



Launching OER Degree Pathways:
*An Early Snapshot of Achieving the Dream's OER Degree Initiative
and Emerging Lessons*

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Executive Summary

The Open Educational Resources (OER) Degree Initiative, led by Achieving the Dream (ATD), seeks to boost college access and student success by supporting the redesign of courses needed for a degree using OER in place of proprietary instructional materials. ATD's programs aim to help community colleges throughout the United States increase student success through data-informed decision-making and holistic institutional change. For ATD, the initiative is an opportunity to scale an innovative approach throughout the community college sector with special attention to the colleges that are integrating OER degrees into their overall student success strategy. The William and Flora Hewlett Foundation, the Bill & Melinda Gates Foundation, the Great Lakes Higher Education Guaranty Corporation, the Shelter Hill Foundation, and the Speedwell Foundation together provided funding for 38 community colleges across 13 states to build entire degree programs using OER.



The OER Degree Initiative aims to help grantee institutions to eliminate the financial burden textbooks place on many students and, secondarily, to promote improvements in curriculum and pedagogy. Open Educational Resources are materials that are free of charge and also come with open licenses, allowing both instructors and students to adapt and share the resources to better meet local educational needs. While the most commonly-cited goal of OER use has been to improve college affordability, a growing body of research points to additional benefits for students. The move to OER may also help to

increase retention, improve course outcomes, and reinvigorate pedagogy, all of which potentially accelerate a student's time to completion.

SRI International, along with partner rpk GROUP, is conducting the research and evaluation for the initiative, investigating the impacts of OER degrees on student success, the economic impacts on students and institutions, and facilitators and barriers to successful implementation of this model. In addition, ATD partnered with Lumen Learning to provide technical assistance to grantees and with the Community College Consortium of Open

Educational Resources (CCCOER) to facilitate a community of practice.

Most colleges began offering the first OER degree courses in spring 2017. This report focuses on the initial implementation of these pathways, exploring what it takes to launch an OER degree, the types of challenges that arise, how the colleges are addressing them, and some implications for the road ahead. The findings presented here are based primarily on two data collections conducted from October 2016 through January 2017: a survey involving 300 instructors at 37 colleges, and phone interviews with 43 instructors and program administrators across 15 selected colleges. This report describes these early data collection efforts and provides a snapshot of the participants in the ATD OER Degree Initiative.

Who Is Participating?

The OER Degree Initiative involves 38 community colleges across the United States; of these, 18 are participating in multi-college consortia. At present grantees are developing a total of 53 degrees and certificates, of which close to half are General Studies AA/AS or liberal arts degrees.

When the initiative began, few of the colleges were completely new to OER. Their OER experience typically followed one of three paths:

- Senior administrators saw OER as a strong fit with their institution's mission and strategic goals and launched efforts to recruit faculty and shepherd necessary resources.
- Individual faculty members took the initiative to adopt OER in their own courses, establishing



proof of concept and building grassroots support among colleagues.

- Service unit leaders, such as directors of centers for teaching and learning or library directors, introduced OER to their campuses via workshops or other events and provided support to interested faculty members.

In many cases previous OER activities were supported by internal or external grant funds. A few, such as colleges in the Virginia Community College System and Pierce College, had already developed entire OER degrees. These early pioneers provide a glimpse of where any of these paths could lead – **OER degrees as a core strategic initiative that permeates activities and systems throughout the institution.** This level of integration may provide a more coherent and consistent student experience than is feasible with a smattering of unconnected OER courses, leading to the hypothesis that the cumulative effect of multiple OER courses might produce more significant impacts on students' progress to degree than one-off OER courses.

Instructor engagement is central to OER degree development. Based on the instructor survey, we found that:

- More than half the instructors participating in the ATD initiative are new to OER, while 83% have experience teaching online and/or hybrid courses.
- Instructors are fairly evenly distributed across major disciplines, with health sciences and STEM accounting for the largest share.
- Just over 80% are full-time faculty members.
- Personal interest and self-motivation were the overwhelming factors for most

instructors in deciding to participate. Many were also motivated by encouragement from administrators.

- Cost of instructional materials to students is a high priority.

These instructors were often hand-picked by project leaders based on their experience with OER and/or perceived willingness to try new things. They have considerable experience collaborating with colleagues on course development and review, and some expressed a desire to form connections with colleagues outside their departments and at other institutions to advance their OER work.

Instructor attitudes towards teaching with OER are very positive, particularly among those who already have experience teaching with OER.

Forty-two percent of instructors surveyed reported that they are very likely to promote use of OER to colleagues, while only a small percentage would not. Looking ahead, a key question is how to maintain (or improve) these attitudes while expanding the pool of OER instructors beyond those targeted by program leaders.

What Does It Take to Launch an OER Degree?

Developing an OER degree involves a broader set of institutional investments in course development and infrastructure than supporting individual faculty-led OER course conversions.

This investment involves a coordinated planning process, modifying institutional systems to identify OER in course catalogues and possibly charge per-course fees, and enlisting the assistance of non-instructional support and advising staff.

The largest initial investment required to launch a complete OER degree pathway, typically a minimum of 60 credit hours (about 20 courses), is the conversion of courses to OER. Grantees are implementing phased rollouts of these courses, with over 80% of instructors focused on introductory level courses during fall 2016/winter 2017.

Instructors report that the time required to locate and vet OER content presents the largest obstacle to teaching with OER. Sixty-three percent of instructors said that developing a course with OER takes at least one and a half times as much time as a traditional course. The level of effort varies substantially by instructor, driven in part by the availability of preexisting suitable course content. Instructors' extra time commitment may reflect their desire or need to create customized content instead of adopting existing OER materials in their entirety. To compensate for this effort, instructors typically receive either stipends or release time.

All content used in the ATD OER degree pathways must have open license terms allowing unrestricted use, reuse, revision, and redistribution. Open licensing is seen as an important precursor to improved pedagogy and

curriculum, as instructors are free to adapt materials to the needs of their courses and can in turn make OER courses available to others. Some colleges and instructors with prior OER experience had used different policies for what content could be included, necessitating some revisions to those courses. For example, in some cases instructors initially used library resources and free online content with restrictive copyrights in their courses. Use of content that is free to students but not open can meet one goal of the initiative – reducing costs to students – but may not achieve other goals.

Provision of training and supports for using OER is an important enabler of OER degree, development, and colleges have made considerable progress in engaging instructors with these supports:

- 70% of the instructors had received training as of winter 2016–17, mostly through the Lumen Learning technical assistance provided by the ATD initiative.
- Just over half of instructors reported seeking help from instructional designers or instructional technologists at least once.
- Instructors who are satisfied with the training they have received generally perceive lower barriers to OER course development and are more likely to recommend OER to colleagues.

Greater use of supports from service units may further reduce the burden of OER course development; for example, over half of instructors never received help from librarians, who could be well positioned to assist with content discovery and copyright clearance. Greater participation in

communities of practice (e.g. through CCCOER) may help instructors to connect with peers in their disciplines, especially for those who are the only members of their departments developing OER courses. Consortium arrangements may also help to leverage course development efforts and avoid duplication.

Most surveyed instructors expect that OER will benefit students due to cost savings and ability to access materials. While it is too early to examine outcomes of students who took OER degree courses, we did survey instructors about their perceptions of how OER could benefit students. They are much less likely to say that student outcomes will improve due to changes in teaching approaches, and a majority of instructors does not observe differences in students' engagement or preparation with OER. On the other hand, instructors who have taken advantage of supports for course development such as instructional designers and library services, and who have experience using OER, are more likely to report changes in pedagogy. An important question for the future is whether this combination of supports and experience enables faculty to take advantage of the flexibility of OER in ways that provide meaningful and observable benefits to students.

What about Sustainability?

The sustainability of OER degree pathways is already a common concern in this initiative and relies on numerous factors, including successfully recruiting and keeping instructors engaged. Some factors that may help to recruit and retain faculty include:

- Lowering barriers to the use of OER by providing training, course development supports, and mechanisms to collaborate on course development with colleagues;

- Getting students involved in evangelizing and raising awareness of the financial burden that instructional materials can pose;
- Aligning instructor incentives (e.g. performance evaluation criteria and compensation) with desired practices associated with OER such as taking an active role in shaping course content and sharing newly developed course materials;
- Addressing concerns about academic freedom and instructor control over course content; and
- Communicating the bigger vision of the OER degree to instructors and other stakeholders.

Creating sustainable OER degrees necessitates a shift in thinking from “what does it cost” to a more useful understanding of “what do we get for the resources we spend.” This shift requires that colleges understand total OER costs — including faculty time — and impacts on revenue streams such as tuition fees and bookstore revenues. If OER degrees improve measures of student progress such as persistence and retention, they can generate additional net revenue for the institutions, potentially creating a path to financial sustainability. As ATD regularly articulates to grantees, participating colleges and their stakeholders should be encouraged to view OER not as a one-time project, but as another tool to support student success.

Ultimately, **the sustainability of OER degrees depends on the extent to which the intervention becomes embedded in organizational systems and connected to the broader institutional strategy.** Establishing a shared understanding of why OER degrees are an effective way to advance the college's mission and how this model benefits students is critical to long term success.

Looking Ahead

Participating colleges will continue to roll out their OER degree pathways through the end of 2018. During this time, SRI's research activities will include monitoring enrollments, conducting a student survey and a second iteration of the instructor survey, visiting colleges to interview students and faculty in person about the OER degree experience, and collecting data about costs and student performance. A second public report on the economic and academic impacts will be released in 2019.

As the initiative proceeds, we expect that participating colleges will seek to make progress not only in developing the required set of courses but in institutionalizing OER uses and supports within their institutions. We stand to learn a great deal from this ambitious program about the real potential of OER to substantively improve student outcomes at a broad range of community colleges, and what it will take to achieve that goal in practice.



Introduction

In recent years the postsecondary community has focused increased attention on improving college access and success, particularly for underserved students. Awareness of the financial burden of college has grown, including the rising costs of commercial textbooks. According to the US Government Accountability Office (US GAO 2013), the costs of college textbooks rose 82% from 2002 to 2012, compared to 89% for tuition and fees and 28% growth for consumer prices overall.¹ Estimates of the annual cost to students of instructional materials range from approximately \$600 to \$1,300,² and a community college student paying full price for textbooks could expect those costs to amount to as much as a quarter of the costs of college attendance.³ At the same time, surveys have found that many students do not purchase required textbooks due to cost, and an analysis by the National Association of College Stores (NACS) data found that first generation college students actually pay more on average for textbooks, possibly because they are less aware of other alternatives such as renting or purchasing used copies.⁴

In response to these issues, educators have proposed alternative approaches to source instructional materials that can reduce costs for students while taking fuller advantage of the affordances of networked technology. Since the early 2000s, a movement has emerged to encourage development and use of Open Educational Resources (OER) in place of proprietary instructional materials with the goal of reducing costs for students, giving educators greater control over curriculum and course content, and inspiring improvements in pedagogy.

The OER movement has stimulated the development of a wide range of OER content ranging from individual learning objects to course syllabi to instruction material for entire courses. With philanthropic support and public funding, several well-established enterprises have emerged to provide high quality OER content. For example, OpenStax CNX, which provides open textbooks for large enrollment gateway courses, reported that in 2015 its content was used by 392,000 students in more than 2,500 courses in the U.S.⁵

1 US GAO [US Government Accountability Office]. 2013. College Textbooks: Students Have Greater Access to Textbook Information. Report 13-368 to Congressional Committees. Washington.

2 Hill P. (2016). How much do college students actually pay for textbooks? E-Literate, March 25. Online at <http://mfeldstein.com/how-much-do-college-students-actually-pay-for-textbooks/>. The College Board, Online at <https://bigfuture.collegeboard.org/pay-for-college/college-costs/quick-guide-college-costs>.

3 The College Board reports that average annual tuition and fees at public two year institutions was \$3,435 in academic year 2015/2016. Based on the estimate of \$1,300, textbook costs would account for 27% of the total cost of attendance of \$4,735, not including room and board and other supplies.

4 2014 survey by Student Monitor, available at www.studentmonitor.com/f14/Fall14Deck.pdf. Donaldson R, Nelson D, Thomas E. 2012. 2012 Florida Student Textbook Survey. Tallahassee: Florida Virtual Campus. Online at http://www.openaccesstextbooks.org/%5Cpdf%5C2012_Florida_Student_Textbook_Survey.pdf. Hill, P. 2016. Students are spending less on textbooks, but that's not all good. Chronicle of Higher Education, February 25. Online at <http://www.chronicle.com/article/Students-Are-Spending-Less-on/235340>.

5 <http://news.rice.edu/2016/01/20/openstax-already-saved-students-39-million-this-academic-year/>

A 2014 survey conducted by the Babson Group⁶ found that just over 10% of postsecondary faculty regularly use OER for supplementary purposes and roughly 5% use OER as their primary instructional resource.⁷ While OER still accounts for a fairly small share of the postsecondary instructional materials market, a number of positive indicators such as growing occasional use and exposure to OER among faculty and increased interest and support from federal and state policymakers may lead to accelerated uptake in coming years.⁸

Rigorous research about the effects of OER on student outcomes is still fairly limited due to a number of factors. One is the difficulty of evaluating a category of content, as opposed to a particular resource, and of comparing versions of courses that have undergone substantial redesigns. Another is that instructors and students can rarely be randomly assigned to conditions in postsecondary institutions, meaning selection bias is a pervasive issue in studies of instructional effectiveness.⁹ Notwithstanding these limitations, evidence about the impacts and potential benefits of OER is mostly encouraging. For example, a recent review of nine impact studies of courses using OER found four showing

Open Educational Resources 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.

– The William and Flora
Hewlett Foundation

improvements in student outcomes, five showing no difference, and only one with possible evidence of worse outcomes.¹⁰ A large scale study involving over 16,000 students found that those whose instructors used OERs performed as well or better in 14 out of 15 courses.¹¹ Surveys of instructors and students have also generally found positive perceptions.

6 The Babson Survey Research Group is a survey design, implementation, and analysis organization, which has conducted numerous large scale surveys related to online and blended learning in K-12 and postsecondary education. They conducted two surveys of higher education faculty about Open Educational Resources; the first was conducted in 2014 and the second was conducted in 2015–16 and involved over 3,000 participants. More information about the Babson Survey Research Group is available at their website: <https://www.onlinelearningsurvey.com/>.

7 Allen, I. E., & Seaman, J. (2014). Opening the textbook: Educational resources in U.S. higher education, 2014. Babson Survey Research Group. Retrieved from www.onlinelearningsurvey.com/oer.html.

8 For an extended discussion of the history, adoption, evidence base, and potential for growth of OER see Griffiths, R. J., & Maron, N. L. (2016). Open educational resources: Nearing an inflection point for adoption? *The Bridge*, 46(3), 45-55. Retrieved from <https://www.nae.edu/File.aspx?id=163133>

9 Ibid.

10 Hilton, J III (2016). Open Educational Resources and College Textbook Choices: A Review of Research on Efficacy and Perceptions. *Education Technology Research and Development* (Springer). Online at <http://link.springer.com/article/10.1007/s11423-016-9434-9>.

11 Fischer L, Hilton J III, Robinson J, Wiley DA. (2015). A multi-institutional study of the impact of open textbook adoption on the learning outcomes of post-secondary students. *Journal of Computing in Higher Education*. 27(3):159 –172.

The concept of an **OER degree** was first forged at Tidewater Community College starting in 2013. This model has generated interest for a couple reasons: first, the impacts of OER courses may be amplified when students are exposed to multiple OER courses, creating a cumulative effect on student success. Second, OER enthusiasts saw OER degrees as a way to substantially scale up adoption of OER by faculty in participating colleges, dramatically increasing opportunities for students to benefit from these courses while also increasing the supply of OER course content.

An OER degree is a pathway of courses using entirely OER that enable students to complete a degree without purchasing any commercial instructional materials.

With support from multiple funders, Achieving the Dream created an initiative to launch OER degrees with 38 community colleges across 13 states. The goal is to boost college access and completion, particularly for underserved students, by eliminating the financial burden textbooks place on students and promoting improvements in curriculum and pedagogy.

ATD retained SRI International, along with partner rpk GROUP, to conduct research and evaluation for the initiative. We are examining how OER degrees impact key student outcomes and costs for students and institutions, as well as facilitators and barriers to successful implementation of this model. A primary goal of the research is to determine, with as much confidence possible, whether the availability of OER degree options enables students to attempt and

In 2016 Achieving the Dream launched the Open Educational Resources Degree Initiative, a multi-funder program to enable community colleges to replace commercial instructional materials with open educational resources for courses necessary to complete a degree.

complete more college credits and thus progress more quickly towards attaining degrees.

In addition, recognizing the need to provide additional supports to participating colleges to facilitate OER course development, ATD partnered with:

- Lumen Learning to provide technical assistance, such as professional development workshops, and to monitor compliance with the open license requirements of the grants; and
- Community College Consortium of Open Educational Resources (CCCOER), which facilitates a community of practice and hosts regular events to share information about OER course development.

Most grantees began offering the first OER degree courses in spring 2017, so it is very early to address questions about academic and cost impacts. Our research to date has been focused on implementation of the OER degree pathways. Specifically, we investigated:

- What has the experience of launching pathways been like for instructors and other participants?
- What types of challenges are they encountering, and what approaches are they using to overcome these challenges?

- How is launching OER degree pathways different from converting individual OER courses?
- What types of initial investments are required?

About This Report

This report shares findings from initial surveys and interviews, and describes emerging implications for the initiative going forward. It is intended to provide formative feedback for the OER degree grantees and to share early lessons learned with the broader community.

The report begins with an overview of data collections conducted thus far. Findings and formative feedback follow, including:

- A snapshot of the early reach of the OER Degree Initiative, including a summary of participating colleges and degree plans;

- A description of the ways in which OER programs at participating colleges have evolved leading up to the OER Degree Initiative and how they are positioned to move forward;
- Characteristics of the first wave of instructors participating in initiative and how they got involved;
- Data on “what it takes” to launch an OER degree pathway, looking at various steps required to facilitate course development and to put necessary supports and policies in place; and,
- Sustainability data and observations about longer term challenges and ways in which grantees are addressing them.

Finally, we conclude with a look ahead at upcoming research activities and the long-term goals of the OER Degree Initiative research and evaluation.



Overview of 2016 Data Collection

In the fall of 2016, SRI investigated the OER degree roll out process to identify facilitators, barriers, and emerging best practices associated with launching OER degrees. Data collections included an instructor survey across colleges and phone interviews with instructors and program administrators in a sample of colleges.

Instructor Survey

The instructor survey was designed to explore instructors' experiences developing and delivering OER degree courses, including time and effort required; what forms of training and support they have accessed; perspectives on the quality, availability, and value of OERs; and how this model impacts their pedagogical approaches and their roles as instructors. Our survey population consisted of instructors involved in any way with developing and/or delivering OER degree courses as part of the ATD initiative, but not instructors who are independently teaching OER courses.

SRI administered 410 online surveys to instructors at 37 of the 38 grantee institutions.¹² We received 300 responses, achieving a response rate of 67%, and the number of instructors invited to participate per college ranged widely from two to 55.¹³

Administrator and Faculty Phone Interviews

SRI conducted phone interviews to explore grantees' implementation processes, with particular focus on the creation of OER degree pathways (as opposed to individual OER courses). Interview topics included the units involved on campus, how pathway courses were selected, the forms of coordination required across units, individual experiences with OER, and the types of services and supports instructors needed to develop OER courses at scale. Instructor interviews covered similar topics as the survey but allowed for deeper exploration of certain topics such as the recruitment process and types of supports used to develop courses.

We conducted 43 phone interviews with faculty (24) and administrators and support services (19) at 15 colleges. In most cases we interviewed three

to four individuals from different roles at selected colleges in order to hear multiple perspectives of the same implementation. Interviewees were selected by grantee site coordinators because they had significant involvement in developing and/or rolling out an OER course.

¹² One institution did not have IRB approval for the study at the time of survey administration and was not surveyed.

¹³ The data and analyses presented in the main body of this report are not weighted by college. We opted to present unweighted results because this report does not focus primarily on the differences between grantees and because, in general, we did not see material differences when we explored both weighted and unweighted results.

Who Is Participating in the OER Degree Initiative?

The OER Degree Initiative involves 38 community colleges across the United States. Eighteen of these are participating in multi-college consortia.

Defining What Counts as an OER Degree Course for the ATD Initiative

Most participating colleges had some OER activity on their campuses before the initiative started, and many of these used a broader definition of OER or offered courses with a mix of open license and free resources. Some colleges already offered “low and no cost” courses using materials with a variety of license types. ATD provided grantees with

Table 1: Overview of Grantees

Grantee	Location	OER Degree(s)	Notes
Alamo Community College	San Antonio, TX	General Studies (AA and AS)	Part of Texas consortium: a district comprised of five independent colleges
Austin Colleges District	Austin, TX	General Studies (AA and AS)	Part of Texas consortium
El Paso Community College	El Paso, TX	General Studies (AA and AS)	Part of Texas consortium
San Jacinto College	Pasadena, TX	General Studies (AA and AS)	Part of Texas consortium
Bay College	Escanaba, MI	Associates in Arts (AA), Business Administration (AS), and Mechatronics & Robotics (AAS)	
Broward College	Fort Lauderdale, FL	Business Administration (AS), and Marketing Management (AS)	One campus is entirely online
Bunker Hill Community College	Charlestown, MA	General Concentration (AA)	
Borough of Manhattan Community College	New York, NY	Criminal Justice (AA)	Part of CUNY consortium
Bronx Community College	Bronx, NY	Liberal Arts & Science with History Option (AA)	Part of CUNY consortium Offers Accelerated Study program
Hostos Community College	Bronx, NY	Early Childhood (AAS)	Part of CUNY consortium
Alexandria Technical Community College	Alexandria, MN	Associates in Arts (AA) and Health Science (AS)	Part of Distance Minnesota Consortium; Currently offers fully online degrees
Northland Technical Community College	Thief River Falls, MN	Associates in Arts (AA) and Health Science (AS)	Part of Distance Minnesota Consortium; Currently offers fully online degrees
Northwest Technical Community College	Bemidji, MN	Health Science (AS)	Part of Distance Minnesota Consortium; Currently offers fully online degrees

Table 1: Overview of Grantees (Continued)

Grantee	Location	OER Degree(s)	Notes
Florida State College at Jacksonville	Jacksonville, FL	General Studies (AA) and Human Services (AS)	
Forsyth Technical CC	Winston-Salem, NC	Associates in Arts (AA)	
Housatonic CC	Bridgeport, CT	General Studies (AS)	
Lake Washington Institute of Technology	Kirkland, WA	Biology (AA-T) and Mechanical Engineering (AA-T)	Has access to STEM courses through Open Washington
Montgomery College	Rockville, MD	General Studies (AA)	
Odessa College	Odessa, TX	Psychology (AA) and Sociology (AA)	
Pierce College	Lakewood, WA	Pre-Nursing DTA and Associate of Arts AA-DTA	Pierce has already created one entirely OER degree pathway
Pima Community College	Tucson, AZ	Liberal Arts - General (AA)	
Clinton Community College	Plattsburgh, NY	Health Administration (AS)	Part of SUNY CConsortium, Open SUNY Textbook initiative and Open SUNY
Herkimer Community College	Herkimer, NY	General Studies (AA) and Social Studies (AA)	Part of SUNY CConsortium, Open SUNY Textbook initiative and Open SUNY
Mohawk Valley CC	Utica, NY	Criminal Justice (AAS)	Part of SUNY CConsortium, Open SUNY Textbook initiative and Open SUNY
Monroe Community College	Rochester, NY	Biology (AS)	Part of SUNY CConsortium, Open SUNY Textbook initiative and Open SUNY
Tompkins Cortland Community College	Dryden, NY	Business Administration (AAS)	Part of SUNY CConsortium and Open SUNY Textbook initiative
Santa Ana College	Santa Ana, CA	Business Administration (AS) and Liberal Arts, Humanities, & Communications (AA)	
Mountain Empire	Stone Gap, VA	Old Time Music (Certificate)	Part of Virginia Consortium; Participated in Zx23 grant
Central Virginia Community College	Lynchburg, VA	General Studies AA&S, Science AA&S, General Education (Certificate),	Part of Virginia Consortium; Participated in Zx23 grant
Germanna Community College	Fredericksburg, VA	Business Administration (AA&S) and Science (AA&S)	Part of Virginia Consortium; Participated in Zx23 grant
Lord Fairfax Community College	Middletown, VA	Business Administration (AA&S) and Business Management (AAS)	Part of Virginia Consortium
Northern Virginia Community College	Alexandria, VA	Liberal Arts (AA)	Part of Virginia Consortium; Participated in Zx23 grant; Already created 2 fully OER online degree pathways
Tidewater Community College	Norfolk, VA	General Studies (AS) and Social Sciences (AS)	Part of Virginia Consortium; Participated in Zx23 grant; Already created a fully OER degree pathway
West Hills College Lemoore	Lemoore, CA	Elementary Teacher Education (AA-T)	

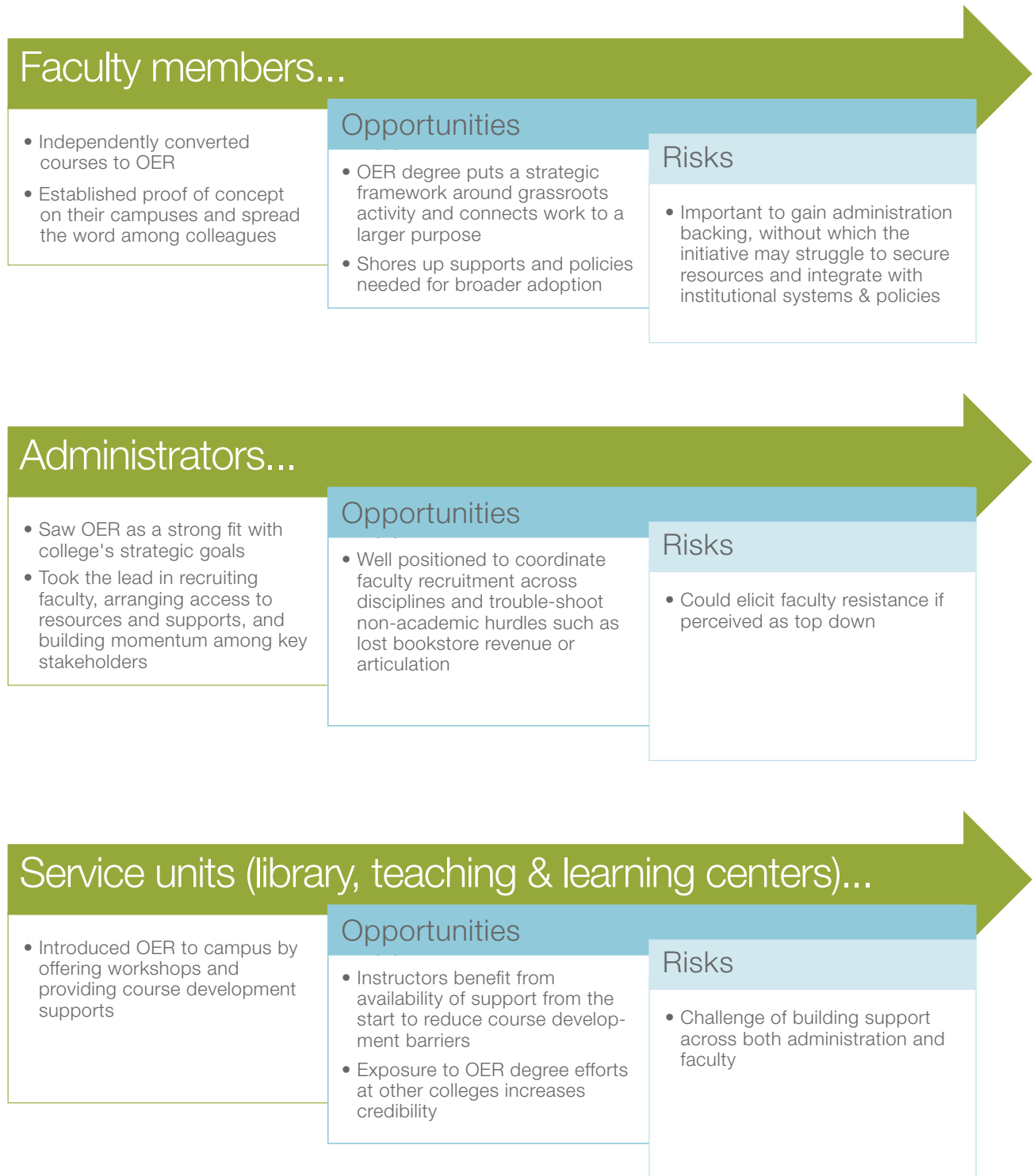
guidelines about what “counts” as an OER degree course for this initiative, and SRI’s research is focused on courses that meet these requirements.¹⁴ These include existing OER courses that are part of the degree pathways and have received official certification from Lumen Learning that they qualify under program definitions, as well as newly converted OER courses that have also received such certification.

Where Did Participating Colleges Start?

When the OER Degree Initiative began, few of the colleges were completely new to OER. They followed a number of different paths to get to where they are, and these paths may be instructive to other community colleges considering launching their own OER degrees. While every case is in some way unique, we identified several tracks through which colleges got involved with OER. For each path, the ATD initiative presents particular opportunities for evolution and risks to be managed.

¹⁴ ATD requires courses to use all openly licensed instructional content except in specific circumstances. For example, instructors can require students to purchase essential tangible goods such as laboratory equipment for lab courses or art supplies for a studio course. Grantees are permitted to use copyrighted primary sources such as novels in required courses, but elective courses that use copyrighted material do not count towards the OER degree pathway. Grantees may charge fees for OER courses, but students must have unrestricted access to course materials from day one.

Figure 1: Paths to an OER degree



Montgomery College: Service unit workshops spark faculty uptake of OER

Montgomery College in Montgomery County, Maryland, is building a General Studies z degree with two pathways: one with a concentration in English and another in Psychology. General Studies was selected because it is the largest degree program and includes many Gen Ed courses, allowing the OER degree to impact students across other majors as well. The courses selected for the General Studies z-degree were chosen in part for their transferability to nearby research universities. Montgomery College uses the term “z course” as a label for courses with no instructional material costs. There are some nuances: a lab course that requires the purchase of lab materials but not a textbook would still be considered a z course, while an English course that requires students to purchase primary texts would not.

Montgomery College’s experience with OER originated approximately five years ago with a sparsely attended workshop provided by the E-Learning, Innovation, and Teaching Excellence (ELITE) office, which offers professional development, technical training, and information on licensing issues. Since then interest has spread organically, and a few dozen faculty members at Montgomery College have begun teaching with OER.

The OER degree effort is led by the vice president of ELITE and the chair of the General Studies program. In order to coordinate across units on campus, a cross-functional leadership team has been established consisting of administrators, faculty chairs, registrar officials, institutional researchers, librarians, counselors, and communications/marketing managers. At their monthly meetings, the team discusses how to increase awareness and faculty buy-in and addresses any concerns that come up with the implementation of the OER degree.

In order to recruit instructors for the OER degree, project leaders reached out directly to faculty members who they believed were already using OER or might be interested in trying OER. For areas in which they did not know of instructors using OER, they asked department chairs and deans for recommendations. Program leaders personally contacted at least one faculty member for each course included in the OER degree. They wanted to be sure that faculty knew that no one was being forced into this – it is a choice. In these recruitment efforts, project leaders emphasize the pedagogical benefits and more consistent and comparable learning outcomes rather than cost savings to students. The OER degree leaders also hope that greater awareness and demand from students can generate more instructor buy-in.

The interdisciplinary aspect of the OER degree provides an important source of community for instructors who are the lone OER adopters in their departments. Initially, there will only be one OER section for some large introductory courses, but program leaders hope that willingness to teach OER courses across sections will grow with time. There is precedent for instructors to adopt courses developed by others, as “common courses” are now an established practice for online courses, though initially faculty were skeptical of the rigor and assessments. Standardized OER courses could operate in a similar way, whereby course materials are available for instructors who opt to use them. Collaborative course development and peer review are also established practices at Montgomery College.

Montgomery College: Service unit workshops spark faculty uptake of OER (Continued)

Project leaders want to make it clear that faculty are not alone in this effort. The ELITE office provides a number of supports, including OER course development workshops and an OER website with information on OER sources, copyright issues, research, and other important topics. Instructors are still responsible for putting their own materials online - they go through training and can consult with ELITE's team of eight instructional designers, but they build the courses themselves in Blackboard. Project leaders are also hoping the library will play an important role in providing discipline-specific advice on content and on copyright issues.

When the ATD initiative came out it was a great opportunity to piggyback on the smaller stuff we had been trying to do.

– Faculty Chair

Varying amounts of release time are available to instructors depending on the level of effort anticipated; for example, an instructor developing new course materials from scratch could get more release time than one who is primarily relying upon existing OER materials. (The college is not allowed to offer stipends due to their union contract.) The biggest obstacle for the OER degree initiative in the long term is sustainability. Administrators understand that converting courses to OER brings a cost, and that this is a cost shift back to the institution. They believe that the burden on faculty will diminish once the courses are created, since instructors should continuously be reviewing and updating their materials regardless of whether they use OER. Ultimately the biggest factor in sustainability will be whether OER degree courses lead to greater student success.

Grant Funded Initiatives

In each of the scenarios identified above (administration-led, grassroots-led, service unit-led), internal or external grant funds often play a role. Many participating colleges have participated in previous grant-funded efforts to develop OER courses and even degrees (e.g. the Hewlett-funded Zx23 program at the Virginia Community College System¹⁵). Colleges that have received grants to support OER in the past have the advantage of an existing base of OER courses and participating instructors upon which to build, and the ATD initiative provides an opportunity to continue activities that are not yet mature enough to be self-sustaining. They have learned about important facilitators for developing OER courses, such as providing supports and training for faculty. Some have also experienced the loss of momentum that can occur when grant periods end and are attuned to the need to plan ahead for post-grant sustainability. On the other hand, some previous OER grants came with different licensing requirements, and instructors who participated in those projects may need to make significant changes to their courses to comply with the requirements of the ATD initiative.

Where These Tracks Might Lead: Core Strategic Initiative

Any of these paths can converge into what we observed as the most advanced cases — colleges where OER degrees are viewed as core strategic initiatives and permeate activities and systems throughout the institution. This level of integration should enable a more coherent and consistent student experience — from the way courses are taught to the information provided by advisers and in course registration systems — than is feasible with a smattering of unconnected OER offerings.

What Do We Know about Participating Instructors?

The instructor survey and phone interviews provide information about what types of instructors were early participants in the OER Degree Initiative. The instructor survey also enables us to compare the attitudes and perceptions of faculty participating in the OER degree with those involved in previous OER studies and provides a baseline for future comparisons. For the most part, findings from the instructor survey were consistent with those from past studies,¹⁶ with

¹⁵ <http://www.vccs.edu/newsroom-articles/virginias-community-colleges-receive-grant-to-cut-textbook-costs/>

¹⁶ Allen, I. E., & Seaman, J. (2014). *Opening the textbook: Educational resources in U.S. higher education, 2014*. Babson Survey Research Group. Retrieved from www.onlinelearningsurvey.com/oer.html.

Allen, I. E., & Seaman, J. (2016). *Opening the textbook: Educational resources in U.S. higher education, 2015-2016*. Babson Survey Research Group. Retrieved from www.onlinelearningsurvey.com/oer.html.

Bliss, T., Hilton, J., Wiley, D., & Thanos, K. (2013). *The cost and quality of open textbooks: Perceptions of community college faculty and students*. BYU Scholars Archive. Paper 1378. Retrieved from <http://scholarsarchive.byu.edu/facpub/1378>.

Bliss, T., Robinson, T. J., Hilton, J., & Wiley, D. A. (2013). An OER COUP: College Teacher and Student Perceptions of Open Educational Resources. *Journal of Interactive Media in Education*. 2013(1), p.Art. 4. DOI: <http://doi.org/10.5334/2013-04>

Hassall, C. & Lewis, D. I. (2017). Institutional and technological barriers to the use of open educational resources (OERs) in physiology and medical education. *Advances in Physiology Education* 41 pp. 77–81. DOI: [doi:10.1152/advan.00171.2016](https://doi.org/10.1152/advan.00171.2016).

Jung, I. & Hong, S. (2016). Faculty members' instructional priorities for adopting OER. *International Review of Research in Open and Distributed Learning* 17(6).

OECD. (2007). *Giving knowledge for free. The emergence of open educational resources*. Paris: OECD Publishing.

Pritt, R. (2015). Mainstreaming open textbooks: Educator perspectives on the impact of OpenStax College Open Textbooks. *International Review of Research in Open and Distributed Learning* 16(4) pp. 133–155.

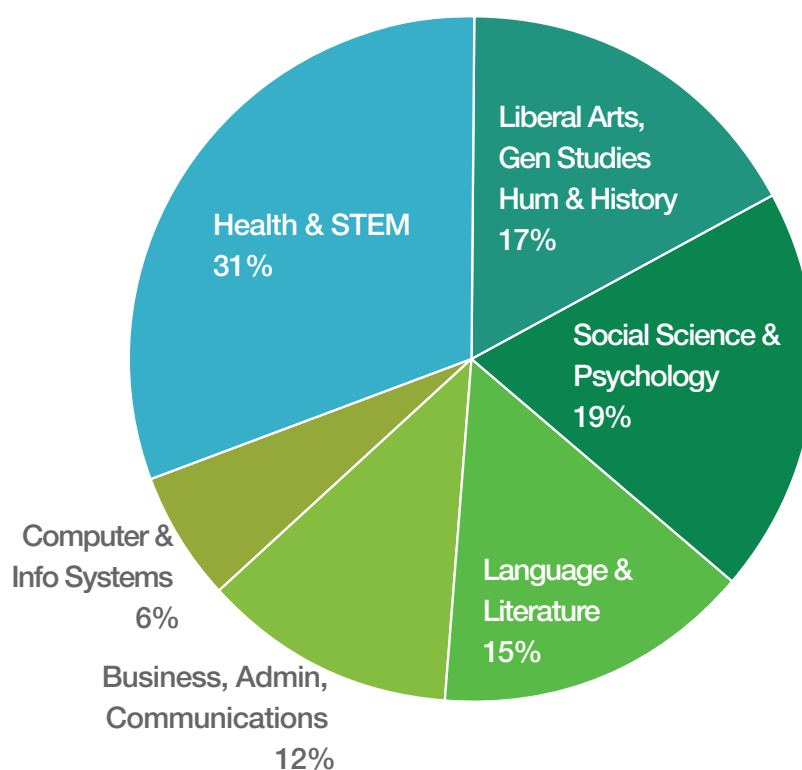
instructors generally reporting positive views of OER and citing time demands and difficulty locating suitable content as the largest barriers.

Figure 2 shows the breakdown of instructors by discipline for those who responded to the survey.

The largest group represents health sciences and STEM fields, followed by social science

and psychology. This distribution is likely driven in part by availability of OER course materials and recommendations from program sponsors about which degrees would be most practical to tackle. In the survey, 31% of instructors self-identify as full time non-tenure track, 41% as full time tenured and tenure track, and 19% as adjunct.

Figure 2: Breakdown of instructors by discipline



Pierce College: A coherent approach across levels in the system

Pierce College was an early adopter of OER, and their programs continue to grow. While some faculty had begun using OER resources as early as 2006, Pierce's first formal effort to develop a suite of OER courses began in 2010 with a grant through the Washington State Open Course Library project funded by the Bill & Melinda Gates Foundation. This initial grant sought to produce 80 OER courses, mostly in the associative arts. More recently, faculty at the Joint Base Lewis-McChord (JBLM) extended campus developed Pierce's first fully open degree, called the Pierce Open Pathway (POP), an AA transfer degree pathway which carries no textbook costs. The ATD OER Degree Initiative grant will support the adoption of the open AA transfer degree at the other two campuses as well as creation of a new fully-OER pre-nursing degree.

Pierce is particularly notable in that supports for OER are evident at all levels of the system:

- *Leadership* provides strong and visible support for OER. The president of the Fort Steilacoom campus was actively involved in POP development at JBLM and is writing her PhD dissertation on the topic of diffusion of OER. OER is also featured in Pierce’s strategic plan, which targets at least 50% of all coursework to be OER by 2020.
- A *full-time Open Education (OE) Program Manager* leads strategy, operations and support for the OER program. The program manager shepherds policy and communications related to OER, working with a faculty OER steering committee that meets quarterly, and assists faculty and administrators with the day-to-day development and implementation of OER courses. In this latter role she recruits faculty into OER and helps them find OER materials and move through the process of adopting materials and navigating copyright. She offers professional development both formally and informally. The program manager is also president of CCCOER, which provides a tight linkage between faculty needs and the assistance that can be found through the consortium.
- *Students* at Pierce are at the forefront of enthusiasm and advocacy. The student government held a rally during finals week on textbook affordability and OER during which they passed out red t-shirts emblazoned with “#TextbookRevolution.” Every Tuesday student government members wear their t-shirts on campus and encourage others to do the same. Students routinely press faculty to move toward OER, and have even lobbied for statewide OER mandates with the Washington State legislature.
- *OER-savvy faculty* play an important role in supporting their peers. For example, the entire math department has moved to OER with impetus from two math colleagues that have been working extensively with OER for nearly a decade. Although faculty are far from unanimous in their support of OER—some have concerns over intellectual property or workload, and others are content with the way they are currently teaching—many are highly motivated, to the extent that in development of Pierce’s first degree program initial cohort size had to be limited because faculty demand exceeded support capacity.
- *Other important supports* for faculty include Pierce’s award-winning library, which is a well-established learning library whose staff bring a strong understanding of learning outcomes and how to get there. Librarians work with faculty to research, locate and curate resources, though they can be of assistance in other ways as well. Through a state-wide initiative called Library as Open Education Leader, “mini-grants” are available in which a librarian is paired with a faculty member for one semester to collaborate on building an OER course. There is also an instructional designer on staff that helps faculty with their OER-supported course designs.

The primary motivation for OER has always been cost savings for students, which Pierce leaders hope will lead to access and success. But goals are continuing to evolve with experience. Some faculty have found that redesigning for OER is an excellent opportunity to introduce different, more student-centered types of learning, and to ask students to create and to make decisions rather than using a textbook passively. Says the OE Project Manager, these improvements emerged as a side effect early on, “but now it’s the point.”

Some important characteristics of participating instructors include:

- **Over half of the instructors surveyed are or will be teaching with OER for the first time**, indicating that the OER Degree Initiative has already engaged somewhere in the range of 150–200 instructors who have no history of OER involvement.
- **83% of instructors have taught online and/or hybrid courses before and report a high level of comfort with using online materials** rather than print textbooks. Though we do not have comparison benchmarks, these characteristics suggest that participating instructors tend to be fairly technologically savvy.
- When asked on the survey to rank factors influencing their decision to participate in the initiative, **personal interest / self-motivation was by far the most important factor**, with over 80% citing this as one of their top three reasons. **Encouragement from a department chair or administrator was the second most important factor**, and was cited by over half of instructors. This is a departure from past OER studies,¹⁷ which report little evidence of administrative encouragement, and likely is a reflection of the institutional focus of the ATD initiative. Recommendations from a colleague in the department or the offer of a stipend were the next most important factors, with stipends more often cited as a second or third factor.
- **Instructors participating in the OER Degree Initiative have considerable experience with collaboration**, with close to half reporting that they have collaborated with a colleague to develop a course in the past two years, and nearly one third reporting that they have either reviewed or had a course reviewed by a peer. A smaller share (15%) said they had co-taught a course in the past two years.
- On **average these instructors care greatly about the cost of materials for students**. As shown in Figure 3, the top three factors faculty cited for selecting required course materials were quality of materials, cost to student, and comprehensive content and activities. The ranking of these criteria differs remarkably from the 2014 Babson survey findings, in which only 2.7% of faculty members identified cost as one of the top three factors, compared to 70% in this survey.¹⁸ In SRI's survey, adaptability / editability of content was ranked relatively low on the list of criteria for selecting course content, well below quality, cost and comprehensiveness.

17 Hassall, C. & Lewis, D. I. (2017). Institutional and technological barriers to the use of open educational resources (OERs) in physiology and medical education. *Advances in Physiology Education* 41 pp. 77–81. DOI: doi:10.1152/advan.00171.2016.

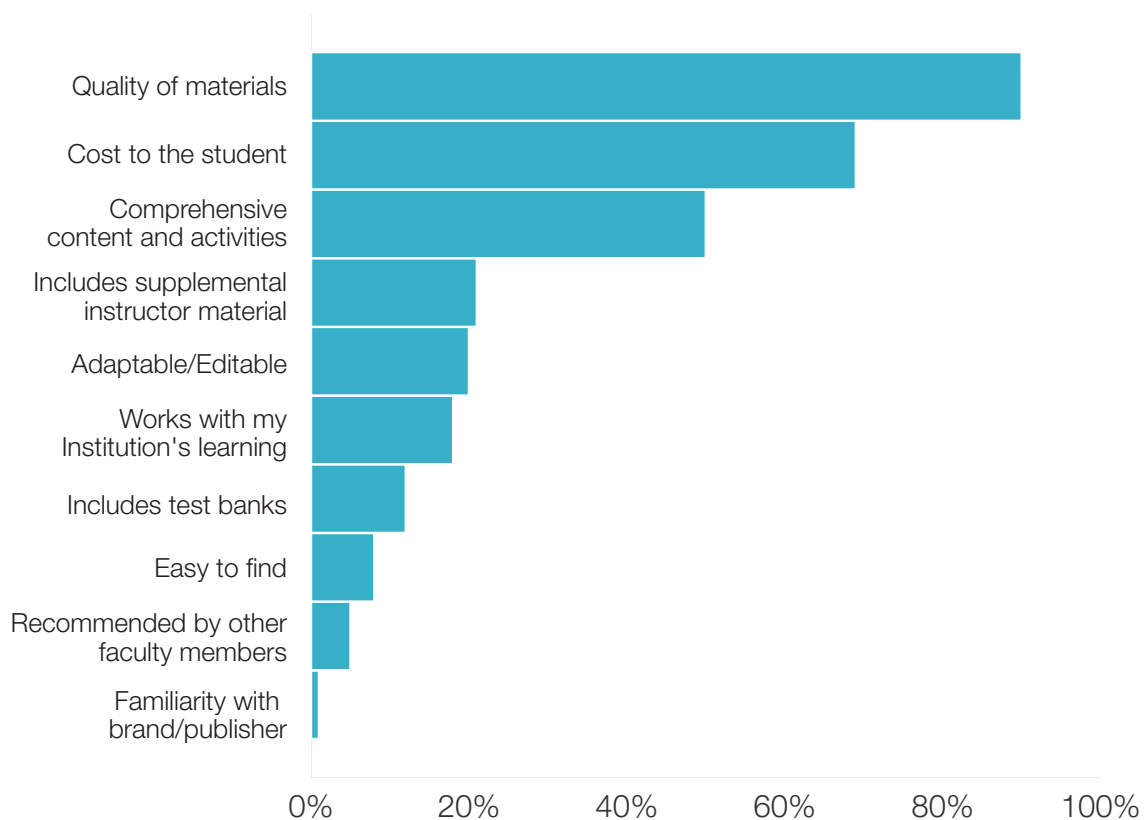
Murphy, A. (2013). Open educational practices in higher education: Institutional adoption and challenges. *Distance Education* 34(2) pp. 201–217. DOI: <http://dx.doi.org/10.1080/01587919.2013.793641>

OECD. (2007). *Giving knowledge for free. The emergence of open educational resources*. Paris: OECD Publishing.

18 Allen, I. E., & Seaman, J. (2016).

Figure 3: Criteria for selecting course materials

When selecting required course materials, how important are the following in your selection?



While faculty participation in OER was mostly on a volunteer basis, administrators were strategic about which faculty and departments were targeted for participation. Interview and survey data both suggest that OER degree coordinators initially focused recruitment efforts on instructors who had previous experience with OER or are seen as open to experimentation and innovation.

In sum, the pool of instructors involved in the first stage of the OER degree initiative have some distinctive characteristics such as technological savvy, experience with collaboration, and concern about costs to students. These traits may have made them attractive targets for early recruitment.

What Does It Take to Launch an OER Degree?

Developing an OER degree involves a broader set of institutional investments in course development and infrastructure than supporting individual faculty-led OER course conversions.

This investment involves a coordinated planning process, modifying institutional systems to identify OER in course catalogues and possibly charge per-course fees, and enlisting the assistance of non-instructional support and advising staff. ATD's grant funding covers a portion of the necessary investment and support services, while colleges are required to augment these funds with financial and staffing resources.

This section describes the primary activities observed during the early stage of the initiative, some of the issues that are arising for participants, and how some colleges are working through these challenges.

Course Development

Launching an entire OER degree typically involves converting a minimum of 60 credit hours (or about 20 courses), though most grantees proposed significantly more than that.

This level of effort depends on the number of new OER courses under development and the time requirements among instructors, some of whom are developing OER courses for the first time. Grantees are implementing phased rollouts of these courses, and the survey indicates that 86% of instructors were focused on introductory level courses during fall 2016/winter 2017.

Personnel costs are expected to account for the largest upfront investment in developing OER degrees. Nearly two thirds of instructors indicated that developing or adapting OER courses required at least 50% more time compared to using traditional instructional materials. To compensate for this effort,

instructors typically receive stipends or release time (union contracts may restrict what types of incentives colleges can provide), and these are sometimes adjusted to reflect the level of effort required to convert a particular course to OER and the number of instructors involved.

Instructors' extra time commitment may reflect their desire or need to create customized courses instead of adopting existing OER materials in their entirety.

Nearly 20% of instructors reported creating their own OER materials and about half made moderate or extensive revisions to existing materials (e.g., selecting modules, reordering content, or creating a substantial amount of new content).

Consistent with previous OER studies, **instructors reported that lack of time to locate and vet OER content was the top barrier to course development.**

The time required to develop OER courses varied widely, with some instructors saying it only took a few hours to find and curate materials, while others spent weeks developing course material. A key factor influencing the amount of time faculty spent was the availability of materials that were easily adaptable for their courses, were of high quality, and met the "open and free" requirements of the grant.

Some instructors found that courses they had previously thought of as OER used materials that were free to students but not openly licensed.

For example, resources subscribed to by the library and freely available online content such as TED Talks would not qualify as open. Some faculty have struggled to find openly licensed images, such as an art history instructor concerned about being able to use his image collection, a government professor having trouble finding openly licensed photographs

depicting the voting rights era, and a physiology instructor needing to use pictures of muscles in the human body.

In order to sidestep copyright issues and to gain early momentum launching new OER courses, some instructors and administrators have prioritized use of existing materials that are already known to meet certification requirements and are relatively comprehensive, such as those provided through Lumen Learning¹⁹ and Rice University's OpenStax²⁰

Collaboration with Colleagues

Collaborating with colleagues on the development and/or collection of OER materials is appealing to many faculty members but can be challenging. Several instructors expressed a desire to connect with peers in their field to make sourcing material more streamlined and lower the development burden. Examples include a pharmacology instructor who is collaborating on developing an OER course with two peers in another state and an organic chemistry professor in one of the consortium institutions working with peers at another college in the system to locate and create materials.

So far, however, course development for the OER Degree Initiative has mostly been an individual activity. Sixty-three percent of instructors reported sole responsibility for the content of their OER courses. Barriers include:

- **Lack of available peers.** Some participants are the sole instructor of a particular subject at their college or the only one in their department

I think the challenges of doing this from a standpoint where there's not a... team is taxing.

– Faculty

involved in the initiative. For example, a sociology professor who is the only OER adopter in her department said she is eager to connect with other faculty at her institution to reduce isolation and gain access to a support network.

- **Lack of access to other subject matter peers at other institutions.** Interviewees noted they would like to work with someone in their field at another institution but they were unsure how to connect with them.
- **Individual incentives can discourage collaboration and sharing,** according to several instructors, for example if instructors need to fill their own sections of a course in order to secure employment. In general, instructors appear more likely to collaborate on locating, vetting and developing instructional materials (e.g. open textbooks) than on designing the course itself.

Because it's so time-consuming, it's difficult for some faculty to want to share to that degree. They put in a lot of work and build fantastic courses so it becomes competitive because you want your classes to fill.

– Faculty

¹⁹ Lumen Learning provides openly licensed digital course materials resources in addition to technical assistance. <https://lumenlearning.com/>

²⁰ OpenStax is a non-profit organization based at Rice University that provides openly licensed e-textbooks. <https://openstax.org/>

Course Development Support

Instructors are taking advantage of supports available to them through their institutions. Just over half reported seeking help from instructional designers or instructional technologists at least once. Moreover, in our survey, instructors were less likely to report lack of administrative support and incentives as major barriers compared with other OER studies²¹, suggesting that participating colleges have moved quickly to put supports in place or had them available already. For example, at one institution a librarian received release time in order to devote a share of her time to assisting with OER course development. In a few instances, instructors turned to existing instructional design and instructional technology centers for help in designing their courses.

Still, a large group of participants have not yet received these forms of assistance, and other services such as the library have fairly low engagement. 58% of instructors have never received help from library staff, and only 13% went to librarians for help on more than three occasions. Only 6% of instructors reported getting help from students. **These findings suggest that there may be an opportunity to increase use of supports to reduce course development burden.**

Professional Development and Training

The provision of professional development opportunities through Lumen and CCCOER is a critical component of ATD's OER Degree Initiative, and there has been considerable progress in engaging faculty with these supports. Seventy percent of instructors reported having received training, and two thirds were either very satisfied or somewhat satisfied with the training provided by their institutions. Most faculty members received training on development and implementation of OER courses from Lumen, especially in colleges that are relatively new to OER. Some colleges, typically ones with greater experience delivering OER courses, have established internal training programs for faculty. In other cases instructors had access to OER courses provided by other institutions, such as one provided by Tidewater Community College²² in the Virginia Community College System and another from Open Washington.²³

Community College Consortium for Open Educational Resources (CCCOER) aims to address the desire for a community of practice among faculty members developing OER and to provide additional forms of professional development. Uptake of CCCOER's services has been fairly low thus far: only three interview respondents mentioned using CCCOER as a resource to connect with colleagues, and 69% of instructors reported that they had never used CCCOER, while only 11% used it more than three times.

21 Hassall, C. & Lewis, D. I. (2017). Institutional and technological barriers to the use of open educational resources (OERs) in physiology and medical education. *Advances in Physiology Education* 41 pp. 77–81. DOI: doi:10.1152/advan.00171.2016.

Murphy, A. (2013). Open educational practices in higher education: Institutional adoption and challenges. *Distance Education* 34(2) pp. 201–217. DOI: <http://dx.doi.org/10.1080/01587919.2013.793641>

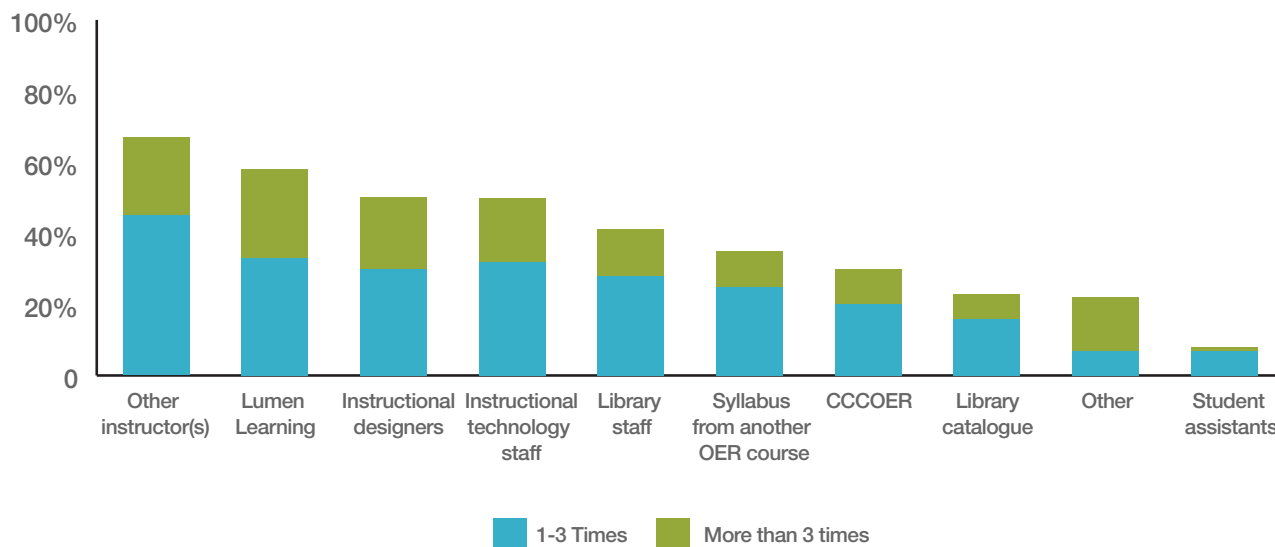
OECD. (2007). *Giving knowledge for free. The emergence of open educational resources.* Paris: OECD Publishing.

22 <https://www.tcc.edu/academics/degrees/textbook-free>

23 Open Washington is an OER network launched to support faculty use of OER. <http://www.openwa.org/>

Figure 4: Use of supports by instructors

How many times have you used the following supports while developing your OER course?



Inter-institutional Collaborations

Nearly half the ATD grantees are participating in consortia composed of multiple colleges from the same state systems. The primary benefit identified by consortium grantees is the opportunity to share course development. The Texas and Distance Minnesota consortia both have developed plans to distribute development of courses required for a common degree pathway across campuses and then to make OER courses available to the other grantees in the system. The Texas consortium shares course content and reviewing, while Distance Minnesota, an online network of colleges, allows students to cross-register for OER courses. This approach can avoid duplication of efforts where each campus offers fairly standard courses such as introductory biology and, in Texas, a mandated course on state history and government.

Community college systems may also create efficiencies through sharing of some infrastructure and systems required to support OER degrees. As noted above, in Virginia several colleges have made use of the OER training course developed at Tidewater Community College, an early pioneer in OER degrees. Within the CUNY system, librarians have reached out through their networks to build capacity among library colleagues to support OER course development.

Texas: The benefits of a consortium

Four Texas institutions—Austin Community College, Alamo Colleges District, El Paso Community College, and San Jacinto College partnered on a system-level grant for the OER Degree Initiative. The colleges took a creative approach to distribute the workload associated with OER course development: each partner is responsible for developing and sharing a subset of courses that combine to form a common degree pathway.

In Texas, students are required to take 42 semester credit hours of core curriculum approved by the Texas Higher Education Coordinating Board. For their OER initiative, the Texas consortium partners selected courses that fulfill the core curriculum component areas and form the core of the 60-semester credit hour AA and AS degrees in General Studies. These degrees were selected because they were offered at all of the partner institutions and are high enrollment majors. Additionally, the general education courses also support students across other majors in their graduation requirements, further increasing the number of students touched by the initiative.

Each college will contribute between four and nine OER courses towards the degree. A lead faculty member at one college assumes primary responsibility for developing a given OER course. This course is then piloted and reviewed by one or more faculty members at each of the remaining colleges the following semester. The purpose of the partner institution review is to determine whether any changes might be needed for adoption at their distinct college. The colleges have developed a shared rubric to guide these reviews. Several administrators suggested that while textbook reviews are traditionally conducted at their institution, the real-time course pilots and reviews taking place under the grant are unique to the OER Degree Initiative.

To recruit faculty to participate as course developers or reviewers, the TX consortium institutions put out calls for applications, approached specific faculty, or a combination of the two. Faculty receive stipends for course development and a more modest stipend for course review. An administrator at one of the institutions noted that recruiting reviewers was more challenging; some faculty expressed apprehension over adopting a course someone else had built. This college found it was helpful to communicate to potential reviewers that the OER course materials are not set in stone and can be adjusted or personalized—in fact, this adaptation was encouraged and in line with the philosophy of OER.

Austin Community College serves as the system lead for the Texas consortium. In addition to the supports and resources for OER course development that each college offers to faculty at their institution, the partners support cross-institution collaboration. To coordinate the OER degree development, leaders from each of the institutions participate in periodic, full-day planning meetings. Some faculty responsible for developing OER courses reported that they are already collaborating across institutions with the future reviewers of their course.

What about Sustainability?

To meet the requirements of the grant, institutions must offer at least one OER section for each course on the degree path. Some colleges are looking beyond that immediate goal to issues of longer-term sustainability, which require engagement of larger numbers of faculty as well as more systemic supports that can carry the program beyond the impetus of the grant. A number of ingredients are likely to be crucial to sustaining OER degrees:

In this section we will reflect on emerging themes related to these topics, including challenges and ways forward.



Growing Faculty Engagement

The ability to retain and recruit instructors is crucial to sustaining OER degrees, and survey data indicate that recommendations from colleagues are an important factor in attracting new participants. One approach to measuring the likelihood of an intervention spreading is a Net Promoter Score (NPS).²⁴ NPS is an industry-standard metric for assessing the likelihood of a company's service or product being successful in the marketplace, and here we make the assumption that this metric can also apply to a category of content or intervention such as OER. The theory behind NPS is that, for a product or service to scale, current users must positively promote it to others in order to attract new users. Respondents who rate their likelihood of recommending a product or service (in our case, OER) to colleagues as 9 or 10 (out of 10) are most likely to act as positive advocates, or promoters, 7–8 are considered passives, and those who assign a likelihood of 1–6 are detractors.

In our survey, 42% of instructors qualify as promoters, 29% are passives, and 29% are detractors, yielding a net promoter score of 13 (42 minus 29).²⁵ This positive NPS bodes fairly well for dissemination from the current participants. It falls below the “gold standard” threshold of 50 used by industry, but we should bear in mind that 22% of instructors had not yet begun teaching OER courses, and their average NPS is significantly lower than those with more OER experience.

Moreover, survey evidence does not support the view (heard in many interviews) that faculty in certain disciplines are especially resistant to OER. We did not find significant differences in promoter scores by discipline, and instructors in literature and humanities were roughly as likely to recommend OER to a colleague as instructors in STEM fields.

As has been seen in past surveys, instructors with experience teaching with OER report more positive views of OER.²⁶ Not surprisingly, instructors who have not taught with OER before are significantly less likely to recommend it to colleagues. We did not find that instructors with experience teaching online and hybrid courses were any more likely to advocate teaching with OER.

Looking ahead, a key question is how to maintain (or improve) these attitudes while expanding the pool of OER instructors beyond those hand-picked by administrators. Our data collection surfaced several factors that may contribute to recruitment and retention based on strategies colleges are currently employing and barriers identified in this report:

- Lowering barriers to course development through provision of training, supports and opportunities to connect with peers;
- Getting students involved in evangelization and raising awareness of the burden instructional material costs can pose;

²⁴ For an explanation of the Net Promoter Score genesis and method, see Reichheld, F.F. (2003), *The One Number You Need To Grow*, Harvard Business Review, December issue. Accessed online on 3/28/17 at <https://hbr.org/2003/12/the-one-number-you-need-to-grow>.

²⁵ The survey question asked: “How likely are you to recommend OER to a friend or colleague teaching the same course you do?” Response options ranged from 1 to 10, with 1 labeled as “Extremely unlikely,” 5 labeled “Neither likely nor unlikely,” and 10 labeled “Extremely likely.”

²⁶ Pritt, R. (2015). Mainstreaming open textbooks: Educator perspectives on the impact of OpenStax College Open Textbooks. *International Review of Research in Open and Distributed Learning* 16(4) pp. 133–155.

- Aligning instructors' incentives (e.g. compensation, performance evaluation criteria, job security) with underlying tenets of OER, such as taking a more active role in shaping course content, sharing instructional materials, and collaborating on course development with colleagues; and
- Positioning the degree pathway itself as a recruitment tool, meaning that instructors are being asked to participate in a larger intervention rather than one-off course conversions, so it is expected to offer more widespread benefits to students.

Addressing Concerns about OER Degrees and Academic Freedom

Several administrators expressed concerns that that an institutional policy supporting OER might conflict with—or be perceived as conflicting with—instructor prerogatives. They noted the importance of giving faculty ownership over the process and making participation optional. Some project leaders have made a point of cultivating strong grassroots support for OER within the faculty and avoided use of administrative authority to resolve problems except as a last resort. So far, this approach appears to be working. Only 6% of instructors reported in the survey that they had no role in selecting required materials for their courses, and instructors did not cite loss of control over content as a personal concern in interviews, though some stressed the importance of communicating carefully about the OER degree with colleagues to avoid creating that impression.

Mandates backfire when it comes to how people teach.

– Faculty

The goal is not to be a 100% OER college, but to have that option... I don't want to take away from a faculty member... they should have the right to use certain materials if they choose.

– Administrator

One project coordinator suggested that OER could follow a similar path as online courses at her college. They use a master course model in which a set of collaboratively developed and approved materials are available for online courses, but individual instructors have discretion over which of these materials they wish to use, if any. Initial skepticism of that model for online courses has abated with time, and a similar evolution seems feasible with OER courses.

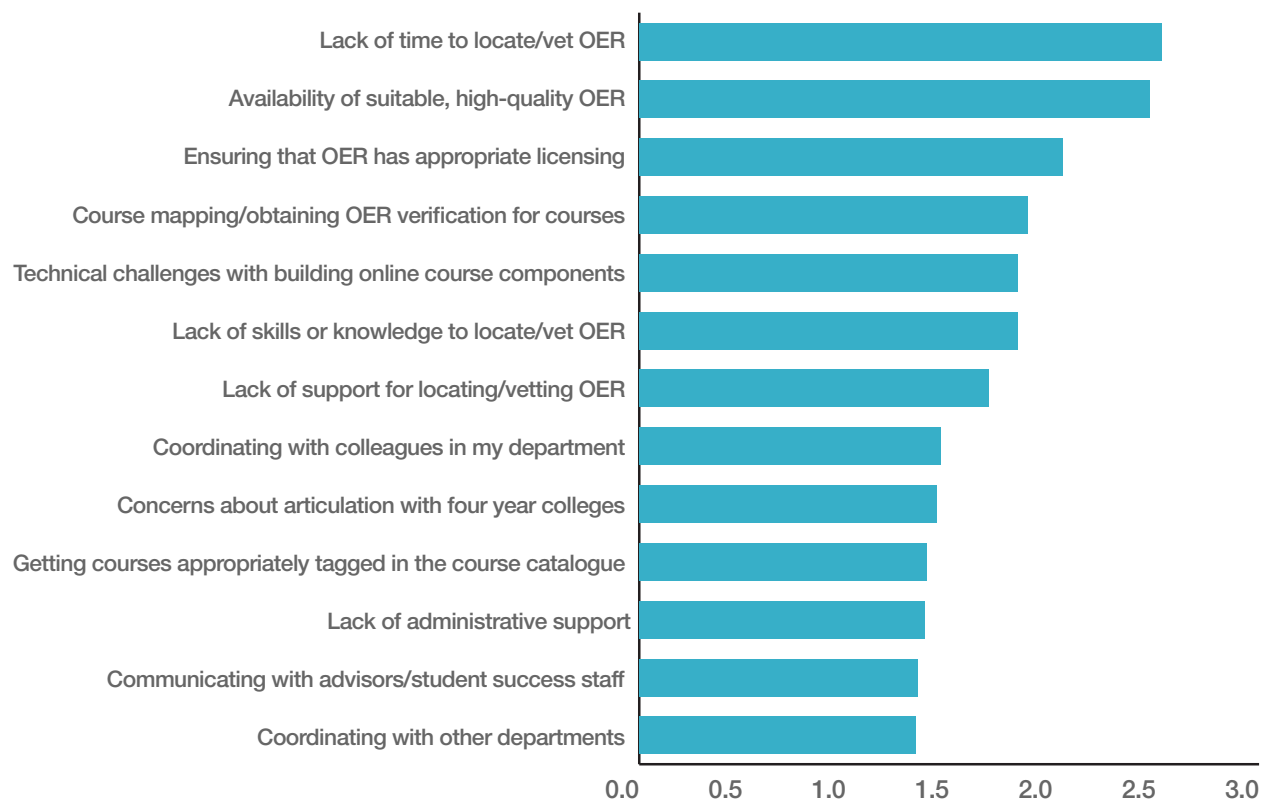
Lowering Barriers to Course Development

Instructors ranked barriers associated with course development as higher than those associated with connecting OER courses to institutional policies and systems. In our interviews as well, instructors generally seemed to be immersed in course development and less focused on broader coordination efforts. This may be a function of the role individual instructors play, as well as the stage of development of the initiative.

Lack of time to locate and vet OER content was cited as the top barrier faced by instructors, followed by availability of suitable, high quality content. Colleges may be able to alleviate the first barrier by providing more support from libraries and other service providers, perhaps even students. It is worth noting that instructors who made use of library staff or CCCOER

Figure 5: Barriers to OER degree course development

To what extent have the following factors been barriers to developing OER degree courses?



are more likely to recommend OER to colleagues.

Training is also an important factor: instructors who were satisfied with the training provided by their institutions perceived significantly lower barriers and were more likely to say they would recommend OER to colleagues.

Developing an OER course has many common requirements and challenges as other online formats: instructors must source high quality materials that meet the needs of their curriculum and assemble them in formats that are easy for students to access.

Several of the top barriers in Figure 5, however, are specific to OER. The supply of materials that are not only available and free but also carry an open license is typically more restricted; ensuring open

licensing of materials and obtaining certification for course designs are also commonly-cited barriers.

This has implications for instructor perceptions of OER; a key question going forward is whether a critical mass decide it is worth the effort.

Institutionalizing OER Degree Systems and Policies

Embedding OER degrees into institutional policies and systems is also important to sustaining these programs and to providing a consistent and coherent student experience.

For example, units that interact with students such as advisors and student success staff should be

prepared to deliver clear messages. How will advisors respond if students question whether OER materials are the same quality as commercial textbooks? Or if students raise concerns about being able to transfer OER course credits to four year institutions — which is likely to arise given that so many grantees opted to focus on transfer degrees?

While instructors are presently less concerned with what we categorize as institutional barriers, project coordinators are aware that these issues must be addressed. They are engaging with units such as academic advising, student success, and registrars in order to ensure that stakeholders are informed and that students have access to information about OER courses. In some cases, cross-departmental committees include representatives from these units and meet regularly to work through coordination issues.

Another crucial factor is how OER degree pathways take shape. **Some interviewees raised concerns about the sustainability of the “thin line” approach of stringing together single OER sections to form a pathway, as any instructor attrition will cause the line to fragment.** Just converting large enrollment gateway courses, on the other hand, has advantages in terms of sustainability but lacks the potential for cumulative impact on individual students (and reaching the necessary departmental consensus can be a long process). Some combination of the two may be the optimal approach.

Ultimately, the sustainability of OER degrees, like any initiative, depends on the extent to which the intervention becomes embedded in organizational systems and connected to the broader institutional strategy. The mission fit with community colleges and the possible convergence with other “pathway” initiatives provide opportunities to make such connections.

Identifying Ongoing Funding and Resources

Once upfront investments in launching OER degrees are largely complete, colleges will still incur ongoing costs. Courses will likely require adaptation to remain current, and additional OER courses may need to be developed in response to the changing requirements of degree programs. The cost of Lumen’s services is covered by grant funds, but colleges will need to find alternate sources of funding if they wish to continue using these services (or those of other external providers) after the grant period.

It is reasonable to expect the per course development cost will decline as instructors gain experience locating and evaluating OER materials and the library of available OER grows. As the network of experienced OER course developers expands on campus and across disciplines, it should be easier for instructors new to OER to receive additional guidance and support. There are also opportunities for instructors to engage further with academic and technical support staff, which could improve efficiency.

Achieving sustainability will be easier if colleges begin planning now to fund the ongoing cost of supporting OER. Some colleges are already charging students access fees for OER courses, usually \$30 or less. 25% of participants in the instructor survey reported that students were required to pay an access or support fee to access their OER course. Another option is to levy a general fee to support OER, though some administrators are opposed to adding a new fee for this specific purpose when students are already faced with multiple fees in addition to tuition.

Creating sustainable OER degrees necessitates a shift in thinking from “what does it cost”

to a more useful understanding of “what do we get for the resources we spend.” This shift requires that colleges gain a better understanding of total OER costs as well as how those resources are used. The ability to connect those resources to student outcomes is another key factor. Moreover, funding to support OER degrees does not need to be new money; colleges can identify opportunities to reallocate resources that may be generated from improvements in student success. For example, researchers have hypothesized that decreased drop rates will generate increased tuition revenue that can be used to offset OER implementation costs.²⁷

By connecting student success with financial success, OER can become financially sustainable as the tangible “return” on investment for colleges becomes clear. An important principle of ATD’s initiative is encouraging colleges to view OER not as a temporary, one-off grant funded project but rather as another tool to support student success.

Understanding the Theory of Change

Participants have varying views about the specific mechanisms through which OER degrees will benefit students. For example, some expect improvements in student outcomes will be driven by reduced financial burden, while others expect to see more impact from improvements in pedagogy. **It is important that institutions develop a clearly defined and shared understanding of the rationale for an OER degree in order to ensure consistent messaging and policy decisions, and to sustain commitment among faculty and other key stakeholders.**

I teach at a community college because I believe in their mission to provide access to education, so I feel like part of that is providing free textbooks and resources for students as well.

– Faculty

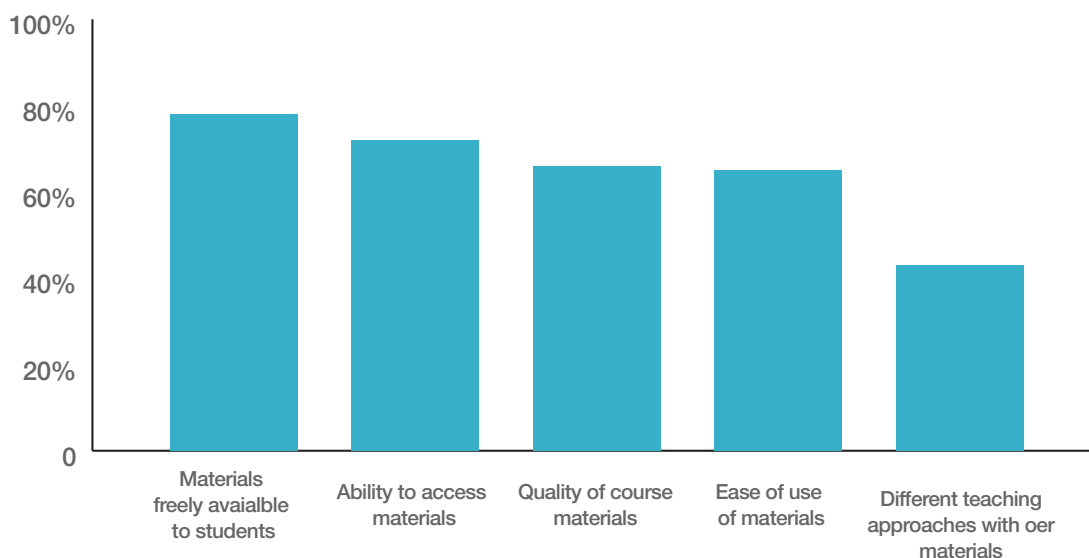
According to the survey, the most prevalent view among instructors is that using OER can benefit students by alleviating cost burden. Interview data were consistent with survey responses.

At the same time, some participants raised concerns that a case for OER based on student cost savings alone will not sustain long-term efforts. At one college, project leaders argued that the rationale for OER courses will need to focus on pedagogical benefits in order to maintain momentum after the grant period. They noted that instructors can pursue other avenues to reduce the cost of textbooks that require less time and effort than going “full OER.” Numerous grantees cited examples on their campuses of free or low cost courses on their campuses using library resources and other free resources on the Web. Publishers are also starting to offer lower cost models and other flexible options that may offer some benefits associated with OER.

Moreover, some interviewees whether OER is the best strategy for addressing the financial burden of college. Not only does developing “free and open” courses have an associated indirect cost (e.g. faculty time), but using services from organizations such as Lumen would also have a direct cost to the institution once the grant period ends.

²⁷ Wiley, D., Williams, L., DeMarte, D., & Hilton, J. (2016). The Tidewater Z-Degree and the INTRO model for sustaining OER adoption. *Education Policy Analysis Archives*, 23(41). <http://dx.doi.org/10.14507/epaa.v23.1828>.

Figure 6: How instructors expect use of OER to impact student outcomes
How do you think the following factors are likely to impact student outcomes (e.g. retention, completion, grades) in OER courses? Percent of respondents selecting "Positive Impact"



Meanwhile, some respondents noted that **OER creates pedagogical advantages for faculty such as having access to more up-to-date course material rather than textbooks that often become outdated within a year or two.** OER also gives them greater flexibility to determine what types of text and materials are most relevant to their courses. To some extent these advantages pertain to any online materials, but open licenses afford the additional benefit of enabling real time updates by any instructor or content contributor. One instructor emphasized the advantage of being able to update and edit the textbook for his course on U.S. government, noting that publisher textbooks tend to have substantial inaccuracies and outdated information.

Instructors were less likely to predict or report positive impacts from different teaching approaches with OER materials than from cost savings to students, suggesting that many faculty members do not expect to substantially modify their instructional approaches due to OER and/or

We've been upfront about this: while we're saving students money, it's a cost-shift back to the institution. Nothing is for free.

– Administrator

that they are less confident of the benefits to students. The majority of instructors who have taught with OER report that students have about the same level of engagement (62%) and preparation (66%). **Thus, a concern for sustainability is that instructors are experiencing time-consuming challenges specific to the open licensing requirements, but they are not yet widely taking advantage of or seeing the benefits of the adaptability that an open license provides.**

On a positive note, instructors who have taken advantage of supports for course development such as instructional designers and library services and who have experience using OER are more likely to report

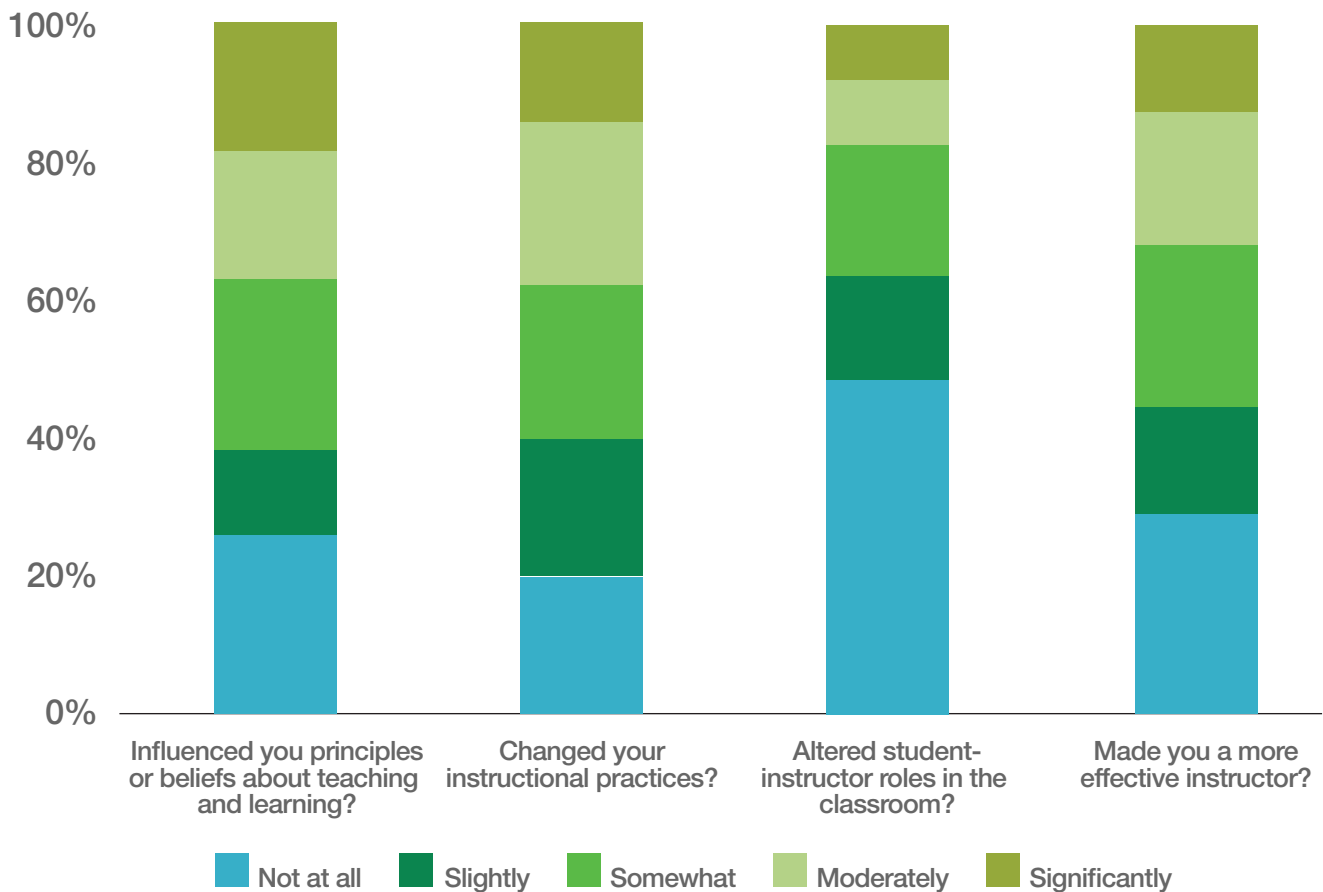
changes in pedagogy. **It is possible that the combination of strong support and experience will enable more faculty to create course experiences with meaningful and observable benefits to students.**

In sum, sustaining a complex intervention of this nature requires alignment of many moving pieces, consideration of how OER degrees can be compatible with institutional norms and policies, and advance planning for ongoing resource flows.

It's wonderful that I can adapt and remix other sources and learning objectives. ... And I can also include other strategies that help students be successful... That's the beauty of OER, you can adapt and make the materials work for your classroom.

– Faculty

Figure 7: How instructors expect use of OER to impact instructional practices
To what extent has OER...



Looking Ahead

Over the remaining two years of the study SRI will continue investigating the OER degree implementations and will also turn our attention to the academic and economic impacts of this initiative. We will survey students and instructors, visit selected colleges to hear first-hand about participant experiences, and collect information about costs, enrollments in OER courses, and student outcomes. These data collections will enable us to examine the reach of the ATD initiative and conduct quantitative analyses of the impacts of OER degrees, principally whether students who take a substantial number of OER courses show signs of improved progress to degree, as well as the cost effectiveness of this model. And, as the pool of participating instructors expands, we will learn how perspectives on OER change and whether instructors increasingly feel they are able to realize the potential of OER to improve pedagogy and see benefits for their students.

As the initiative proceeds, we expect that participating colleges will seek to make progress in implementing course development supports and institutional policies that connect OER degree pathways with their broader student success strategies. We stand to learn a great deal from this ambitious program about the real potential of OER to substantively improve student outcomes at a broad range of community colleges, and what it will take to achieve that goal in practice.



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