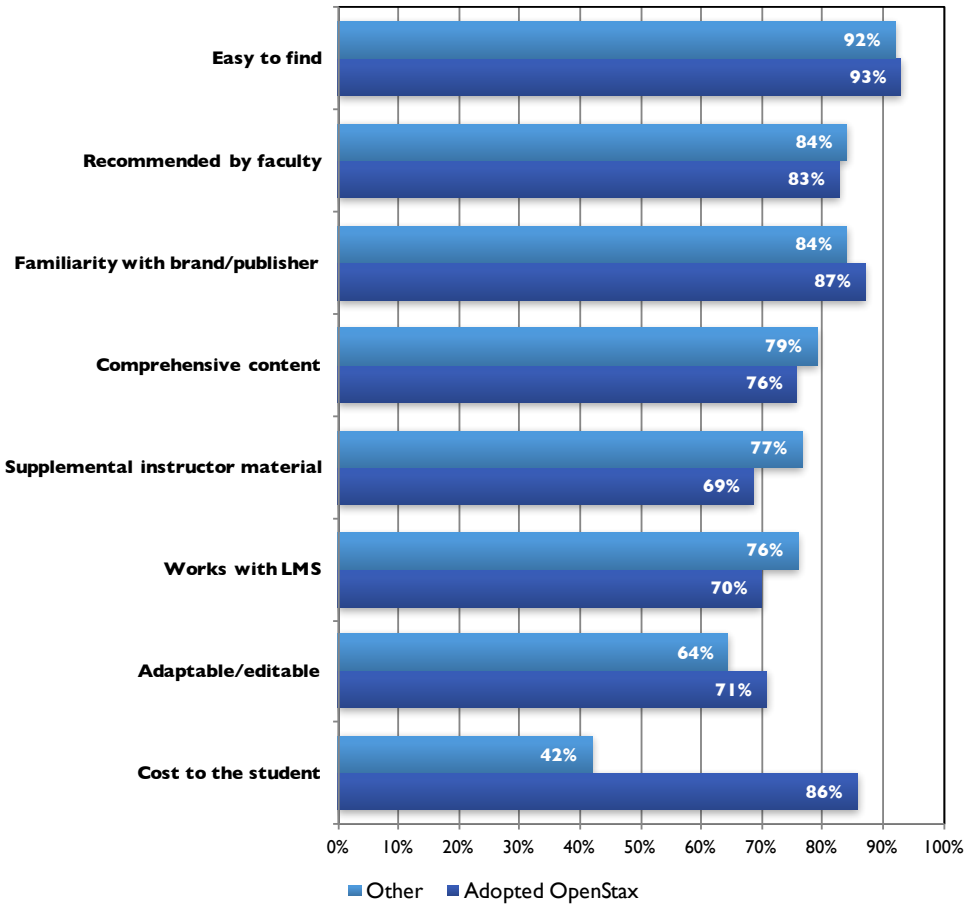


All faculty were asked about their level of satisfaction with the textbook they selected and used. Users of OpenStax textbooks had levels of satisfaction equal to their peers teaching introductory level courses who had selected commercial textbooks. A higher proportion of faculty using non-OpenStax textbooks reported that they were extremely satisfied (29%, as compared to 26% for the OpenStax users). That said, OpenStax users reported lower levels of dissatisfaction, and higher levels of "moderate" satisfaction. Interestingly, there were only satisfied or dissatisfied responses, and no "neutral" satisfaction responses with OpenStax. Overall, the pattern for OpenStax users has the majority clustered in the moderately satisfied group.



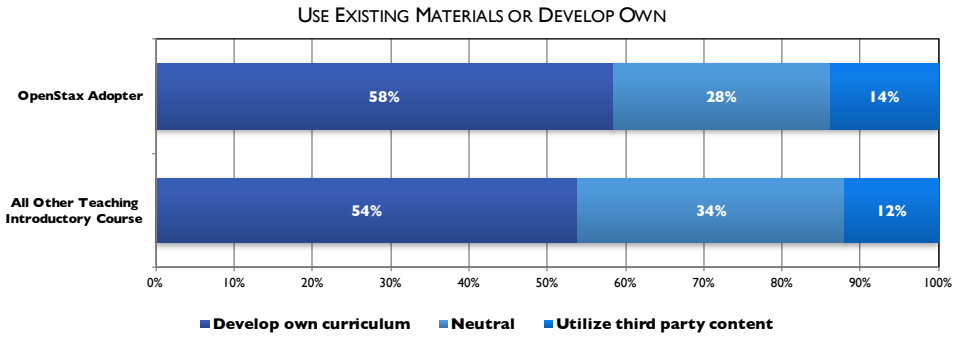
In addition to an overall satisfaction with their textbook choice, faculty were asked about their level of satisfaction with a number of specific aspects of their choice. With the single exception of the dimension of cost, where the OpenStax users were far more satisfied, levels of satisfaction were very similar among faculty teaching introductory level courses between those who adopted an OpenStax textbook and those who had selected something else.

SATISFACTION WITH SELECTED TEXTBOOK - OPENSTAX USER OR NOT

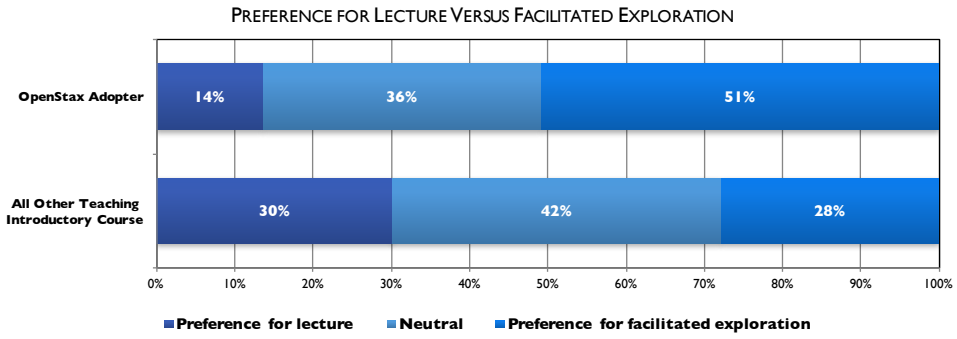


The higher level of satisfaction with cost to the student is evident in faculty's reported textbook costs. Faculty teaching large enrollment introductory courses who did not select an OpenStax textbook reported an average cost of $125 for the required textbook. Those who selected an OpenStax text reported an average cost of $31. This is also reflected in faculty perceptions of how many of their students purchased all the required textbooks for the course. The median rate reported by faculty who did not select an OpenStax textbook was 85%, while the rate among those who did select an OpenStax textbook was 92%.

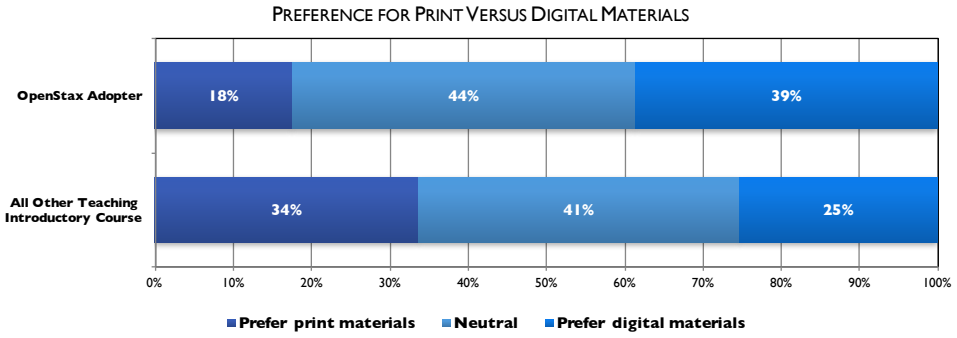
Are faculty who select an OpenStax textbook different from other faculty? Faculty were asked to rate themselves on a scale of how much they used existing materials and how much they created new materials for their classes. Faculty who adopted an OpenStax textbook are similar to their peers on this dimension, with a majority reporting that they develop their own curriculum.



The picture is very different when faculty report on their teaching styles, however. A majority (51%) of faculty who adopted an OpenStax textbook say that they prefer facilitated exploration (which compares to only 28% among those who did not adopt an OpenStax textbook). OpenStax adopters are only half as likely to say they prefer lectures as those who did not adopt.



OpenStax adopters are also far more comfortable with digital materials. They are twice as likely to prefer digital over print (39% compared to 18%), while their peers tend to prefer print (34% for print compared to 25% who prefer digital).



Future Use

"Free resources cannot compete with customize updated textbooks and websites made available by commercial publishers with proven authors." (Business Faculty)

"I want to use open source materials. My first foray into it was disappointing." (Full-time Social Sciences Faculty)

"There is no OER for Human Biology for non-biology majors specifically. That is why I have yet to use it. There is only a general biology text so far." (Full-time Natural Sciences Faculty)

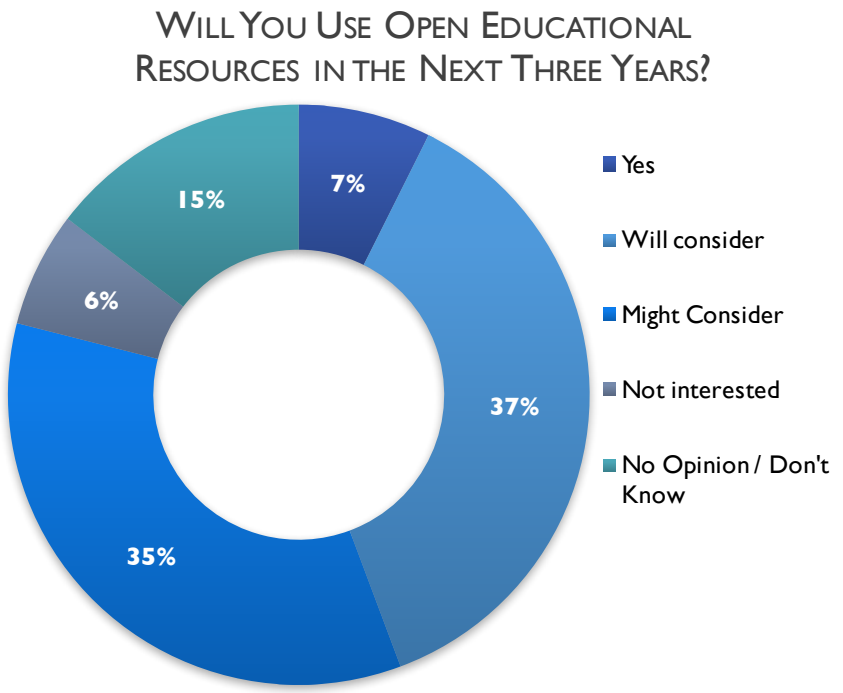
"Lack of ongoing payment to authors means open material is almost never well maintained." (Full-time Computer and Information Science Faculty)

"OER sounds fascinating." (Full-time Computer and Information Science Faculty)

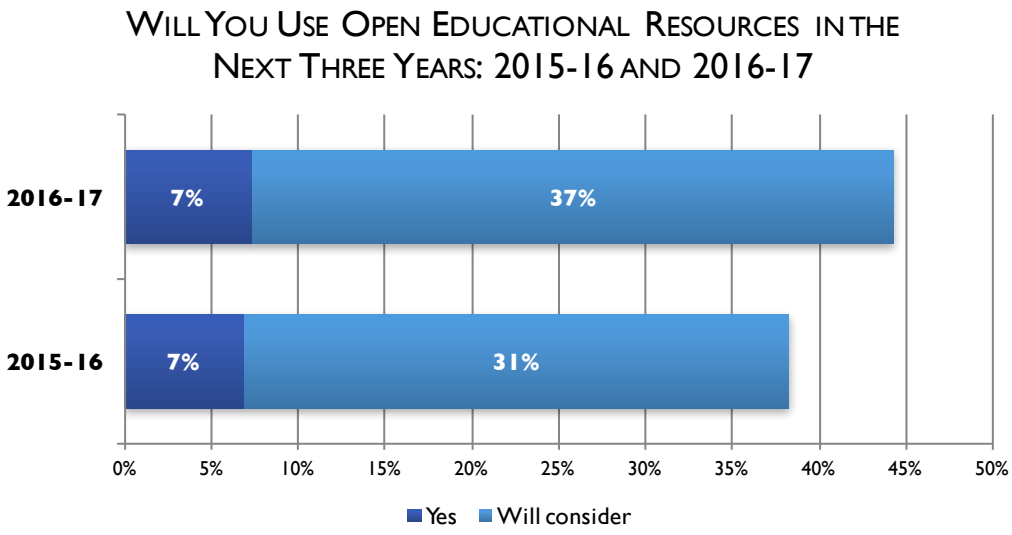
"My focus is research and doctoral advising. I should look for open resources but the time it takes versus the reward and expectations make putting in the time an un-rewarding proposition. Neither students nor colleagues bring it up, so why invest the time?" (Full-time Education Faculty)

"When I looked at the available OER a few years ago, I found the search clumsy and the materials a bit outdated. I would more often consider OER if it was easier to find what I need and to build a course around it." (Full-time Liberal Arts and Sciences Faculty)

Faculty members who are not current users of open educational resources were asked if they expected to be using OER in the next three years. Only 6% reported that they were not interested, while an additional 15% had not yet decided and were unable to offer an opinion. A small number of faculty claim that they will use OER in the future (7%), while a larger group (37%) say that they will consider future OER use.



There has been no change in the proportion of faculty who report that they will use OER in the next three years, remaining at the same 7% this year as it was in 2015-16. There has been an increase in the number who report that they "Will consider" OER, growing from 31% in 2015-16 to 37% this year.



The results from this year's survey show strong growth in the proportion of faculty selecting OER for their large enrollment introductory-level courses. This has been coupled with small to moderate levels of growth in:

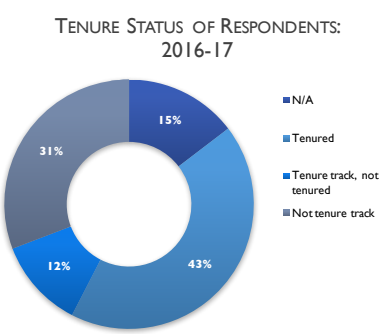
- Self-reported OER awareness
- Awareness of legal permissions
- Combined awareness of OER and legal permissions
- Proportion reporting that they "Will consider" OER in the future

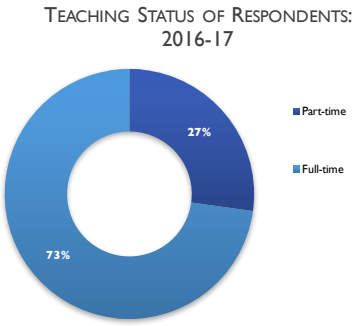
OER remains a minority (or even niche) product among higher education teaching faculty. Even in the area where it is strongest - large enrollment introductory-level courses - it still represents only a small portion of faculty selections. The trends over the past three years, and the stated willingness of additional faculty to consider it in the future, suggests continued but moderate growth.

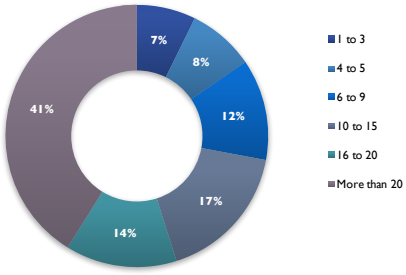
Methodology

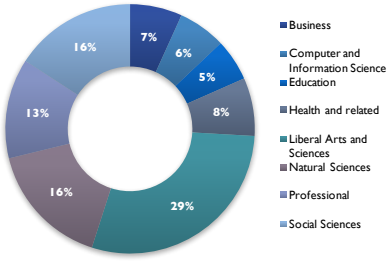
A national faculty sample is used in this analysis, designed to be representative of the overall range of faculty teaching in U.S. higher education. A multi-stage selection process was used for creating a stratified sample of all teaching faculty. The process began by obtaining data from a commercial source, Market Data Retrieval[11], which has over one and a half million faculty records and claims that its records represent 93% of all teaching faculty. All faculty who taught at least one course were selected for this first stage. Faculty were then randomly selected from the master list in proportion to the number contained in each Carnegie Classification, to produce a second-stage selection of teaching faculty members. This sample was then checked against opt-out lists, as well as for non-functioning email addresses.

A total of 2,711 faculty responded to a sufficient number of questions to be included in the analysis, representing the full range of higher education institutions (two-year, four-year, all Carnegie classifications, and public, private nonprofit, and for-profit) and the complete range of faculty (full- and part-time, tenured or not, and all disciplines). More than 73% of the respondents report that they are full-time faculty members. Over 26% teach at least one online course and 28% teach at least one blended course.









[11] http://schooldata.com/wordpress/wp-content/uploads/2014/06/MDR-Education-Catalog.pdf

Institutional descriptive data come from the National Center for Educational Statistics' IPEDS database[12]. After the data were compiled and merged with the IPEDS database, responders and nonresponders were compared to ensure that the survey results reflected the characteristics of the entire population of schools. The responses are compared for 35 unique categories based on the 2015 Carnegie Classification of Institutions of Higher Education.

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

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

- A second set of more detailed questions were directed only to those faculty members who had been through a decision process related to course materials over the past two years. Approximately 89% of all responding faculty qualified for these questions because they had created a new course, substantially modified an existing course, and/or selected new required course materials.

- A final set of textbook selection questions was directed at faculty members who had recently been through the decision process for a large enrollment undergraduate course. These faculty were presented with detailed lists of possible textbooks that they may have considered, to determine which books they considered and adopted.

The wording of the question is critical in measuring the level of OER awareness. Many academics confuse "open" with "free," while others confuse "open resources" with "open source," and assume OER refers only to open source software. The wording of the question for this report matches that used in previous reports in this series.

The wording used (listed below) was found to have the best balance in differentiating among the different levels of awareness, while avoiding leading those with no previous knowledge of the concept.

How aware are you of Open Educational Resources (OER)? OER is defined as "teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use and re-purposing by others." Unlike traditionally copyrighted material, these resources are available for "open" use, which means users can edit, modify, customize, and share them.

[12] http://nces.ed.gov/ipeds/datacenter/

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

Based on our testing, the results from this question may still slightly overstate the level of OER awareness, but this was considered a better option than leading the respondent. By using a series of additional questions, the results from this question can be adjusted to remove those who might have thought that they were aware of OER, but when probed did not have knowledge of all of the aspects that make up the concept.

Because licensing for remixing and reuse is central to the concept of OER, a question about the respondent's awareness of different legal permissions was asked of all respondents *before* any questions about OER awareness itself:

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

	Unaware	Somewhat Aware	Aware	Very Aware
Public Domain				
Copyright				
Creative Commons				

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

Appendix Tables

Selecting Educational Resources

Proportion of Faculty requiring Particular Materials for Their Course

Textbook(s)	68.2%
Articles/Case studies	52.7%
Video/Film	22.4%
Software	19.9%
Supplies (Laboratory, Art, etc.)	15.4%
Other	13.0%
Calculator	11.3%
Data sets	8.1%
Clicker (Classroom response system)	6.3%

Importance of Factors in Selecting Required Course Materials

	Works with my institution's LMS	Recommended by other faculty	Includes supplemental materials
Very important	16.8%	9.0%	21.7%
Important	18.3%	29.9%	20.8%
Somewhat important	20.9%	37.3%	23.2%
Not important	43.9%	23.9%	34.3%

	Adaptable/editable	Available in digital format	Available in print format
Very important	29.2%	32.4%	44.6%
Important	26.6%	32.3%	30.0%
Somewhat important	18.1%	25.2%	16.7%
Not important	26.2%	10.0%	8.7%

	Easy to find	Cost to the student	Comprehensive content
Very important	43.2%	55.5%	57.9%
Important	39.3%	32.6%	30.9%
Somewhat important	12.5%	10.1%	8.2%
Not important	4.9%	1.8%	3.0%

Importance of Factors in Selecting Required Course Materials by Type of Institution

	2015-16	2016-17
Works with my institution's LMS	34.1%	35.1%
Recommended by other faculty	44.3%	38.8%
Includes supplemental materials	41.0%	42.5%
Adaptable/editable	43%	55.8%
Available in digital format	Not Asked	64.8%
Available in print format	Not Asked	74.6%
Easy to find	69%	82.5%
Cost to the student	87%	88.1%
Comprehensive content	76%	88.8%

Cost to the Student

Importance of Cost in Selection of Curriculum Materials

	Very important	Important
Part-time	58.5%	29.7%
Full-time	54.5%	33.5%
N/A	57.1%	27.8%
Tenured	51.4%	33.6%
Tenure track, not tenured	56.3%	34.4%
Not tenure track	59.1%	33.2%
Under 35	64.3%	26.2%
35 - 44	58.1%	32.4%
45 - 54	57.6%	31.4%
55+	53.1%	32.6%

Average Cost of Required Textbook by Discipline

Discipline	Average Cost
Computer and Information Science	$68
Liberal Arts and Sciences	$69
Social Sciences	$74
Education	$87
Natural Sciences	$101
Business	$132
Professional	$155
Health and related	$182

Satisfaction With Cost for the Selected Textbook

	Very satisfied	Satisfied
Business	12.8%	31.9%
Education	18.2%	27.3%
Natural Sciences	14.1%	32.0%
Computer and Information Science	20.8%	35.4%
Liberal Arts and Sciences	26.8%	33.9%
Professional	28.6%	32.9%
Social Sciences	19.7%	43.6%
Health and related	18.2%	65.5%

Proportion of Faculty Reporting that at Least 90% of their Students had Purchased the Required Textbook by Discipline

Computer and Information Science	25.0%
Natural Sciences	26.7%
Business	28.3%
Social Sciences	31.1%
Liberal Arts and Sciences	35.5%
Education	41.2%
Health and related	51.0%
Professional	58.1%

Awareness of Open Educational Resources

AWARENESS OF OPEN EDUCATIONAL RESOURCES: 2016-17

Very Aware	9.6%
Aware	19.6%
Somewhat Aware	15.3%
Not Aware	55.5%

AWARENESS OF OPEN EDUCATIONAL RESOURCES: 2014-15 TO 2016-17

	2014-15	2015-16	2016-17
Very Aware	5%	7%	9.6%
Aware	15%	19%	19.6%
Somewhat Aware	14%	16%	15.3%
Not Aware	65.9%	58.4%	55.5%

Awareness of Licensing of Open Educational Resources

AWARENESS OF LEGAL PERMISSIONS: 2016-17

	Creative Commons	Public Domain	Copyright
Very Aware	19%	30%	42%
Aware	28%	40%	42%
Somewhat Aware	24%	22%	13%
Unaware	29%	8.7%	4%

AWARENESS OF CREATIVE COMMONS: 2014-15 TO 2016-17

	2014-15	2015-16	2016-17
Very Aware	14%	16%	19%
Aware	23%	22%	28%
Somewhat Aware	28%	28%	24%
Unaware	36%	34.2%	34%

AWARENESS OF OPEN EDUCATIONAL RESOURCES AND CREATIVE COMMONS: 2014-15 TO 2016-17

	2014-15	2015-16	2016-17
Very Aware	5%	6%	8.4%
Aware	12%	16%	16.6%
Somewhat Aware	10%	12%	12.1%
Not Aware	73.6%	66.3%	62.9%

Digital versus Print

Faculty Preference for Print or Digital Materials

Prefer print materials	31.7%
Neutral	39.4%
Prefer digital materials	28.9%

Prefer Digital Materials Over Print by Age of Faculty

Under 35	41.3%
35 - 44	36.5%
45 - 54	30.7%
55+	26.2%

Prefer Digital Materials Over Print by Discipline of Faculty

Professional	40.3%
Liberal Arts and Sciences	35.9%
Computer and Information Science	35.2%
Health and related	33.3%
Education	30.0%
Natural Sciences	25.6%
Business	23.9%
Social Sciences	22.4%

Educational Resource Decision Process

Activity of Faculty Selecting Required Course Materials

Created new course	24.1%
Substantially modified course	53.5%
New required materials	22.4%

Faculty Role in Decision of Required Course Materials

Solely responsible	66.8%
Lead a group	10.2%
Member of a group	12.5%
Influence the selection	5.4%
No role	2.1%
Other	3.1%

Use of Open-Licensed Textbook

2015-16	5.3%
2016-17	8.6%

Licensing of Required Textbooks

Digital Textbook(s)	Copyrighted	77.6%
	Creative Commons	3.6%
	Public Domain	7.0%
	NA/Don't Know	15.7%
Printed Textbook(s)	Copyrighted	95.6%
	Creative Commons	1.1%
	Public Domain	3.5%
	NA/Don't Know	3.2%

Potential Barriers

Barriers to Adoption of OER - 2016-17

Difficult to find what I need	50.2%
Lack of resources for my subject	46.6%
Concern about updates	28.6%
Not high-quality	27.7%
Questions on permission to use or change	23.5%
Lack of track record	19.6%
No good print options	19.5%
Lack of associated materials	18.4%
Not used by other faculty	16.4%
Not current, up-to-date	16.1%
Other	9.1%

Barriers to Adoption of OER - 2016-17 and 2015-16

	2015-16	2016-17
Difficult to find what I need	48%	50.2%
Lack of resources for my subject	49%	46.6%
Concern about updates	Not Asked	28.6%
Not high-quality	28%	27.7%
Questions on permission to use or change	21%	23.5%

The Process of Textbook Adoption for Introductory Courses

Importance of Factors in Selecting Required Course Materials - Teach Introductory Course or Not

	No	Teach Introductory Course
Comprehensive content	88.2%	90.2%
Cost to the student	87.2%	90.4%
Easy to find	81.7%	84.6%
Available in print format	72.5%	79.6%
Available in digital format	64.9%	64.3%
Adaptable/editable	55.1%	57.3%
Includes supplemental materials	42.3%	42.9%
Recommended by other faculty	37.8%	41.5%
Works with my institution's LMS	32.7%	41.2%

Barriers to Adoption of OER - 2016-17

	National	Teach Intro Course
Difficult to find what I need	50.2%	38.0%
Lack of resources for my subject	46.6%	33.2%
Concern about updates	28.6%	23.7%
Not high-quality	27.7%	36.5%
Questions on permission to use or change	23.5%	18.3%
Lack of track record	19.6%	19.5%
No good print options	19.5%	24.3%
Lack of associated materials	18.4%	37.5%
Not used by other faculty	16.4%	18.2%
Not current, up-to-date	16.1%	9.9%
Other	9.1%	12.7%

OpenStax adoption

	2015-16	2016-17
Adopted OpenStax	10.8%	16.5%

Satisfaction with Textbook

	Intro Course OpenStax	Intro Course Non-OpenStax	Non-Intro Courses
Extremely satisfied	24%	29%	32%
Moderately satisfied	60%	48%	52%
Slightly satisfied	10%	12%	8%
Neither satisfied nor dissatisfied	0%	4%	3%
Slightly dissatisfied	3%	3%	2%
Moderately dissatisfied	2%	2%	1%
Extremely dissatisfied	0%	2%	1%

Satisfaction with Selected Textbook - OpenStax User or Not

	Adopted OpenStax	Other
Easy to find	93%	92%
Recommended by faculty	83%	84%
Familiarity with brand/publisher	87%	84%
Comprehensive content	76%	79%
Supplemental instructor material	69%	77%
Works with LMS	70%	76%
Adaptable/editable	71%	64%
Cost to the student	86%	42%

Use Existing Materials or Develop Own

	OpenStax Adopter	All Other Teaching Introductory Course
Develop own curriculum	58.5%	54.0%
Neutral	27.7%	34.1%
Utilize third party content	13.8%	11.9%

Preference for Lecture Versus Facilitated Exploration

	OpenStax Adopter	All Other Teaching Introductory Course
Preference for lecture	13.6%	30.2%
Neutral	35.6%	41.9%
Preference for facilitated exploration	50.8%	27.9%

Preference for Print Versus Digital Materials

	OpenStax Adopter	All Other Teaching Introductory Course
Prefer print materials	17.5%	33.7%
Neutral	43.9%	41.0%
Prefer digital materials	38.6%	25.3%

Future Use

Will You Use Open Educational Resources in the Next Three Years?

Yes	7.4%
Will consider	36.9%
Might Consider	34.7%
Not interested	6.4%
No Opinion / Don't Know	14.6%

Will You Use Open Educational Resources in the Next Three Years: 2015-16 and 2016-17

	Yes	Will consider
2015-16	6.9%	31.3%
2016-17	7.4%	36.9%

Methodology

Tenure Status

N/A	14.6%
Tenured	42.9%
Tenure track, not tenured	11.6%
Not tenure track	30.8%

Teaching Status

Part-time	27.2%
Full-time	72.8%

Number of years teaching

1 to 3	7.3%
4 to 5	8.2%
6 to 9	12.5%
10 to 15	17.2%
16 to 20	13.7%
More than 20	41.2%

Discipline

Business	6.8%
Computer and Information Science	6.2%
Education	5.4%
Health and related	7.5%
Liberal Arts and Sciences	29.0%
Natural Sciences	16.2%
Professional	13.0%
Social Sciences	15.8%

APPENDIX: QUESTIONNAIRE

Welcome.

The Babson Survey Research Group is working with the William and Flora Hewlett Foundation in understanding faculty attitudes and practice on the selection of teaching materials. The foundation's Education Program is making investments to ensure that faculty and students have high-quality resources to meet their needs. We value your feedback and insight to help guide us in meeting this objective.

Most respondents can complete the survey in 10 minutes or less. All respondents will receive a copy of the study report.

Best Regards,
Dr. Jeff Seaman
Babson Survey Research Group

We value your privacy. All survey respondents are provided complete anonymity. No personally identifiable information is ever released.

In order to help us understand your instructional style, please use the sliders below to indicate where your instructional tendencies and preferences fall on these dimensions.

Develop my own curriculum and content _____ Utilize existing third-party content

Preference for lecture to deliver content _____ Preference for facilitated exploration of content

Prefer print materials _____ Prefer digital materials

Please tell us a bit about yourself. *Note: This information is used only to classify the survey responses. No individual-level data will be released. Information that you provide in this survey will not be used to target you for any marketing.*

Your status:

Teaching Status

Part-time

Full-time

Tenure Status

DROPDOWN LIST:
N/A
Tenured
Tenure track, not tenured
Not tenure track

Your Age

- ☐ Under 35
- ☐ 35 – 44
- ☐ 45 – 54
- ☐ 55+

Number of Years Teaching

DROPDOWN LIST:
Less than 1
1 to 3
4 to 5
6 to 9
10 to 15
16 to 20
More than 20

Which of the following have you taught during the most recent academic year?

Please use the following definitions:
Face-to-face Course: A course where all meetings are face-to-face, may use a learning management system (LMS) or web pages to post the syllabus and assignments.
Blended/Hybrid Course: A course where sufficient content is delivered online to create a reduction in the number of face-to-face class meetings.
Online Course: A course in which all, or virtually all, the content is delivered online. Typically have no face-to-face class meetings (with the possible exception of proctored exams). *Please check all that apply.*

- ❑ Face-to-face course
- ❑ Blended/Hybrid course
- ❑ Online Course

Over the past two years, either working alone or with others, have you...

- ❑ Created a new course (A course that was not previously listed in the course catalog)
- ❑ Substantially modified an existing course (Examples include making a substantive change in the content included in the course, changing the delivery method (e.g., converting a face-to-face course to online) or a similar change of this magnitude. Do not count the normal fine-tuning to a course during its delivery or the typical term-to-term refinements that all courses go through)
- ❑ Added or changed required course materials (Items listed in the course syllabus as required for all students, either acquired on their own or provided to all students through a materials fee, examples include a printed or digital textbook, other course-complete printed (coursepack) or digital materials, or materials such as laboratory supplies)
- ❑ None of the above

Considering all the new courses, substantially modified courses, and/or courses with changed required materials that you have been involved with over the past two years, please select the one with the largest enrollment. (If more than one course has the same enrollment, then select the one you are most familiar with.)
The following questions will apply to this selected course. This selected course is:

- ❍ A new course
- ❍ A substantially modified course
- ❍ A course with new required materials

Considering all the new courses that you have been involved with over the past two years, please select the one with the largest enrollment. (If more than one course has the same enrollment, then select the one you are most familiar with.)
The following questions will apply to this selected course.

Considering all the substantially modified courses that you have been involved with over the past two years, please select the one with the largest enrollment. (If more than one course has the same enrollment, then select the one you are most familiar with.)
The following questions will apply to this selected course.

Considering all the courses with changed required materials that you have been involved with over the past two years, please select the one with the largest enrollment. (If more than one course has the same enrollment, then select the one you are most familiar with.)
The following questions will apply to this selected course.

Whose decision was it to create the new course/modify the course/select new required course materials?
- ❍ The decision was mine alone
- ❍ The decision was made by me in concert with others
- ❍ The decision was made at the department level
- ❍ The decision was made at the division level
- ❍ The decision was made the institutional level
- ❍ Other

(Optional) Why was this decision taken?

Level of course
- ❍ Undergraduate
- ❍ Graduate
- ❍ Other

Is this course taught in multiple sections?
- ❍ Yes
- ❍ No

How would you classify this course?
- ❍ Introductory course
- ❍ Intermediate level course
- ❍ Advanced course
- ❍ N/A Does not apply

Course Type
- ❍ Face-to-face
- ❍ Blended
- ❍ Online

Is the course required?
- ❍ Yes, for all students
- ❍ Yes, for some students (e.g., majors)
- ❍ No

What is the discipline of the course?

DROPDOWN LIST:
Arts and Literature
Business Administration
Computer and Information Science
Economics
Education
Engineering
Humanities
Law
Linguistics / Language
Mathematics
Medicine

Natural Sciences
Philosophy
Psychology
Social Sciences
Other

What is your role in selecting the required materials for this course?

- ❍ I am solely responsible for the selection
- ❍ I lead a group that makes the selection
- ❍ I am a member of a group that makes the selection
- ❍ I influence the selection, but do not have decision-making power
- ❍ Others make the selection, I have no role
- ❍ Other _____

What types of course materials are required and/or recommended for this course? Required items are those listed in the course syllabus as required for all students, either acquired on their own or provided to all students through a materials fee. Recommended items are those that are NOT required of students, but are listed on the syllabus as recommended.

	Required	Recommended	Not required or recommended
Textbook(s)	❑	❑	❑
Articles/Case studies	❑	❑	❑
Calculator	❑	❑	❑
Clicker (Classroom response system)	❑	❑	❑
Data sets	❑	❑	❑
Software	❑	❑	❑
Supplies (Laboratory, Art, etc.)	❑	❑	❑
Video/Film	❑	❑	❑
Other	❑	❑	❑

How are the required textbooks for this course licensed? (Check all that apply.)

	Copyrighted	Public Domain	Creative Commons	Other	NA/Don't Know
Textbook(s) (print versions)	❑	❑	❑	❑	❑
Textbook(s) (digital versions)	❑	❑	❑	❑	❑

What is your best estimate of the cost to students to purchase the required materials for your course?

	Average cost to student
Required textbook(s) (if any)	
Non-textbook required materials (if any)	

What proportion of your students do you believe purchase ALL of the required materials for your course?

0% _____ 100% Required textbook(s)

0% _____ 100% Non-textbook required materials

(Optional) We welcome your thoughts on the cost of required course materials.

When selecting required course materials, how important are the following factors in your selection?

	Very important	Important	Somewhat important	Not important
Adaptable/editable	❍	❍	❍	❍
Available in print format	❍	❍	❍	❍
Available in digital format	❍	❍	❍	❍
Cost to the student	❍	❍	❍	❍
Comprehensive content	❍	❍	❍	❍
Easy to find	❍	❍	❍	❍
Includes supplemental materials (homework, quizzes, etc.)	❍	❍	❍	❍
Recommended by other faculty members	❍	❍	❍	❍
Works with my institution's Learning Management System (LMS)	❍	❍	❍	❍
Other	❍	❍	❍	❍

How satisfied are you with the required textbook(s) you are currently using for this course?

❍ Extremely satisfied
❍ Moderately satisfied
❍ Slightly satisfied
❍ Neither satisfied nor dissatisfied
❍ Slightly dissatisfied
❍ Moderately dissatisfied
❍ Extremely dissatisfied

How satisfied are you with the following aspects of the material available to you for selection as a required material for your course(s)?

	Very satisfied	Satisfied	Somewhat satisfied	Not satisfied
Cost to the student	❍	❍	❍	❍
Easy to find	❍	❍	❍	❍
Comprehensive content and activities	❍	❍	❍	❍
Works with my institution's Learning Management System (LMS)	❍	❍	❍	❍
Recommended by other faculty members	❍	❍	❍	❍
Adaptable/editable	❍	❍	❍	❍
Familiarity with brand/publisher	❍	❍	❍	❍
Includes test banks	❍	❍	❍	❍
Includes supplemental instructor material	❍	❍	❍	❍

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

	Unaware	Somewhat Aware	Aware	Very Aware
Public Domain	❍	❍	❍	❍
Copyright	❍	❍	❍	❍
Creative Commons	❍	❍	❍	❍

How aware are you of Open Educational Resources (OER)? OER is defined as "teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use and re-purposing by others." Unlike traditionally copyrighted material, these resources are available for "open" use, which means users can edit, modify, customize, and share them.

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

Have you used Open Educational Resources in any of the following ways for any of your courses?

	Used as required course material	Used as supplemental course material	Not used	Don't Know
Open Educational Resources	❍	❍	❍	❍

What are the three most important deterrents to your adoption of Open Educational Resources in your courses? Please drag up to three deterrents to the box on the right (the order in which you drag the three deterrents does not matter).

Three most important (in any order)

_____ Difficult to find what I need
_____ Not enough resources for my subject
_____ Not high-quality
_____ Not current, up-to-date
_____ Only digital - no good print options
_____ Not knowing if I have permission to use or change
_____ Concern about updates and staying current
_____ Lack of track record
_____ Not used by other faculty I know
_____ Lack of associated materials (homework, quizzes, etc.)
_____ Other

Do you think you will use Open Educational Resources in the next three years?

- ❍ Yes
- ❍ Will consider
- ❍ Might Consider
- ❍ Not interested
- ❍ No Opinion / Don't

We welcome your comments. Please let us know your thoughts on any of the issues covered in this survey.

May we quote your response? Published comments will only include attribution of the discipline of the faculty member and if they are full- or part-time ("Full-time Natural Sciences Faculty", "Part-time Mathematics Faculty"). No personal identifiable information will be included.

- ❍ Yes
- ❍ No

May we contact you with follow-up questions?

- ❍ Yes
- ❍ No

Thank you. This is the end of the survey - pressing the "Next" button below will record your responses. Note: Do not press "Next" until you are sure you are finished - once your survey has been recorded you will no longer be able to edit your responses.

BABSON SURVEY RESEARCH GROUP

The Babson Survey Research Group conducts regional, national, and international research, including survey design, sampling methodology, data integrity, statistical analyses and reporting.

http://www.onlinelearningsurvey.com/

Open Educational Resources

- What We Teach: K-12 School District Curriculum Adoption Process, 2017
- Opening the Textbook: Open Education Resources in U.S. Higher Education, 2015-16
- Opening Public Institutions: OER in North Dakota and the Nation, 2015
- Opening the Curriculum: Open Educational Resources in U.S. Higher Education
- Growing the Curriculum: Open Educational Resources in U.S. Higher Education

National Surveys of Online Education

- Digital Learning Compass: Distance Education Enrollment Report 2017
- Online Report Card: Tracking Online Education in the United States
- Grade Change: Tracking Online Education in the United States
- Changing Course: Ten Years of Tracking Online Education in the United States
- Going the Distance: Online Education in the United States, 2011
- Online Learning Trends in Private-Sector Colleges and Universities, 2011
- Class Differences: Online Education in the United States, 2010
- Learning on Demand: Online Education in the United States, 2009
- Staying the Course: Online Education in the United States, 2008
- Online Nation: Five Years of Growth in Online Learning
- Making the Grade: Online Education in the United States, 2006
- Growing by Degrees: Online Education in the United States, 2005
- Entering the Mainstream: The Quality and Extent of Online Education in the United States, 2003 and 2004
- Sizing the Opportunity: The Quality and Extent of Online Education in the United States, 2002 and 2003

Higher Education Faculty and Technology

- Digital Faculty, Professors, Teaching and Technology, 2012
- Conflicted: Faculty and Online Education, 2012

K-12 Online Learning Survey Reports

- Online Learning in Illinois High Schools: Has the Time Come?
- Class Connections: High School Reform and the Role of Online Learning
- K–12 Online Learning: A 2008 follow-up of the Survey of U.S. School District Administrators
- K–12 Online Learning: A Survey of U.S. School District Administrators

The A•P•L•U-Sloan National Commission on Online Learning

- Online Learning as a Strategic Asset, Volume II: The Paradox of Faculty Voices
- Online Learning as a Strategic Asset: A Survey of APLU Presidents and Chancellors
- Online Learning as a Strategic Asset: A Survey of NAFEO Presidents and Chancellors
- Online Learning as a Strategic Asset: A Survey of AIHEC Tribal College and University

Responses from over 2,700 U.S. faculty paint both a "Good news" and a "Bad news" picture for the role of open educational resources (OER) in U.S. higher education.

Levels of awareness of OER, the licensing tied to it, and overall adoption of OER materials, remains low. Only 10% of faculty reported that they were "Very aware" of open educational resources, with 20% saying that they were "Aware." Awareness of Creative Commons licensing also remains low, with only 19% of faculty reporting that they are "Very aware."

Faculty continue to report significant barriers to OER adoption. The most serious issues continue to be the effort needed to find and evaluate suitable material. Nearly one-half of all faulty report that "there are not enough resources for my subject" (47%) and it is "too hard to find what I need" (50%). In light of this, the reported level of adoption of open-licensed textbooks (defined as either public domain or Creative Commons) of only 9% is not a surprise. Many faculty members also voice concerns about the long-term viability of open educational resources, and worry about who will keep the materials current.

That said, there is also considerable cause for optimism among those who support OER. The awareness and adoption levels may be low, but they also show steady year-to-year improvements. OER also addresses a key concern of many faculty - the cost of materials. A majority of faculty classify cost as "Very important" for their selection of required course materials.

A particular area of OER success is among large enrollment introductory-level courses. These courses touch the largest numbers of students, are often taught in multiple sections (66%), and are typically required for some subset of students (79%). Faculty teaching these courses were presented with a list of the most commonly used commercial textbooks (up to twelve) for their specific course, along with an open text alternative from OpenStax, a non-profit OER publisher based out of Rice University.

The rate of adoption of OpenStax textbooks among faculty teaching large enrollment courses is now at 16.5% - a rate which rivals that of most commercial textbooks. This is a substantial increase over the rate observed last year (10.8%). Users of OpenStax textbooks also had levels of satisfaction equal to their peers teaching introductory level courses who had selected commercial textbooks. These adoptions address concerns about cost as well: faculty who did not select an OpenStax textbook reported an average cost of $125 for the required textbook, while those who did select an OpenStax text reported an average cost of $31.

GLOBAL HEALTHY LIVING FOUNDATION

BABSON Survey Research Group

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2016 Student Textbook and Course Materials Survey

Results and Findings

FLORIDA VIRTUAL CAMPUS

Office of Distance Learning & Student Services

October 7, 2016

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Executive Summary

During March and April 2016, more than 22,000 students participated in a Student Textbook and Course Materials Survey conducted by the Florida Virtual Campus's (FLVC) Office of Distance Learning and Student Services. The survey examined textbook affordability and acquisition at Florida's public higher education institutions. Previous surveys were conducted in 2010 and 2012. In this survey, students were asked to use their recent personal experiences to provide insight on how the cost of textbooks and course materials impact their education, purchasing behaviors, academic completion and success, the study aids they find most beneficial to their learning, and their use of financial aid to address these costs.

The purpose of the 2016 Student Textbook and Course Materials Survey was to identify:

1. The amount of money that Florida's public college and university students spent on textbooks and course materials during the spring 2016 semester,
2. The frequency with which students buy textbooks that are not used,
3. How students are affected by the cost of textbooks,
4. Which study aids students perceive to be the most beneficial to their learning,
5. Changes in student responses from previous surveys.

The results of the survey are sobering, as the findings suggest the high cost of textbook and instructional materials are forcing many Florida higher education students to make decisions that compromise their academic success.

This report is intended to assist FLVC, the Florida Legislature, and higher education institutions in better understanding the significant impact that high textbook and course materials costs have on the state's public college and university students. It is also intended to support the development of recommendations, best practices, and legislative changes that result in an effective, statewide approach to textbook and course materials affordability.

Research questions:

Question 1: How much do students spend on textbooks and other instructional materials?

Question 2: How many times do students buy textbooks that are not used?

Question 3: How are students affected by the cost of textbooks?

Question 4: What digital study aids do students perceive to be most beneficial to their grades?

Question 5: Compared to the results of the 2012 Student Textbook Survey, what are the differences in the money spent on textbooks?

Question 6: Compared to the results of the 2012 Student Textbook Survey, what are the differences in factors affected by cost of textbooks?

Question 7: Comparing university students and college students, what are the differences in the money spent on textbooks, money spent on course materials, costs covered by financial aid, and the number of textbooks purchased but never used.

Question 8: What are the differences in the money spent on textbooks for students in different degree levels?

Summary of Key Findings

Key Finding 1

The high cost of textbooks is negatively impacting student access, success, and completion.

The findings suggest that the cost of textbooks is negatively impacting student access to required materials (66.6% did not purchase the required textbook) and learning (37.6% earn a poor grade; 19.8% fail a course). Time to graduation and/or access to courses is also impacted by cost. Students reported that they occasionally or frequently take fewer courses (47.6%); do not register for a course (45.5%); drop a course (26.1%), or withdraw from courses (20.7%).

Key Finding 2

Textbook costs for Florida university and college students continue to trend higher.

More than half (53.2%) of students spent more than $300 on textbooks during the spring 2016 term, and 17.9% spent more than $500. Compared to the 2012 survey, there was a decrease in the cost category "$0–$100" from 9.8% to 8.2%, while cost category "$601 or more" increased from 8.5% to 8.9%. In addition to textbooks, 77.2% percent of respondents spent $200 or less on required course materials, while 10.6% of students reported spending $300 or more on required materials.

Key Finding 3

Required textbooks are purchased but not always used in course instruction.

The average survey participant purchased 2.6 textbooks that were not used during his or her academic career. That is a statistically significant increase from the 1.6 textbooks indicated in the 2012 survey.

Key Finding 4

In terms of the cost of textbooks and other course materials, college students are in worse shape than university students.

Of the college students surveyed, 56.3% spent $301 or more on textbooks, compared to 50.5% by university students. In addition, 12% of colleges students reported having spent $301 or more on course materials, compared to only 9.8% of university students.

Key Finding 5

Students in Associate or Bachelor's degree programs spent more on textbooks than students in Master's or Doctorate degree programs.

For those students seeking an Associate degree, Bachelor's degree with 0-60 credit hours, or Bachelor's degree with 61 or more credit hours, 54.6%, 57.8% and 55.0%, respectively, reported having spent $301 or more on textbooks. By comparison, 38% of students seeking a Master's degree, and 45% of students seeking a Doctorate degree, reported having spent $301 or more.

Key Finding 6

Florida students are reducing costs by a variety of means.

The most-used cost-saving measure reported by students is purchasing books from a source other than the campus bookstore (63.8%). A majority (84%) of survey participants reported a willingness to rent textbooks in order to reduce costs—up from 73.5% in the 2012 survey. In addition, more students (29.6%) reported that they chose to rent digital textbooks rather than buy lifetime access to a digital version of a textbook (3.1%), as a cost-saving strategy.

Key Finding 7

Financial aid covers less textbook costs now than in 2012.

For the spring 2016 term, only 70.7% of students reported that they received financial aid, which is down from 75% in 2012. Furthermore, of the 70.7% who received financial aid, nearly one-third (29.2%) reported that their financial aid covered none of their textbooks costs, which is slightly higher than the 29% reported in 2012. Of students whose financial aid did cover some portion of their textbook costs, only 20.6% reported that all of their textbook costs were covered, down from 27.9% in 2012.

2016 Student Textbook and Course Materials Survey

Introduction

The financial burden that students must bear for textbooks and course materials — and its impact on their academic choices and success — is a mounting concern for Florida's higher education community.

In response to a legislative charge (Section (s.) 1004.091(2)), Florida Statutes (F.S.), a statewide task force was created to explore this issue. The task force produced an Open Access Textbook Task Force Report, which provided rationale for open access textbooks and a plan to promote and increase the use of open access textbooks in Florida. Subsequently, in 2010, and again in 2012, Florida Student Textbook Surveys were conducted to assess student perception of textbook costs and open educational resources (OERs). Findings from the 2012 Student Textbook Survey continue to be used throughout the country in support of legislative decision-making and reports (2016, Taylor, M.), and in Florida to help support requests for institution or legislative action.

Most recently, in March-April 2016, the former Florida Distance Learning Consortium (now the Office of Distance Learning and Student Services within the statewide Florida Virtual Campus) conducted a Student Textbook and Course Materials Survey with more than 22,000 students of Florida's 40 public colleges and universities. The objective of the survey, which examined textbook affordability and acquisition, was to learn from students' recent personal experiences how the cost of textbooks and course materials is impacting their education, their purchasing behaviors, the study aids they find to be most beneficial to their learning, and their use of financial aid to address these costs.

Methodology

The 2016 Student Textbook and Course Materials Survey was conducted to help education leaders and policy makers better understand how textbook and course material costs are impacting student perceptions, academic decisions, progress, and perceived value of educational resources.

All 40 of Florida's public postsecondary institutions were requested to invite their students to take part in the online survey, which was a follow-up to the 2010 and 2012 Student Textbook Surveys.

A. Purpose

The purpose of the 2016 Student Textbook and Course Materials Survey was to identify:

1. The amount of money that Florida's public college and university students spent on textbooks and course materials during the spring 2016 semester,
2. The frequency with which students buy textbooks that are not used,

3. How students are affected by the cost of textbooks,
4. Which study aids students perceive to be the most beneficial to their learning,
5. Changes in student responses from previous iterations of the survey.

B. Participants

All 40 public colleges and universities in Florida participated in the study. Included among the 40 was Florida Polytechnic University, which opened for classes in 2014, and thus was not included in the 2012 survey.

The Florida College System (FCS) sent requests for participation to Chief Academic Officers at all colleges, and the university Board of Governors (BOG) sent requests for participation to university Provosts. Those requests for participation contained links to the survey and its purpose, and instructed that the survey be administered between March 24, 2016 and April 29, 2016. Institutions were requested to use campus communication channels to solicit student participation in the survey.

C. Survey

The 2016 survey included 11 multiple choice, multiple select, and constructed response items drawn from the 2012 survey's cost-related questions, as well as additional response items that reflected the current legislative status and concerns in Florida. The goals, research questions, and survey items were developed through consultation with the FCS and BOG.

The estimated time required to complete the survey was ten minutes. The first few items addressed basic demographics (e.g., degree, institution, area of study). The remainder of the survey pertained to money spent on textbooks, textbook use, academic impact of textbook costs, and perceived value of different study aids.

D. Research Questions

Question 1: How much do students spend on textbooks and other course materials?

Question 2: How many times do students buy textbooks that are not used?

Question 3: How are students affected by the cost of textbooks?

Question 4: What digital study aids do students perceive to be most beneficial to their grades?

Question 5: Compared to the results of the 2012 Student Textbook Survey, what are the differences in the money spent on textbooks?

Question 6: Compared to the results of the 2012 Student Textbook Survey, what are the differences in factors affected by cost of textbooks?

Question 7: Comparing university students and college students, what are the differences in the money spent on textbooks, money spent on course materials, costs covered by financial aid, and the number of textbooks purchased but never used.

Question 8: What are the differences in the money spent on textbooks for students in different degree levels?

E. Data Analyses

Descriptive statistics were used to calculate all survey items. Means and standard deviations were used to calculate all continuous variables and Likert-type scales. Frequencies and percentages were presented for nominal and ordinal-scaled variables.

For research questions 1–4, frequencies and percentages were calculated for each category. For research questions 5–8, Chi square tests were used to test the statistical differences.

Key Finding 1

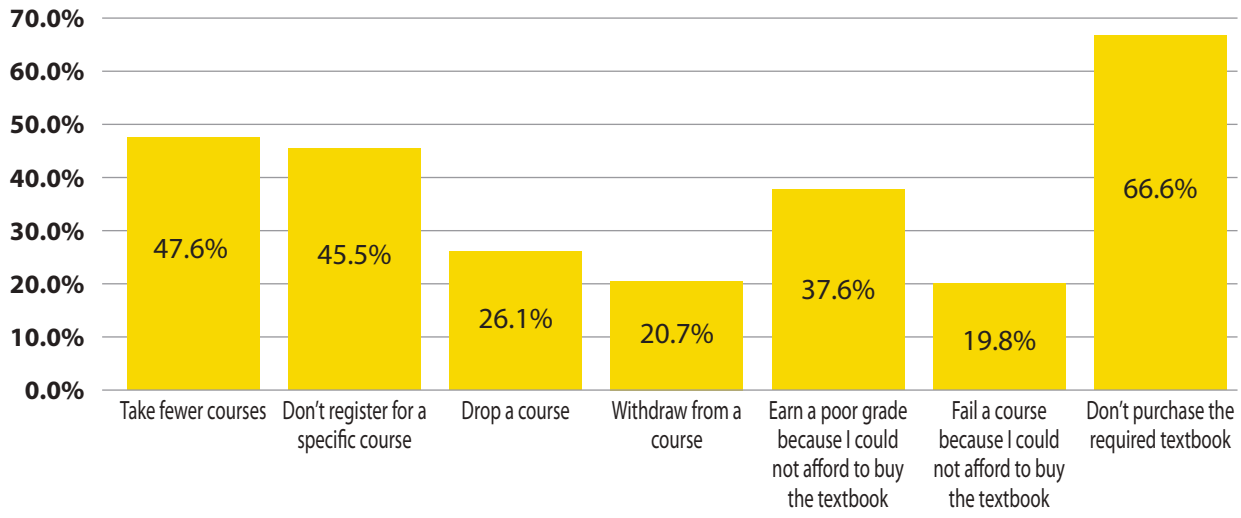
The high cost of textbooks is negatively impacting student access, success, and completion.

The findings suggest that the cost of textbooks is negatively impacting student access to required materials (66.6% did not purchase the required textbook) and learning (37.6% earn a poor grade; 19.8% fail a course). Time to graduation and/or access is also impacted by cost. Students reported that they occasionally or frequently take fewer courses (47.6%); do not register for a course (45.5%); drop a course (26.1%), or withdraw from courses (20.7%).

OVERALL

Students reported that the high cost of textbooks impacted their learning and academic choices in a variety of ways.

Chart 1: Impact of Textbook Costs on Students



COMPARED TO THE 2012 SURVEY

- Take fewer courses (47.6%, down from 49.1% in the 2012 survey)
- Don't register for a course (45.5%, up from 45.1% in the 2012 survey)
- Drop a course (26.1%, down from 26.7% in the 2012 survey)
- Withdraw from a course (20.7%, slightly up from 20.6% in the 2012 survey)
- Earn a poor grade (37.6%, up from 34% in the 2012 survey)
- Fail a course (19.8%, up from 17% in the 2012 survey)
- Don't purchase the required textbook (66.5%, up from 63.6% in the 2012 survey).

Table 1: Impact of Textbook Costs (2016 and 2012)

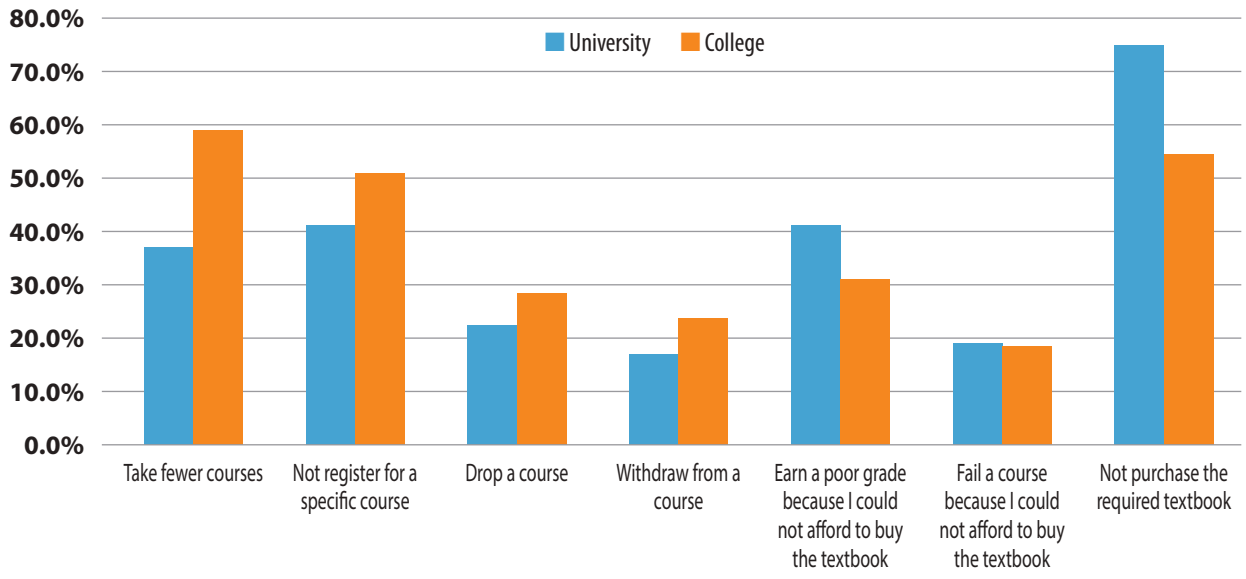
Answer Options	2016	2012
Take fewer courses	47.6%	49.1%
Not register for a course	45.5%	45.1%
Drop a course	26.1%	26.7%
Withdraw from a course	20.7%	20.6%
Earn a poor grade	37.6%	34.0%
Fail a course	19.8%	17.0%
Not purchase the required textbook	66.5%	63.6%

Note: 2016 survey n = 20,557; 2012 survey n = 18,587

COLLEGE & UNIVERSITY

Compared to university students, college students are more likely to take fewer courses, not register for a specific course, drop a course, or withdraw from a course due to the cost of textbooks. University students are more likely to not purchase a required textbook, earn a poor grade, or fail a course due to textbook costs.

Chart 2: Impact of Textbook Costs (University and College)

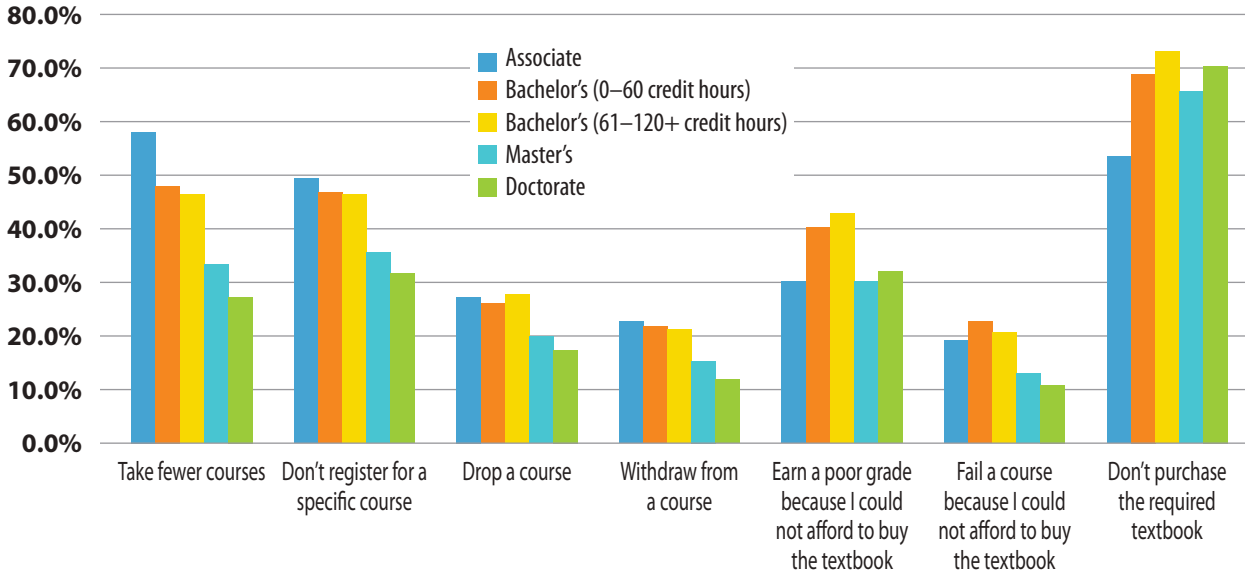


Note: University n = 11,324; College n = 8,322. Does not include students enrolled in both university and college.

DEGREE LEVEL

Students in Associate degree programs reported the highest percentage of taking fewer courses (58%), not registering for a specific course (49.2%), and withdrawing from a course (22.5%) due to textbook costs. Students in Bachelor's degree programs with 0–60 credit hours reported the highest percentage of failing a course (22.8%) due to those costs, and students in Bachelor's degree programs with 61 or more credits reported the highest percentage of dropping a course (27.6%), earning a poor grade (42.9%), and not purchasing the required textbook (72.8%). It is worth noting that students in graduate degree programs (Master's and Doctorate) did not rank the highest percentage in any of the categories.

Chart 3: Impact of Textbook Costs (by Degree Level)



Note: Associate n = 4,904; Bachelor's (0–60 credit hours) n = 4,213; Bachelor's (61–120+ credit hours) n = 8,463; Master's n = 1,781; Doctorate n = 784.

Key Finding 2

Textbook costs for Florida university and college students continue to trend higher.

More than half (53.2%) of students spent more than $300 on textbooks during the spring 2016 term, and 17.9% spent more than $500. Compared to the 2012 survey, there was a decrease in the cost category "$0–$100" from 9.8% to 8.2%, while cost category "$601 or more" increased from 8.5% to 8.9%. In addition to textbooks, 77.2% percent of respondents spent $200 or less on required course materials, while 10.6% of students reported spending $300 or more on required materials.

OVERALL

During the spring 2016 term, 53.2% of students spent more than $301 on textbooks, and 17.9% spent more than $500. The most frequently selected response regarding textbook cost was "$201-300" (21.7%), followed closely by "$301-400" (20.7%). Approximately 75% of the respondents reported spending more than $200 on textbooks during the spring 2016 term.

Table 2: Textbook Costs

Q: How much did your textbooks cost for the spring 2016 term?

Answer Options	Responses	Percentage
$0 – 100	1,688	8.2%
$101 – 200	3,174	15.4%
$201 – 300	4,465	21.7%
$301 – 400	4,258	20.7%
$401 – 500	2,993	14.6%
$501 – 600	1,844	9.0%
$601 or more	1,830	8.9%
Other (please specify)	305	1.5%

Note: n = 20,557

COMPARED TO THE 2012 SURVEY

Compared to the 2012 survey, there was a decrease in the cost category "$0–$100" in 2016, from 9.8% to 8.2%. Cost category of "$601 or more" increased from 8.5% to 8.9%. See Appendix A, Table A-4, for additional data.

Key Finding 3

Required textbooks are purchased but not always used in course instruction.

The average survey participant purchased 2.6 textbooks that were not used during his or her academic career. That is a statistically significant increase from the 1.6 textbooks indicated in the 2012 survey.

OVERALL

To be consistent with the 2012 survey, answers greater than 15 were set as outliers. After removing outliers, the 2016 survey participants purchased an average of 2.6 textbooks that were not used during his or her academic career.

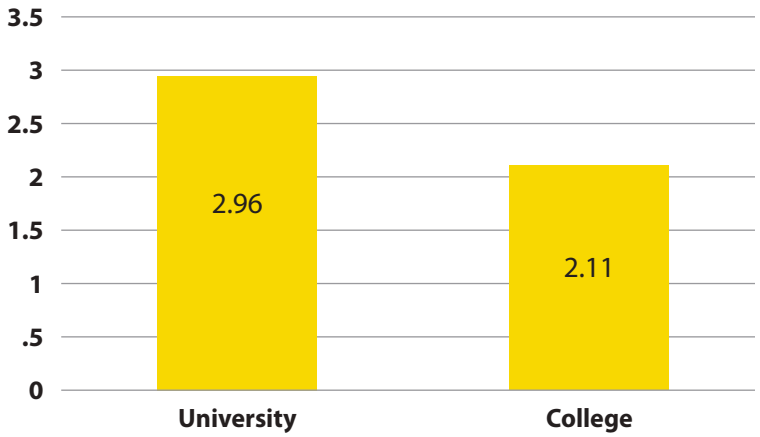
COMPARED TO THE 2012 SURVEY

In the 2012 survey, participants purchased an average of 1.6 textbooks that were not used during their academic careers. The difference is statistically significant.

COLLEGE & UNIVERSITY

Chart 3, below, illustrates the average number of textbooks that were purchased, but not used, by university and college students who participated in the 2016 survey.

Chart 4: Textbooks Purchased But Not Used (University and College)



Note: University n = 11,324; College n = 8,322. Does not include students enrolled in both university and college.

Key Finding 4

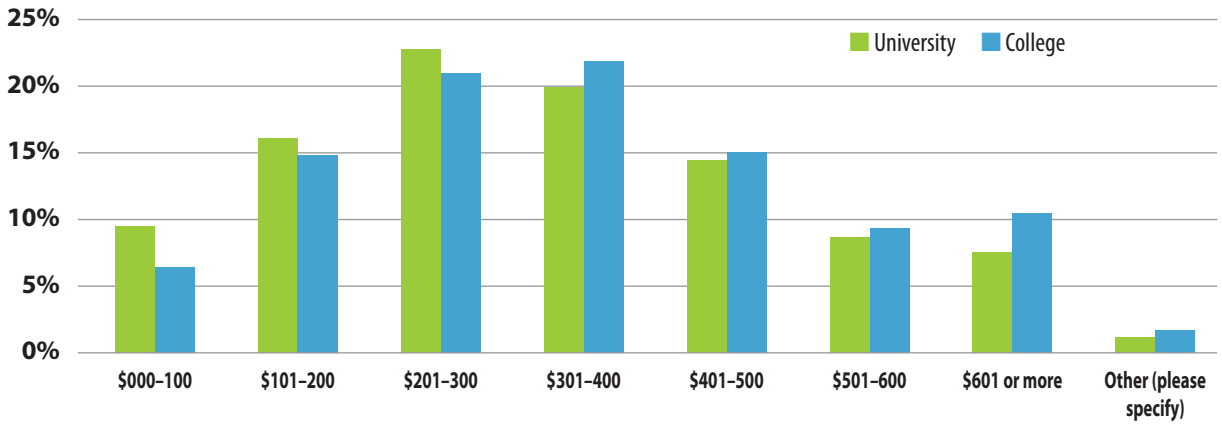
In terms of the cost of textbooks and other course materials, college students are in worse shape than university students.

Of the college students surveyed, 56.3% spent $301 or more on textbooks, compared to 50.5% by university students. In addition, 12% of colleges students reported having spent $301 or more on course materials, compared to only 9.8% of university students.

OVERALL

Compared to university students, there is a higher percentage of college students in high-cost categories. Of the college students surveyed, 56.3% spent $301 or more on textbooks, compared to 50.5% by university students.

Chart 5: Textbook Cost (University and College)



Note: University n = 11,324; College n = 8,322. Does not include students enrolled in both university and college.

For the spring 2016 term, 77.2% percent of students surveyed spent $200 or less on required course materials. By comparison, 10.6% of students spent $300 or more on required course materials.

Table 3: Amount Spent on Course Materials

Q: Excluding textbooks, how much did you spend on required course materials for the spring 2016 term (handbooks, guides, course packets, and other print or digital learning materials)?

Answer Options	Responses	Percentage
$0 – 100	10,405	50.6%
$101 – 200	5,469	26.6%
$201 – 300	2,415	11.7%
$301 – 400	926	4.5%
$401 – 500	442	2.2%
$501 – 600	294	1.4%
$601 or more	482	2.3%
Other (please specify)	124	0.6%

Note: n = 20,557

Table 4: Amount Spent on Course Materials (University and College)

	University		College	
Answer Options	Responses	Percentage	Responses	Percentage
$0 – 100	5,859	51.7%	4,165	50.0%
$101 – 200	3,025	26.7%	2,181	26.2%
$201 – 300	1,319	11.6%	974	11.7%
$301 – 400	477	4.2%	397	4.8%
$401 – 500	220	1.9%	188	2.3%
$501 – 600	139	1.2%	137	1.6%
$601 or more	232	2.0%	219	2.6%
Other (specify)	53	0.5%	61	0.7%

Note: University n = 11,324; College n = 8,322. Does not include students enrolled in both university and college.

Key Finding 5

Students in Associate or Bachelor's degree programs spent more on textbooks than students in Master's or Doctorate degree programs.

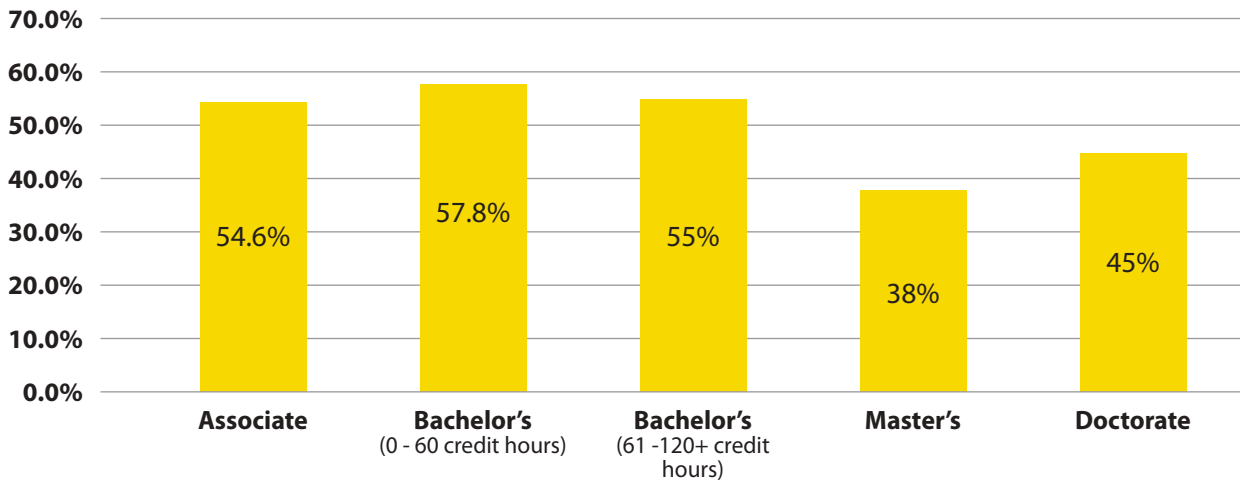
For those students seeking an Associate degree, Bachelor's degree with 0-60 credit hours, or Bachelor's degree with 61 or more credit hours, 54.6%, 57.8% and 55.0%, respectively, reported having spent $301 or more on textbooks. By comparison, 38% of students seeking a Master's degree, and 45% of students seeking a Doctorate degree, reported having spent $301 or more.

OVERALL

For the spring 2016 semester, students seeking an Associate degree or Bachelor's degree spent more on textbooks than students in Master's or Doctorate degree programs. For those students seeking an Associate degree, Bachelor's degree with 0-60 credit hours, or Bachelor's degree with 61 or more credit hours, 54.6%, 57.8% and 55.0%, respectively, reported having spent $301 or more on textbooks.

Thirty-eight percent of students seeking a Master's degree reported that they spent $301 or more for textbooks during the spring 2016 semester. Forty-five percent of students in Doctorate degree programs reported having spent $301 or more on textbooks during that same period.

Chart 6: Percentage of Students That Spent $301 or More (by Degree Level)



Key Finding 6

Florida students are reducing costs by a variety of means.

The most-used cost-saving measure reported by students is purchasing books from a source other than the campus bookstore (63.8%). A majority (84%) of survey participants reported a willingness to rent textbooks in order to reduce costs—up from 73.5% in the 2012 survey. In addition, more students (29.6%) reported that they chose to rent digital textbooks rather than buy lifetime access to a digital version of a textbook (3.1%), as a cost-saving strategy.

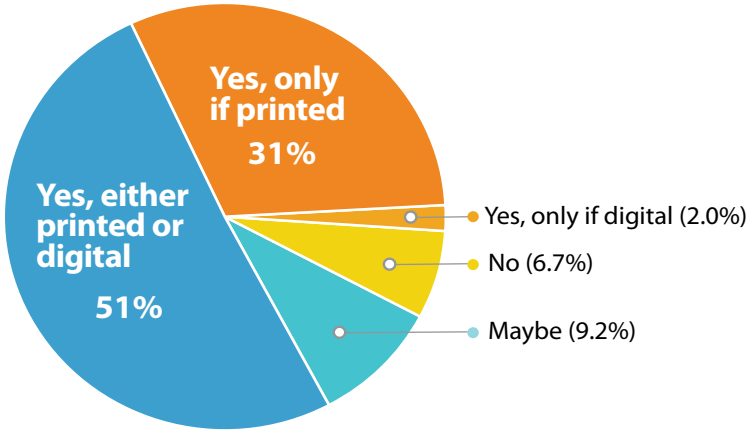
OVERALL

Students reported using a variety of measures to reduce their textbook costs, and almost all students (96.8%) reported using one or more approaches. The most-used cost-saving measure reported by students (63.8%) is purchasing books from a source other than the campus bookstore. Almost one-half of the students (48.8%) reported having bought used copies from the campus bookstore and rented printed textbooks (47.0%). Thirty-nine percent of students reported having sold used books to save money.

Renting textbooks is a popular option for the majority of students surveyed. Among students who are willing to rent textbooks, slightly more half (51%) are willing to rent either printed or digital textbooks. It is worth noting that 31% of students reported that they will only rent printed textbooks.

"Rent digital textbooks" was added to the 2016 survey as a new category. Some students (29.6%) reported that they had rented digital textbooks for cost savings. A shift from buying lifetime access to buying digital textbooks can be seen (decreased from 28.5% to 3.1%) as can a shift in renting digital textbooks.

Chart 7: Willingness to Rent Textbooks



COMPARED TO THE 2012 SURVEY

Compared to the 2012 survey, students are increasingly willing to rent textbooks. The "No" and "Maybe" categories decreased from the 2012 survey (26.5% to 15.9%). A significant percentage of students surveyed (84%) participants reported a willingness to rent textbooks as a means of reducing costs. This is up from 73.5% in the 2012 survey.

Table 5: Measures to Reduce Textbook Costs (2016 and 2012)

Answer Options	2016	2012
I do not attempt to reduce textbook costs	3.2%	2.7%
Buy used copies from the campus bookstore	48.8%	63.4%
Buy books from a source other than the campus bookstore	63.8%	78.3%
Rent digital textbooks	29.6%	N/A
Buy lifetime access to a digital version of a textbook	3.1%	28.5%
Rent only the digital textbook chapters needed for the course	5.4%	7.5%
Rent printed textbooks	47.0%	41.5%
Use a reserve copy from the campus library	10.4%	9.8%
Share books with classmates	23.7%	20.5%
Sell used books	39.0%	43.3%

Note: 2016 survey n = 20,557; 2012 survey n = 18,587.

COLLEGE & UNIVERSITY

Refer to Appendix A, Table A-10, for additional data.

Table 6: Measures to Reduce Textbook Costs (University and College)

Answer Options	University	College
I do not attempt to reduce textbook costs	1.6%	5.2%
Buy used copies from the campus bookstore	46.7%	51.6%
Buy books from a source other than the campus bookstore	71.6%	54.0%
Rent digital textbooks	32.3%	25.6%
Buy lifetime access to a digital version of a textbook	3.9%	2.2%
Rent only the digital textbook chapters needed for the course	5.9%	4.5%
Rent printed textbooks	49.4%	44.4%
Use a reserve copy from the campus library	13.9%	5.7%
Share books with classmates	29.5%	15.9%
Sell used books	43.1%	33.7%
Other (please specify)	11.2%	7.3%

Note: University n = 11,324; College n = 8,322. Does not include students enrolled in both university and college.

Key Finding 7

Financial aid covers less textbook costs now than in 2012.

For the spring 2016 term, 70.7% of students reported that they received financial aid, which is down from 75% in 2012. Furthermore, of the 70.7% who received financial aid, nearly one-third (29.2%) reported that their financial aid covered none of their textbooks costs, which is slightly higher than the 29% reported in 2012. Of students whose financial aid did cover some portion of their textbook costs, only 20.6% reported that all of their textbook costs were covered, down from 27.9% in 2012.

OVERALL

For the spring 2016 term, 70.7% of students surveyed reported having received financial aid. Of the students who received financial aid, 20.6% reported that financial aid covered the total cost of their textbooks, 50% reported that financial aid covered some of their textbook costs, and 29.2% reported that financial aid covered no portion of their textbooks.

Table 7:: Percentage of Textbooks Covered by Financial Aid

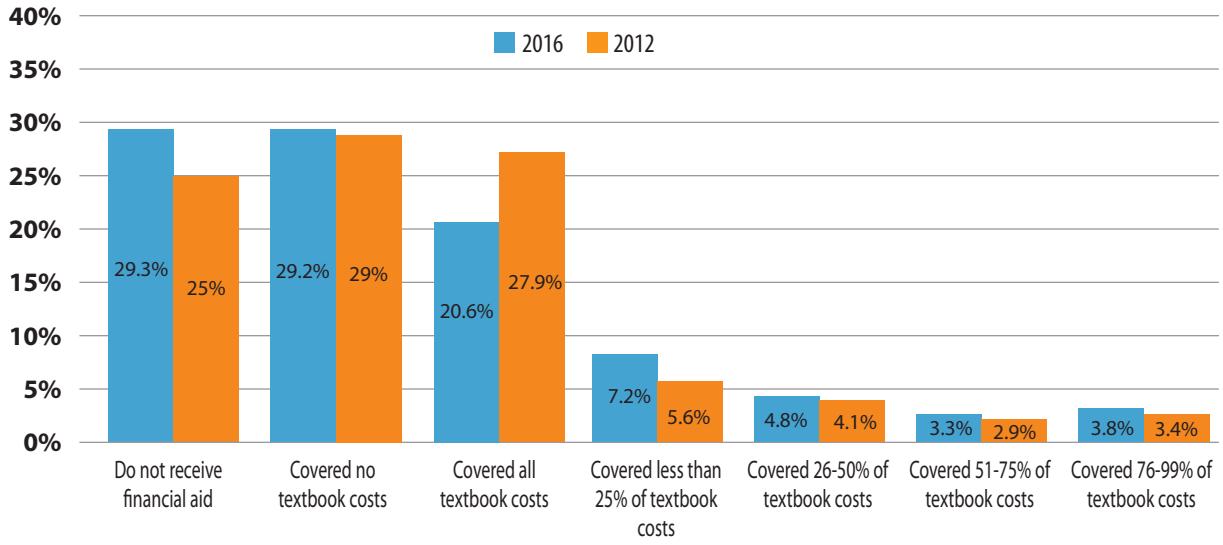
Q: What percentage of your textbook costs is covered by financial aid for the spring 2016 term?

Answer Options	Responses	Percentage
I do not receive financial aid	6,030	29.3%
None	6,007	29.2%
Less than 25%	1,487	7.2%
26% to 50%	984	4.8%
51% to 75%	688	3.3%
76% to 99%	784	3.8%
All of my textbook costs	4,227	20.6%
Other (please specify)	350	1.7%

COMPARED TO THE 2012 SURVEY

- Do not receive financial aid (29.3%, up from 25% in the 2012 survey)
- Covered no textbook costs (29.2%, up from 29% in the 2012 survey)
- Covered all textbook costs (20.6%, down from 27.9% in the 2012 survey)
- Covered less than 25% of textbook costs (7.2%, up from 5.6% in the 2012 survey)
- Covered 26-50% of textbook costs (4.8%, up from 4.1% in the 2012 survey)
- Covered 51-75% of textbook costs (3.3%, up from 2.9% in the 2012 survey)
- Covered 76-99% of textbook costs (3.8%, up from 3.4% in the 2012 survey)

Chart 8: Textbook Costs Covered by Financial Aid (2016 and 2012)



COLLEGE & UNIVERSITY

Table 8, below, breaks down the percentage of textbook costs covered by financial aid for university and college students.

Table 8: Textbook Costs Covered by Financial Aid (University and College)

	University		College	
Answer Options	Responses	Percentage	Responses	Percentage
I do not receive financial aid	2,844	25.1%	2,916	35.0%
None	4,399	38.8%	1,346	16.2%
Less than 25%	974	8.6%	431	5.2%
26% to 50%	575	5.1%	356	4.3%
51% to 75%	367	3.2%	278	3.3%
76% to 99%	356	3.1%	397	4.8%
All of my textbook costs	1,639	14.5%	2,439	29.3%
Other (please specify)	170	1.5%	159	1.9%

Note: University n = 11,324; College n = 8,322. Does no include students enrolled in both university and college.

Appendix A: Survey Data

Participants

More than 22,000 students from all of Florida's 40 public universities and colleges participated in the survey (n = 22,906). Of the respondents, 13,537 attend universities, 10,327 attend college, and 968 are enrolled in both a university and a college.

Degree Levels

More than half of the students (61%) indicated that they are pursuing a Bachelor's degree, 24.3% are pursuing an Associate degree, and 12.6% are pursuing a Master's or Doctorate degree. The 2016 survey has a similar composition of degree types as the 2012 survey.

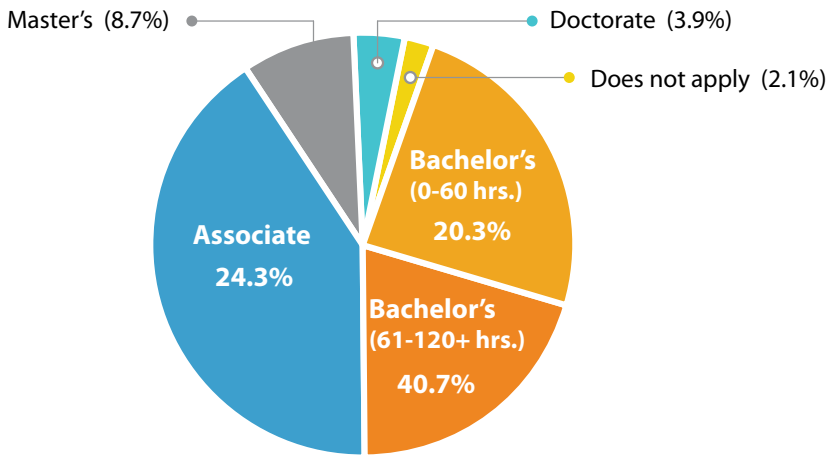
Table A-1: Degree Levels

Q: Which degree are you seeking?

Answer Options	Responses	Percentage
Associate	5,566	24.3%
Bachelor's (0–60 credit hours)	46,39	20.3%
Bachelor's (61 -120+ credit hours)	9,326	40.7%
Master's	1,982	8.7%
Doctorate	903	3.9%
Does not apply	479	2.1%

Note: n = 22,895

Chart A-1: Degree Levels



Major Areas of Study

Students from a wide range of study areas responded to the survey. Excluding the "Other" category, the top five areas of study, by percentage, are: Business, Management, Marketing and Related Support services (16.9%); Health Professions and Related Programs (13.7%); Biological and Biomedical Sciences (8.8%); Education (7.6%); and Psychology (6.7%).

Table A-2: Areas of Study

Q: What is your major area of study?

Answer Options	Pct.	Count
Agriculture, Agriculture Operations, and Related Sciences	0.4%	100
Architecture and Related Services	0.4%	100
Area, Ethnic, Cultural, Gender and Group Studies	0.5%	112
Biological and Biomedical Sciences	8.8%	2,005
Business, Management, Marketing and Related Support services	16.9%	3,879
Communication, Journalism, and Related Programs	3.1%	707
Communications Technologies/Technicians and Support services	0.9%	196
Computer and Information Sciences and Support services	6.2%	1,416
Construction Trades	0.2%	55
Education	7.6%	1,751
Engineering	6.0%	1,366
Engineering Technologies and Engineering Related Fields	1.2%	268
English Language and Literature/Letters	1.7%	390
Family and Consumer Sciences/Human Sciences	0.7%	155
Foreign Languages, Literatures, and Linguistics	1.0%	227
Health Professions and Related Programs	13.7%	3,147
History	1.2%	277
Homeland Security, Law Enforcement, Firefighting and Related	1.5%	332
Legal Professions and Studies	2.4%	557
Liberal Arts and Sciences, General Studies and Humanities	2.6%	595
Library Science	0.4%	91
Mathematics and Statistics	1.5%	350
Mechanic and Repair Technologies/Technicians	0.1%	22
Medical Science	5.7%	1,296
Multi/Interdisciplinary Studies	0.4%	95
Natural Resources and Conservation	0.5%	118
Parks, Recreation, Leisure and Fitness Studies	0.3%	64
Personal and Culinary Services	0.1%	19
Philosophy and Religious Studies	0.5%	108
Physical Sciences	1.6%	376
Precision Production	0.1%	13
Psychology	6.7%	1,543
Public Administration and Social Service Profession	2.0%	453
Social Sciences	4.5%	1,031

Answer Options	Pct.	Count
Theology and Religious Vocations	0.1%	25
Transportation and Materials Moving	0.4%	85
Visual and Performing Arts	1.9%	428
Technology Education/Industrial Arts	0.5%	104
Other (please specify)	14.3%	3,276

Note: n = 22,895

Textbook Costs

During the spring 2016 term, 53.2% of students spent more than $300 on textbooks, and 17.9% spent more than $500. The most frequent response (21.7%) was "$201-300," followed closely by "$301-400" (20.7%). The majority of respondents (75%) reported having spent more than $200 on textbooks during the spring 2016 term.

Table A-3: Textbook Costs

Q: How much did your textbooks cost for the spring 2016 term?

Answer Options	Responses	Percentage
$0 – 100	1,688	8.2%
$101 – 200	3,174	15.4%
$201 – 300	4,465	21.7%
$301 – 400	4,258	20.7%
$401 – 500	2,993	14.6%
$501 – 600	1,844	9.0%
$601 or more	1,830	8.9%
Other (please specify)	305	1.5%

Table A-4: Textbook Cost Comparison (2016 and 2012)

Category	2016	2012
$0–$100	8.2%	9.8%
$101–$200	15.4%	14.4%
$201–$300	21.7%	20.6%
$301–$400	20.7%	19.9%
$401–$500	14.6%	15.3%
$501 – $600	9.0%	10.2%
$601 or more	8.9%	8.5%
Other	1.5%	1.3%

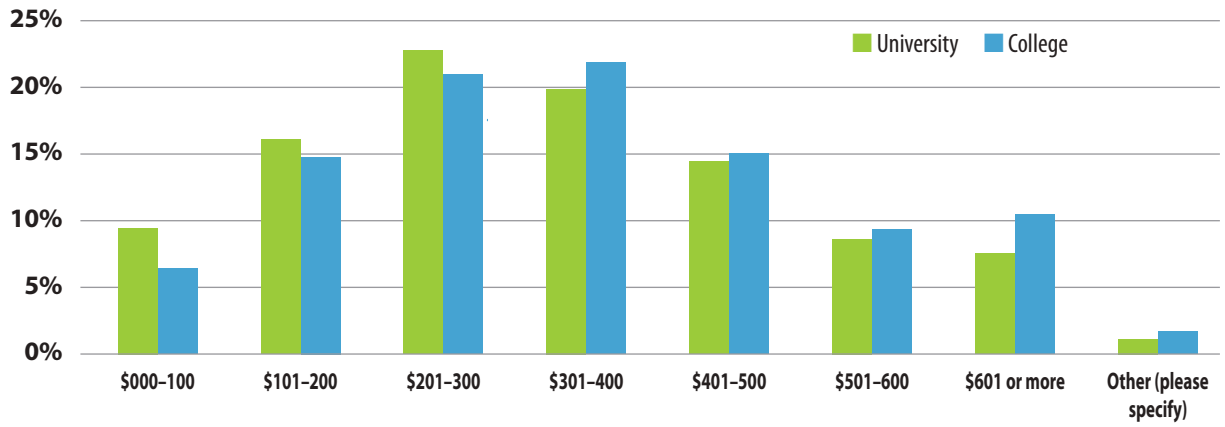
2016 survey n = 20,557; 2012 survey n = 19,608

Table A-5: Textbook Cost Comparison (University and College)

	University		College	
Answer Options	Responses	Percentage	Responses	Percentage
$0 – 100	1,087	9.6%	548	6.6%
$101 – 200	1,827	16.1%	1,218	14.6%
$201 – 300	2,543	22.5%	1,734	20.8%
$301 – 400	2,248	19.9%	1,806	21.7%
$401 – 500	1,611	14.2%	1,229	14.8%
$501 – 600	983	8.7%	773	9.3%
$601 or more	877	7.7%	871	10.5%
Other (please specify)	148	1.3%	143	1.7%

Note: University n = 11,324; College n = 8,322. Does not include students enrolled in both university and college.

Chart A-2: Textbook Cost Comparison (University and College)



Note: University n = 11,324; College n = 8,322. Does not include students enrolled in both university and college.

Table A-6: Textbook Cost Comparison (by Degree Level)

	Degree Level										
Answer	Associate		Bachelor's (0–60 hours)		Bachelor's (61 –120+ hours)		Master's		Doctorate		Other
$0 – 100	319	6.5%	217	5.2%	655	7.7%	265	14.9%	152	19.4%	80
$101 – 200	754	15.4%	587	13.9%	1,246	14.7%	373	20.9%	119	15.2%	95
$201 – 300	1,068	21.8%	938	22.3%	1,801	21.3%	425	23.9%	136	17.3%	97
$301 – 400	1,078	22.0%	958	22.7%	1,729	20.4%	313	17.6%	120	15.3%	60
$401 – 500	709	14.5%	679	16.1%	1,288	15.2%	195	10.9%	86	11.0%	36
$501 – 600	447	9.1%	442	10.5%	801	9.5%	87	4.9%	53	6.8%	14
$601 or more	441	9.0%	357	8.5%	840	9.9%	82	4.6%	93	11.9%	17
Other (specify)	88	1.8%	35	0.8%	103	1.2%	41	2.3%	25	3.2%	13

Note: Associate n = 4,904; Bachelor's (0–60 credit hours) n = 4,213 Bachelor's (61–120+ credit hours) n = 8,463; Master's n = 1,781; Doctorate n = 784; Other n = 412

Financial Aid

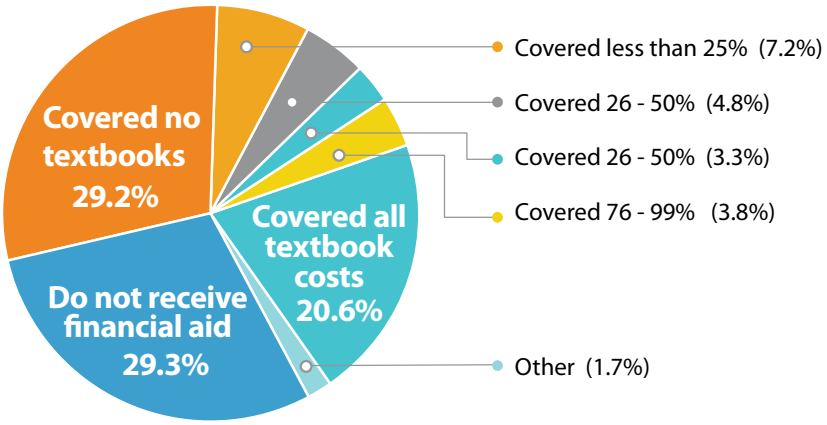
For the Spring 2016 term, 29.3% of students reported that they did not receive financial aid, and 29.2% reported that financial aid did not cover any of the textbook costs. Among the 39.7% who reported receiving financial aid for textbooks, 20.6% had all of their textbook costs covered, and 19.1% had a portion of their costs covered by financial aid.

Table A-7:: Percentage of Textbooks Covered by Financial Aid

Q: What percentage of your textbook costs is covered by financial aid for the spring 2016 term?

Answer Options	Responses	Percentage
I do not receive financial aid	6,030	29.3%
None	6,007	29.2%
Less than 25%	1,487	7.2%
26% to 50%	984	4.8%
51% to 75%	688	3.3%
76% to 99%	784	3.8%
All of my textbook costs	4,227	20.6%
Other (please specify)	350	1.7%

Chart A-3: Percentage of Textbooks Covered by Financial Aid



Note: n = 20,687

Course Materials Costs

For the spring 2016 term, 77.2% percent of students surveyed spent $200 or less on required course materials. By comparison, 10.6% of students spent $300 or more on required course materials.

Table A-8: Amount Spent on Course Materials

Q: Excluding textbooks, how much did you spend on required course materials for the spring 2016 term (handbooks, guides, course packets, and other print or digital learning materials)?

Answer Options	Responses	Percentage
$0 – 100	10,405	50.6%
$101 – 200	5,469	26.6%
$201 – 300	2,415	11.7%
$301 – 400	926	4.5%
$401 – 500	442	2.2%
$501 – 600	294	1.4%
$601 or more	482	2.3%
Other (please specify)	124	0.6%

Note: n = 20,557

Measures to Reduce Costs

Students reported a variety of measures to reduce their textbook costs, and almost all students (96.8%) reported using one or more approaches to reduce the costs of their textbooks. The most-used cost-saving measure reported by students was having purchased books from a source other than the campus bookstore (63.8%). Almost half of the students reported buying used copies from the campus bookstore (48.8%) and renting printed textbooks (47.0%). Of the responses received, 39% of students reported selling used books to save money, and 29.6% reported that they had rented digital textbooks for cost saving. This is a big jump from the 2012 survey's 10% usage of rented digital textbooks.

Table A-9: Measures to Reduce Textbook Costs

Q: What measures have you taken to reduce your required textbook costs? Check all that apply.

Answer Options	Responses	Percentage
I do not attempt to reduce textbook costs	659	3.2%
Buy used copies from the campus bookstore	10,030	48.8%
Buy books from a source other than the campus bookstore	13,109	63.8%
Rent digital textbooks	6,083	29.6%
Buy lifetime access to a digital version of a textbook	647	3.1%
Rent only the digital textbook chapters needed for the course	1,116	5.4%
Rent printed textbooks	9,668	47.0%
Use a reserve copy from the campus library	2,128	10.4%
Share books with classmates	4,875	23.7%
Sell used books	8,025	39.0%
Other (please specify)	1,955	9.5%

Note: n = 20,557

Table A-10: Measures to Reduce Textbook Costs (College and University)

	College		University	
I do not attempt to reduce textbook costs	431	5.2%	184	1.6%
Buy used copies from the campus bookstore	4,298	51.6%	5,283	46.7%
Buy books from a source other than the campus bookstore	4,493	54.0%	8,106	71.6%
Rent digital textbooks	2,130	25.6%	3,654	32.3%
Buy lifetime access to a digital version of a textbook	179	2.2%	444	3.9%
Rent only the digital textbook chapters needed for the course	374	4.5%	673	5.9%
Rent printed textbooks	3,695	44.4%	5,593	49.4%
Use a reserve copy from the campus library	474	5.7%	1,574	13.9%
Share books with classmates	1,322	15.9%	3,338	29.5%
Sell used books	2,807	33.7%	4,885	43.1%
Other (please specify)	607	7.3%	1,265	11.2%

Textbooks Purchased But Not Used

To be consistent with the 2012 textbook survey, answers greater than 15 were set as outliers. After taking out 429 outliers, the average participant purchased 2.6 textbooks that were not used during his or her academic career. In the 2012 survey, the average participant purchased 1.6 textbooks that were not used during his or her academic career. The difference is statistically significant. Two independent sample T test show that 2016 Survey (M = 2.60, SD = 2.84) and 2012 Survey (M = 1.60, SD = 2.11), t(-39.251) = 37035.180, $p \leq .001$, $CI_{.95}$ – -1.044,– -.945. Table 12.1 below compares the response count and response percent for the number of textbooks not used.

Table A-11: Textbooks Purchased But Not Used

Q: Of all the textbooks you have been required to purchase, approximately how many were NOT used during your classes?

Textbooks not used	Responses	Percentage
0	5,350	26.6%
1	2,921	14.5%
2	3,845	19.1%
3	2,796	13.9%
4	1,540	7.7%
5	1,470	7.3%
6	532	2.6%
7	191	.9%
8	298	1.5%
9	97	.5%
10	726	3.6%
11	22	.1%
12	110	.5%
13	17	.1%
14	17	.1%
15	176	.9%
Totals	20,108	100.0%

Note: n = 20,108

Table A-12: Textbooks Purchased But Not Used (University and College)

	Responses	Mean	Std. Deviation
University	11,018	2.96	3.011
College	8,200	2.11	2.491

Actions Taken As a Result of Textbooks Costs

Respondents were asked if the cost of textbooks had an academic consequence or caused them to take certain actions. The same question was asked in the 2012 survey. Of all the consequences related to the cost of textbooks, the top five highest percentage causes that impacted students during their academic career (i.e., seldom, occasionally, frequently) are: not purchasing the required textbook (66.6%), taking fewer courses (47.6%), not registering for a specific course (45.5%), earning a poor grade (37.6%), and dropping a course (26.1%). Comparing the 2016 survey to the 2012 survey:

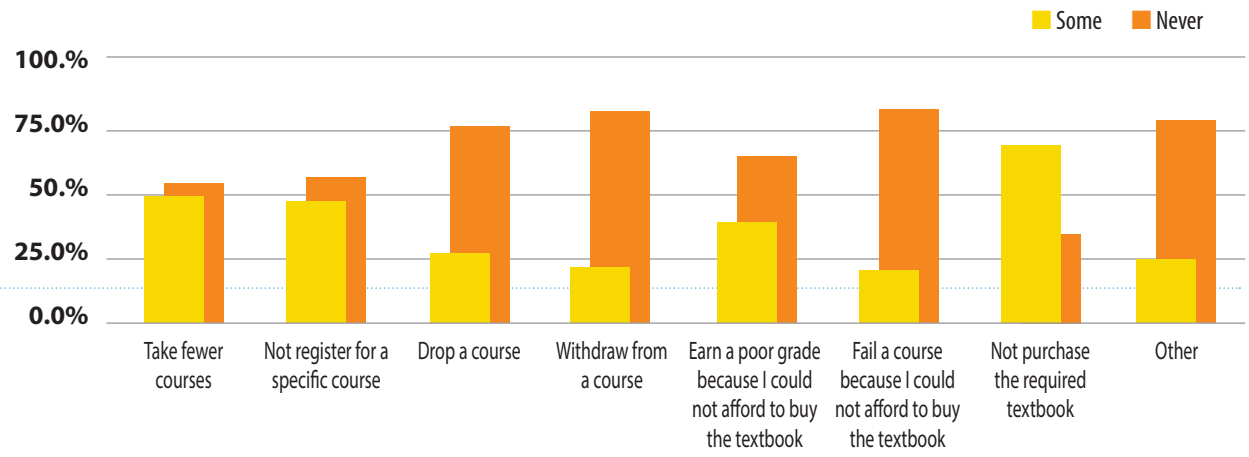
- Not purchase the required textbook (66.6%, up from 64% in the 2012 survey)
- Not register for a course (45.5%, up from 45% in the 2012 survey)
- Take fewer courses (47.6%, down from 49% in 2012 survey)
- Drop a course (26.1% down from 27% in 2012 survey)
- Withdraw from a course (20.7%, slightly down from 21% in the 2012 survey)
- Fail a course (19.8%, up from 17% in the 2012 survey)

Table A-13: Actions Taken as a Result of Textbook Costs

Q: In your academic career, has the cost of required textbooks caused you to:

Answer Options	Never		Some	
Take fewer courses	10,822	52.4%	9,849	47.6%
Not register for a specific course	11,196	54.5%	9,342	45.5%
Drop a course	15,163	73.9%	5,354	26.1%
Withdraw from a course	16,252	79.3%	4,249	20.7%
Earn a poor grade because I could not afford to buy the textbook	12,812	62.4%	7,726	37.6%
Fail a course because I could not afford to buy the textbook	16,440	80.2%	4,063	19.8%
Not purchase the required textbook	6,824	33.4%	13,613	66.6%
Other	3,649	76.1%	1,145	23.9%

Chart A-4: Actions Taken as a Result of Textbook Cost



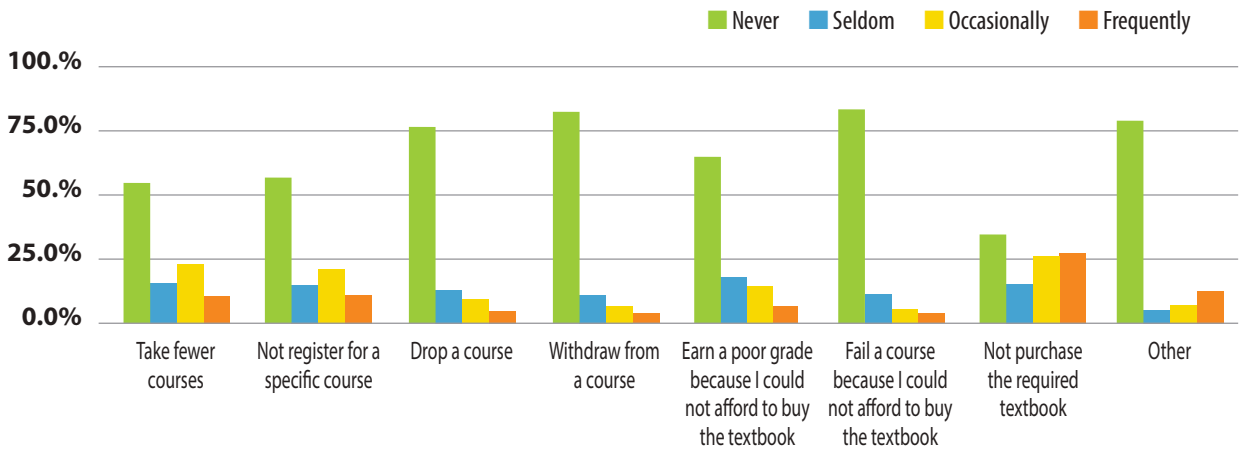
Note: n = 20,557

Table A-14 Actions Taken as a Result of Textbook Cost (by Frequency)

Q: In your academic career, has the cost of required textbooks caused you to:

Answer Options	Never	Seldom	Occasionally	Frequently
Take fewer courses	10,822	3,126	4,603	2,120
	52.4%	15.1%	22.3%	10.2%
Not register for a specific course	11,196	2,945	4,193	2,204
	52.4%	15.1%	22.3%	10.2%
Drop a course	15,163	2,560	1,833	961
	74.0%	12.5%	9.0%	4.7%
Withdraw from a course	16,252	2,195	1,313	741
	79.3%	10.7%	6.4%	3.6%
Earn a poor grade because I could not afford to buy the textbook	12,812	3,540	2,895	1,291
	62.4%	17.2%	14.1%	6.3%
Fail a course because I could not afford to buy the textbook	16,440	2,234	1,072	757
	80.2%	10.9%	5.2%	3.7%
Not purchase the required textbook	6,824	3,016	5,172	5,425
	33.4%	14.7%	25.3%	26.5%
Other	3,649	243	325	577
	76.1%	5.1%	6.8%	12.0%

Chart A-5: Actions Taken as a Result of Textbook Cost (by Frequency)



Note: n = 20,557

Table A-15: Actions Taken as a Result of Textbook Cost (College and University)

Answer Options		Never		Some	
Take fewer courses	College	3,357	40.4%	4,958	59.6%
	University	7,039	62.2%	4,276	37.8%
Not register for a specific course	College	4,082	49.1%	4,233	50.9%
	University	6,701	59.2%	4,612	40.8%
Drop a course	College	5,902	71.1%	2,397	28.9%
	University	8,682	76.8%	2,629	23.2%
Withdraw from a course	College	6,348	76.5%	1,948	23.5%
	University	9,281	82.2%	2,016	17.8%
Earn a poor grade because I could not afford to buy the textbook	College	5,721	68.8%	2,594	31.2%
	University	6,634	58.6%	4,679	41.4%
Fail a course because I could not afford to buy the textbook	College	6,712	80.8%	1,590	19.2%
	University	9,106	80.6%	2,188	19.4%
Not purchase the required textbook	College	3,710	44.9%	4,561	55.1%
	University	2,839	25.2%	8,421	74.8%
Other	College	1,605	77.5%	465	22.5%
	University	1,865	75.9%	591	24.1%

Willingness to Rent Textbooks

Renting textbooks is a popular option for the majority of students. Eighty-four percent of the participants reported a willingness to rent textbooks to reduce cost. This is up from 73.5% in the 2012 survey. Among students who are willing to rent textbooks, a little more than half (51%) are willing to rent either printed or digital. It is worth noting that 31% of students reported that they will only rent printed textbooks.

Table A-16: Willingness to Rent Textbooks

Q: Would you rent one or more of your required textbooks if it saved you money?

Answer Options	Responses	Percentage
Yes, either printed or digital	10,488	51.0%
Yes, only if printed	6,377	31.0%
Yes, only if digital	421	2.0%
No	1,373	6.7%
Maybe	1,898	9.2%

Note: n = 20,557

Table A-17: Willingness to Rent Textbooks (2016 and 2012)

Answer Options	2016	2012
Yes, either printed or digital	51.0%	35.9%
Yes, only if printed	31.0%	35.3%
Yes, only if digital	2.0%	2.4%
No	6.7%	10.2%
Maybe	9.2%	16.3%

Note: 2016 survey n = 20,557; 2012 survey n = 15,579

Digital Study Aids

Students were asked to rank the top three (out of nine) digital study aids. The study aids ranked highest by students as most supportive of their learning were: Interactive practice questions (73.9%), PowerPoint slide shows (58.4%), and video (57.3%)

Table A-18: Most Useful Study Aids

Q: From the types of study aids listed below, select the top three digital study aids you find to be most useful to support your learning.

Answer Options	Responses	Percentage
Interactive practice questions	15,200	73.9%
Flash cards	9,640	46.9%
PowerPoint slide shows	12,002	58.4%
Video	11,781	57.3%
Audio	3,466	16.9%
Animations	4,663	22.7%
Interactive 'try it now' activities	8,543	41.6%
Online study groups	1,808	8.8%
Online tutoring system provided by the college	2,850	13.9%
Other (please specify)	528	2.5%

Note: n = 20,557

Appendix B: Resources

2016 Florida Student Textbook & Course Materials Survey

CITATION

Florida Virtual Campus. (2016). 2016 Florida Student Textbook & Course Materials Survey. Tallahassee, FL.

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Heiman, J. & Kuhn, J. (2016). The 2016-17 Budget: Assessing the Governor's Zero-Textbook-Cost Proposal. Retrieved from http://www.lao.ca.gov/reports/2016/3392/zero-textbook-cost-031416.pdf.

(https://www.insidehighered.com)

Students sacrifice meals and trips home to pay for textbooks

Submitted by Emma Whitford on July 26, 2018 - 3:00am

It's well documented that textbooks aren't cheap [1], but for some students, affording course materials takes priority over paying for meals or flights home, or pursuing their first choice of major.

A new study by Morning Consult for Cengage, an educational technology and services company, asked 1,651 current and former college students how purchasing textbooks figures into their financial picture. Forty-one percent of those students said that textbooks and other course materials had "somewhat of an impact" on their financial situation, and 46 percent said that it had "a big impact."

"We truly are in an access crisis," said Richard Baraniuk, a professor at Rice University [2] and founder of OpenStax [3], a nonprofit that provides access to free digital editions of textbooks. "Over the past 40 years, college textbook prices have risen about 1,000 percent, which is extraordinary. Much faster than the Consumer Price Index, much faster than even parts of our economy that we say are out of control, like medical spending. Textbooks are outpacing that by a large factor."

Michael Hansen, CEO of Cengage, said the industry is out of touch with students' thoughts on textbook affordability.

"Textbooks -- and many in the industry have denied this for too long -- are a major stress factor for many students around the country," he said. "Students are making major trade-offs such as housing, such as food, to accommodate textbooks."

Thirty percent of survey respondents said they had forgone a trip home to see family, 43 percent said they skipped meals, 31 percent registered for fewer classes and 69 percent worked a job during the school year -- all to save money for books.

"Even when a student goes through the excruciating pain of searching through used books, photocopying, illegally downloading PDFs and renting books, they'd end up spending about $578 a year," Hanson said.

That figure would be closer to $1,200 per year if students chose to purchase all new textbooks and other course materials.

Over half of the student survey respondents just aren't buying some of the required course materials. Sheila Liming, an English professor at the University of North Dakota [4], said her students' grades have suffered from opting out of certain book purchases.

"I give periodic, scheduled quizzes in some of my classes and, last semester, more than two-thirds of the class failed one of the quizzes, which I later learned was because most of them hadn't

purchased the book that it was on," she said via email. She said that students often preform a cost-benefit analysis and weigh potential hits to their grades against the cost of a necessary textbook.

In response to the rising prices, Cengage will launch a program in which students can purchase access to all of Cengage's online materials for $120 per semester.

"A community college student will now spend more hours in a minimum-wage job to pay for their textbook than they would sitting in a course" they're buying the book for, Baraniuk said. "The cost of books per year exceeds the cost of tuition at some community colleges. It's one of the biggest costs of going to college."

Students don't feel the costs are justified, either, according to the survey. Eighty-seven percent reported that they believed textbooks were overpriced, more so than tuition fees, prescription drugs and airline tickets, and 69 percent believe that publishers are unfairly profiting from the cost of textbooks and other course materials.

"They're not worth it. It's not worth it because these books shouldn't be $300. It's just basically a market that's completely out of whack with reality," Baraniuk said.

In addition to financial sacrifices, some students are changing their educational plans altogether. Seventeen percent of respondents said they changed their major because of high textbook prices, and 33 percent opted not to take a specific course. Of those who left their original major, 12 percent left medicine, 10 percent left the social sciences, 9 percent abandoned business and 9 percent dropped computer science.

Links:
[1] https://www.insidehighered.com/news/2014/01/28/textbook-prices-still-crippling-students-report-says
[2] https://www.insidehighered.com/college/227757/rice-university
[3] https://www.insidehighered.com/news/2017/07/11/openstax-latest-publisher-build-online-learning-platform
[4] https://www.insidehighered.com/college/200280/university-north-dakota

INSIDE HIGHER ED
(https://www.insidehighered.com)

Survey examines impact of textbook prices on student behavior

Submitted by Doug Lederman on August 1, 2018 - 3:00am

A study published last week [1] found that the vast majority of students surveyed said the high price of textbooks had had a major (46 percent) or modest (41 percent) impact on their financial situations, forcing them to forgo meals and trips home to see their families, among other things.

Now a new survey [2] focuses more directly on the academic impact of students' expenditures on curricular materials, finding that many are making decisions that could undermine their academic performance. But the study, conducted by Wakefield Research on behalf of VitalSource, the etextbook provider, also reveals that lower prices alone may be insufficient to wean many students from print textbooks.

In the survey [3], of roughly 400 traditional-age students at four-year colleges (a parallel survey of community college students drew too few respondents to be nationally representative), eight in 10 respondents said they had waited to purchase course materials until after the class had started, and 42 percent said they had "avoided purchasing the course materials at all." That latter figure is up from 28 percent in 2017 and 27 percent in 2016, respectively. About six in 10 respondents who said they delayed or avoided buying the materials said the price was a "very important" reason why.

Having students forgo their course materials is educators' worst nightmare, but a majority of respondents (60 percent) said they did not believe that their decisions had hurt their grades. But roughly two-thirds agreed or strongly agreed that they would do better academically if they had access to all course materials on the first day of class.

That is a major push of numerous curricular materials providers that are encouraging faculty members or colleges to embrace a range of approaches that give all students in a particular course access to digital curricular materials -- and to pay for it either in their tuition bills or another centralized way. (VitalSource is among the platforms that facilitate those arrangements, hence its interest in the topic of this survey.)

The survey also contained a set of questions related to those arrangements, in which students expressed some interest -- for instance, about two-thirds said they would be interested in paying for course materials as part of their tuition costs, and more than half (56 percent) said their institution did not give them the option to do so. Most students also said they believed they would get better grades if they had access to interactive etextbooks and digital tools.

And while some of the survey's findings reinforce the idea that today's traditional-age undergraduates favor all things digital -- half said they go no more than 10 minutes during their waking hours without using a digital device -- one result helps show why the shift to digital textbooks has gone slower than many technology advocates expected.

Roughly five in six respondents said that the cost savings would need to be "very significant" (41 percent) or "somewhat significant" (45 percent) for them to "permanently switch to using all digital course materials rather than print ones."

In other words, many of the respondents don't find the quality or convenience or interactivity of online/digital textbooks -- at least right now -- to be so much better than print as to warrant making such a shift without a strong financial incentive to do so.

Smart Title:
Textbook Prices' Impact on Student Behavior
Section:
Digital Learning [4]
Editorial Tags:
Digital Learning [5]
Ad keywords:
books [6]
teachinglearning [7]
Ad keyword:
DigitalLearning
Order:
1 000
Newsletter Order:
4
Digital Newsletter publication date:
Wednesday, August 1, 2018
Disable left side advertisement?:
Is this diversity newsletter?:
Diversity Newsletter publication date:
Tuesday, July 31, 2018
Diversity Newsletter Order:
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Include DNU?:
Email Teaser:
Textbook Prices' Impact on Student Behavior
Image Size:
Thumbnail-horizontal [8]
Trending:

Source URL: https://www.insidehighered.com/digital-learning/article/2018/08/01/survey-examines-impact-textbook-prices-student-behavior?width=775&height=500&iframe=true

Links:
[1] https://www.insidehighered.com/news/2018/07/26/students-sacrifice-meals-and-trips-home-pay-textbooks
[2] https://press.vitalsource.com/study-finds-majority-of-college-students-delay-purchasing-textbooks-due-to-cost
[3] https://get.vitalsource.com/hubfs/2018 Wakefield/Wakefield Research QuickRead Report for VitalSource.pdf
[4] https://www.insidehighered.com/news/news-sections/digital-learning
[5] https://www.insidehighered.com/editorial-tags/digital-learning
[6] https://www.insidehighered.com/ad-keywords/books
[7] https://www.insidehighered.com/ad-keywords/teachinglearning
[8] https://www.insidehighered.com/image-size/thumbnail-horizontal

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Inside Higher Ed's 2018 Survey of College and University Presidents, released late last week, focused much of its attention on ever-urgent issues like money and politics, not surprising at a time when many colleges are feeling intense financial pressure and campus leaders are grappling with a changing public policy landscape.

But the study also examined several elements of the changing instructional landscape in higher education, with questions related to open educational resources, enrollments of online students and presidents' preparation for dealing with digital learning issues.

Textbooks and course materials. In line with *Inside Higher Ed*'s recent surveys of chief academic officers and faculty members' views on technology, presidents strongly agreed (61 percent) that "textbooks and course materials cost too much." Thirty percent more agreed.

Eighty-five percent of presidents also agreed (52 percent strongly) that colleges should embrace open educational resources, free and openly licensed online educational material. Presidents of doctorate-granting universities, public and private alike, were somewhat less likely than their peers at other institutions to agree, at 49 percent and 40 percent, respectively.

Their support comes with conditions, though. Campus leaders were fairly divided (44 percent agree, 34 percent disagree) on whether "faculty members and institutions should be open to changing textbooks or other materials to save students money, even if the lower-cost options are of lesser quality." Public college leaders were significantly more likely to agree (51 percent) than were their private college peers (39 percent).

Campus CEOs as a group were more inclined to agree with that statement than were chief academic officers in January's survey, only 35 percent of whom backed that view. (Forty-three percent of provosts agreed.)

And about half of presidents agreed (20 percent strongly) that "the need to help students save money on textbooks justifies some loss of faculty-member control over selection of materials for the courses they teach."

Leaders of private doctoral and master's institutions (36 percent agreed) were less amenable to a loss of faculty control than were presidents of community colleges (58 percent agreed, 20 percent strongly) and four-year private colleges (24 percent strongly agreed).

Enrollments of online students. A set of questions in the survey asked campus presidents about the enrollment issues that most concern them.

Concerns about enrolling more students who study online fell in about the middle of the pack, with 52 percent of presidents saying they were very (12 percent) or somewhat (40 percent) concerned about that issue.

That was less than the proportion who were worried about enrolling their target number of undergraduates (84 percent), enrolling students likely to be retained (82 percent), enrolling international students and students who don't need institutional aid (56 percent each), and giving out too much aid to students who may not need it (54 percent).

More presidents were concerned about enrolling more online students than enrolling more minority students to have a diverse student body and out-of-state students (45 percent each), first-generation and Pell Grant-eligible students (42 percent each), and academically prepared athletes (41 percent).

The answers to the question about online students differed by sector, as seen in the table below. The leaders of public master's and baccalaureate colleges expressed the most concern, and public doctoral university leaders the least, with other sectors in the middle.

	All Institutions by Sector			Public			Private Nonprofit	
	All	Public	Private Nonprofit	Doctoral	Master's/ Bacc.	Assoc.	Doctoral/ Master's	Bacc.
Enrolling more students studying online								
% Very concerned	12	10	16	7	14	8	21	13
% Somewhat concerned	40	43	37	29	52	45	31	40
% Not too concerned	33	37	30	54	27	33	36	23
% Not concerned at all	15	10	18	11	6	13	12	24

Doubts about their digital learning knowledge. Asked to rate how well prepared they were for a series of duties and topic areas important to their jobs, presidents acknowledged significant shortcomings in their comfort with issues of digital learning.

Only 45 percent of campus leaders described themselves as very well prepared or well prepared to deal with those issues, the least of any of the 12 issues presented to them. Presidents said they were most prepared for financial management (71 percent), admissions and enrollment management (67 percent), and working with trustees (66 percent). Majorities also said they were well prepared for public and media relations (61 percent) and race relations (54 percent). About half say the same about athletics; hot-button student-affairs issues, such as sexual assault, drinking and Greek life; and fund-raising.

Government relations was closest to digital learning, at 47 percent.

	All Institutions by Sector			Public			Private Nonprofit	
	All	Public	Private Nonprofit	Doctoral	Master's/ Bacc.	Assoc.	Doctoral/ Master's	Bacc.
Digital learning								
% Very well prepared	15	18	11	9	17	21	15	8
% Well prepared	30	34	28	39	30	36	24	31
% Somewhat prepared	35	35	36	28	41	35	34	36
% Not very prepared	17	13	20	24	11	8	20	19
% Not prepared at all	3	<1	5	0	1	0	7	6

Whether that's because the presidents are the farthest thing from digital natives -- 50 percent reported being in their 60s and another 30 percent in their 50s -- or for some other reason, the findings may raise questions about how ready the presidents are to lead their institutions through a time of great change in the instructional model for most colleges.

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https://www.insidehighered.com/digital-learning/article/2018/03/14/college-presidents-opine-about-oer-and-their-comfort-digital

East End Health Education and Wellness Initiative

VCU Board of Visitors, Academic and Health Affairs Committee
September 14, 2018

Purpose

- Mobilize assets across VCU and VCU Health System to establish a health education and wellness center in the East End of Richmond

- Goals:
  - Improve community health and wellness through the delivery of preventive and support services
  - Advance collaborative learning, strengthen interprofessional academic practicum, and accelerate cross-disciplinary research
  - Co-create with community partners a valued resource that brings together East End residents to promote healthy lifestyles

Rationale: One VCU

- East End community is encountering multiple socio-economic and health challenges
- Provides students real-world experiences
- Expands partnerships to facilitate community-engaged research

VCU

Status

- Construction of the facility is underway; projected completion – Early Spring 2019
  - Facility will be located in a new development with a grocery store and J.Sargeant Reynolds Culinary Arts Institute
- Integrated, cross-disciplinary model
  - 22 clinical and academic units to provide social support and referrals, behavioral health counseling services, health promotion/screenings, and chronic disease management and education
- Evaluation plan and training curriculum are being developed
- Critical investments:
  - Part-time Community Liaison
  - Site Director has been hired; start date is mid-September

Questions

1. What are some of the metrics the board would like evaluated to determine if this venture is successful?
2. Planning efforts have included engagement with representatives from City government, East End community agencies, and local health care providers. Are there other public or private entities that should be engaged?
3. How can this model serve as a pilot to inform the health equity plan, especially addressing the SDOH and transforming the learning experience?
4. Is there an interest in having board members engaged to provide advice during the planning process or after the site is operational?