

## Open Textbooks: The Current State of Play

*We hear a lot in higher education about open educational resources (OER), but how extensively are they being used? Use of open textbooks, one form of OER, is gaining traction across different types of colleges and universities, and the catalog of OER textbooks continues to expand.*

Digital technology has revolutionized many aspects of higher education. Over the last decade, that revolution has taken hold in new thinking around the textbook—that tried-and-true tool of virtually every college course. Apart from work to turn textbooks into interactive experiences rather than from static units, the use of open textbooks is rapidly gaining traction.

Open textbooks are a subset of OER, a broad category that includes courses, assessments, articles, case studies, and many other types of educational materials. The principle of OER is that materials produced by one party can be used freely by others. In this context, “freely” means both that the material is openly available free of charge—either in the public domain or under a license such as that provided through Creative Commons—and also that it is made available with implicit permission that the user can reuse, revise, remix, and redistribute the resource. ([Creative Commons](#) is a nonprofit organization that licenses a free, standardized pathway for creators of materials to share permission to use them.)

OER first gained traction with such initiatives as the Massachusetts Institute of Technology’s [OpenCourseware](#), which has posted materials from over 2,000 college and university courses, and the [Open Course Library](#), another collection of shareable course materials. In 1999, Richard G. Baraniuk, Victor E. Cameron Professor of Engineering at Rice University (TX), founded an organization called Connexions (now called OpenStax) to provide a space where authors and learners could share and adapt educational materials, including textbooks. A few funders also started supporting efforts to develop open textbooks.

The case for open textbooks is straightforward. First, they help students save money by reducing or eliminating book costs. On estimate, students spend as much as \$1,000 or \$1,200 annually on textbooks. In California, for example, the cost of textbooks can be as up to half as much as tuition at community colleges, while in Hawaii the cost of textbooks can eclipse tuition fees. Some believe that not all students purchase required textbooks because they are too expensive. Observing that overall student debt now tops \$1.2 trillion, Cable Green, the director of global learning for Creative Commons, says, “to the extent that there is a larger conversation happening about making education more affordable, then open textbooks is part of that.”



Proponents of open textbooks say that they are a ready option, especially for lower-level courses, where much of the content is similar no matter what type of institution offers them. The other main benefit is that open textbooks can be readily updated to include relevant new knowledge, perhaps improving pedagogy. There is also an argument that open textbooks promote active learning by engaging the student more interactively with a text—or even giving that student a chance to contribute to the text’s development.

## OPEN TEXTBOOKS IN DEVELOPMENT

Slowly but definitively, a groundswell is building in the development and adoption of open textbooks. Notably, too, a variety of institutions across higher education are involved. Several examples of current practice are illustrative:

- [Open Textbook Catalog](#). The University of Minnesota created this online library of free, open-source, peer-reviewed, high-quality textbooks that also allow faculty to customize texts to better meet their students’ needs. Purdue University (IN), Oregon State University, and other institutions have been involved in the effort. This past summer, North Dakota’s legislature weighed a plan to become a partner, too, and move toward wider adoption of open textbooks. The project pays faculty members to review open textbooks, as does a similar effort at the University of British Columbia (Canada), and the two initiatives share those peer reviews.
- In August, Rice University-based publisher [OpenStax College](#) announced \$9.5 million in new grants to develop 10 additional titles for its catalog of free, peer-reviewed college textbooks. The project’s first seven books, adopted for use in nearly 900 courses at community colleges, four-year colleges, universities, and high schools, saved students more than \$13 million. OpenStax College plans to expand its library to 21 titles by 2017. Supporters include the Bill & Melinda Gates Foundation, the Hewlett Foundation, and other philanthropies.
- Multimedia Educational Resource for Learning and Online Teaching ([Merlot](#)), an early initiative in OER, is a curated collection of free and open online teaching, learning, and faculty development services contributed and used by the education community. A program of the California State University system, Merlot now has over 3,400 open textbooks—nearly 1,500 of which have undergone Merlot’s extensive peer review process or editorial review.
- More than 250 colleges have joined the [Community College Consortium for Open Educational Resources \(CCCOER\)](#), a joint effort by individual community colleges, regional and statewide consortia, the Open Courseware Consortium, the American Association for Community Colleges, the League for Innovation in the Community Colleges, and many other educational partners to promote awareness and adoption of OER. The CCCOER has links to open textbooks in a wide range of disciplines.



## OPEN TEXTBOOKS IN THE CLASSROOM

Colleges and universities are starting to embrace open textbooks with increased fervor:

- The University of Maryland University College (UMUC), which serves some 93,000 students worldwide, primarily online, is in the midst of an ambitious three-year [project](#) to insert OER content into all undergraduate and graduate courses by the fall of 2016. “About 60 percent of our undergraduate courses now have fully embedded open educational resources,” reported Marie A. Cini, provost and senior vice president for academic affairs at UMUC, who noted that as a result “over half of our courses now require students to pay nothing out-of-pocket for any kind of course materials or textbooks.” Vice Provost Karen Vignare added that the move toward OER also creates opportunities to improve course quality. OER materials at UMUC are curated and vetted through a rigorous review process that engages faculty, library staff, and instructional designers. “Through the selection process of finding open resources for learning outcomes, we have improved the quality of resources for our students,” Vignare said. UMUC estimates annual costs savings for students at as much as \$4 million, and plans research to assess how OER impacts student learning.
- Cable Green notes a trend toward adoption of open textbooks among faith-based private colleges. Seattle Pacific University, for example, announced in September that students in a new [Digital Education Leadership MEd](#) program will use OER and incur no textbook or software costs. Mercy College (NY) is part of the [Kaleidoscope Open Course Initiative](#), a grant-funded effort designed to implement an OER-based general education curriculum across colleges and universities that serve predominantly at-risk students.
- [Tidewater Community College](#) (VA) is partnering with Lumen Learning to offer a textbook-free associate of science degree in business administration based on Lumen’s “Textbook Zero” model. The program uses high-quality open textbooks so that students will pay nothing for books.
- The Maricopa County Community College District (AZ) has embarked on a [program to encourage faculty to adopt OER](#)—including textbooks—with a goal of saving students \$5 million over five years. They are also experimenting with a zero-cost-for-textbooks model for a popular degree in science, technology, engineering, and mathematics (STEM) that helps students transfer to Arizona universities.

Developing quality open textbooks takes considerable resources. For example, Green says that OpenStax spends between \$400,000 and \$500,000 to develop one open textbook, as well as “a significant amount of money updating those books annually.” But after that, he says, there is a tremendous payoff. Once the books are built and

# STUDENT

given an open license, Green says, “the marginal cost of sharing those open textbooks with anybody on the planet goes essentially to zero.” Moreover, he says, transmitting books and storing them digitally means that the costs of three formerly expensive stages of the publishing supply chain—storage, replication, and delivery—are sharply reduced, if not eliminated entirely.

The savings to students accrue rapidly. The community colleges in Washington, for example, recently moved to develop and adopt OER materials, including textbooks, for 100- and 200-level courses. The project cost \$1.5 million and has already saved students upwards of \$10 million—and counting.

Reaction to open textbooks among faculty is mixed. While cadres of faculty members are behind virtually all the significant projects to develop open textbooks, the mindset persists among other faculty that “if I didn’t build it, it may not be good enough for my students,” as Green summarizes it. In a few cases where courses require highly specialized materials—such as a software program for an accounting course, for example—migrating to OER poses more of a challenge. Green notes, though, that many faculty resonate to the challenge of cutting the cost of college for students by using open textbooks. And many faculty who work with OER learn that its flexibility offers great opportunities for creativity in developing materials for courses. While some professors may never warm to the idea of open textbooks, it is fair to say that more faculty are becoming convinced of their value.

Some of the nation’s leading philanthropies are nudging the development and adoption of open textbooks through grants. At the same time, legislators are also leading the drive. In Congress, the proposed [Affordable College Textbook Act](#) would fund a grant program to support development of open textbooks at universities. Lawmakers in California, Florida, Washington, and other states have adopted legislation supporting OER. State education systems in Arizona, Minnesota, New York, and Virginia have instituted programs that support OER.

## WHAT DOES THE FUTURE LOOK LIKE?

How extensively open textbooks will eventually be adopted in higher education of course remains to be seen. For now, it appears that work to develop and use these resources is gaining momentum and having an impact not only on teaching and learning, but also on students’ budgets.

Cable Green suggests that the next steps for advocates of open textbooks will be to continue to hone the materials they are developing. “If we are going to truly compete with commercially published books that can cost upwards of \$150, the technology is going to have to be as good” for open textbooks, and developers will have to keep raising their standards for quality, he suggests. Accordingly, he says, developers of open textbooks are taking their craft to the next level, which he says entails “significant investments” in pursuit of “quality resources developed” and wider adoption of open textbooks across higher education.

## RESOURCES

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