

COMPLETE GUIDE TO

OPEN EDUCATIONAL RESOURCES



I ♥ my job

Low-cost, high-quality textbooks are in! CT asked three OER enthusiasts for their favorite tips and tools.

BY DIAN SCHAFFHAUSER

OER DEFINED: "OER are teaching, learning and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use and repurposing 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

4 MYTHS ABOUT OER

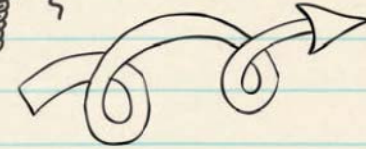
MYTH: STUDENTS NEED COMPUTERS TO USE OER. When Erik Christensen, chair of the Natural Science Department for South Florida State College, used OER for the first time in his courses, he actually passed out printed versions of the content to his students — and made a digital version available through the LMS.

MYTH: STUDENTS WANT THE TEXTBOOK. This used to be true, but it's getting less and less so. However, if a student insists on a hard copy, encourage him to use print-on-demand or create his own PDF for printing at home or at the copy center.

MYTH: OER IS SECOND-RATE COMPARED TO MAINSTREAM TEXTS. No longer! An infusion of millions of dollars in foundation and government money from the likes of Hewlett, Gates and others is resulting in professional products with full production teams and peer reviews that could pass any blind taste test.

MYTH: FACULTY HAVE TO FERRET OUT THEIR OWN CLASS MATERIALS. That may have been true two or three years ago, but by now, said Melissa Barlett, instructor in biology for the Center for Life and Health Sciences at Mohawk Valley Community College (NY), "We're getting to the point where there's a lot of readily available material." OpenStax makes PowerPoints available for its books and recommends multiple resources for questions and student activities. Also, third-party companies such as Boundless, Sapling Learning and WebAssign are popping up to fill in the gaps. Yes, they may charge for their offerings, but the use of an OER textbook with paid "extras" will still be cheaper than the alternative. ➡

6 TIPS FOR USING OER



1 If you're new to OER, start small, advised Christensen. Add a supplement, create a new activity, substitute a chapter or a homework set. Then build on that in discrete areas.

2 If you go with a complete OER textbook, expect to supplement it with content and learning objects from other sources too — just like faculty tend to do with traditional textbooks.

3 Be prepared to “sell” your OER strategy to your students so that they fully understand what's expected of them. Barlett honed her message from one semester to the next to make sure students realized that the material would be online and they'd need to bring devices to class to use it. For the next run, she intends to have PDF editions of all of her content, which would allow students to print out copies and forgo the computer, tablet or smartphone.

4 If the faculty slides provided with your OER textbook use the same images as the textbook does, switch them out for your own to give students another way to view the concepts. To find alternatives, go to Google Images and type in your search; from the menu choose “Search tools,” “Usage rights” and designate “Labeled for reuse.” These images can be used as freely as any other form of OER.

5 If you teach two sections of a course, try one with OER and one with a traditional textbook so you can do a clean comparison. That's what Barlett did: “Overall, the two classes were comparable to each other grade-wise and test-wise.” Christensen did the same and found “practically no difference between course grades, failure rate or withdrawals between using a traditional textbook and an online OER textbook.”



6 If students have iPads, let them use the free [Adobe Reader](#) for the iPad to solve their problems right on the page, said Christensen. The app features tools for annotating, marking up and commenting on any PDF document. To hand the assignments in, all students have to do is grab a screenshot image (by pressing the home button and the power button) and e-mail it to the instructor or upload it to the LMS.

6 ARGUMENTS FOR OER



MORE PICKUP OF ASSIGNED CLASS MATERIALS! In the traditional textbook model, some portion of your students couldn't afford the book and went without. With OER, they have no excuse not to obtain the content they need to succeed in your course.

GREATER SAVINGS! Few things in life are better than free, especially when you're a struggling student who didn't know he or she would be paying out between \$655 (according to the [National Association of College Stores](#)) and \$1,200 (according to the [College Board](#)) annually on course materi-

als. More specifically, students from a [Tacoma Community College \(WA\)](#) public speaking class posted a public thanks to their school for saving them a "collective \$833,000" in textbook costs over 18 months.

MORE STUDENTS! Whether it was the textbook cost savings or an excuse to turn on their devices in class, Christensen's course enrollment nearly doubled when he went with OER.

NO MORE UPDATES! Publishers tend to update their textbooks every two or three years, whether or not — according to some faculty — the coverage of the subject actually

1 ARGUMENT AGAINST OER

MORE WORK! If you're used to settling for whatever textbook your department chooses and using the resources that go along with that, then yes, OER definitely requires more effort. Any instructor who adopts OER has to identify just the right resources for students to use. That can take time.

requires it. Once you've adopted OER, you can stick with the version you're using for as long as you want.

YOU CAN PERSONALIZE EXAMPLES! Students relate better to examples that mesh with their own lives or use terms they know. If people are rowing across a lake in the textbook, why not make it the one next door to campus? If a question uses some generic person's name, why not make it your school mascot?

YOU CAN INTEGRATE DISCIPLINES! If your course is tied to another subject your students will be tackling next, you can modify your OER to add examples or explanations that tie to that other subject, making it easier for them to see the connections. ➡

18 OER SITES EVERY EDUCATOR SHOULD KNOW



◎ **COLLEGE OPEN TEXTBOOKS:** This site lists open textbooks organized by subject area, many of which have been peer reviewed for their suitability at community colleges.

◎ **LEARNINGPOD:** Pegged as the “largest library of free, online practice questions in the world, this Kaplan division teamed up with OpenStax to create question sets specifically for its open textbooks.

◎ **LUMEN LEARNING:** This nonprofit provides open courses with “zero textbook cost.” Their curriculum comes with all the OER students will require.

◎ **MERLOT II:** The **California State University System**’s collection of more than 45,000 resources is rated, peer-reviewed and tallied by how many “personal collections” each resides in. It lists more than 3,000 open textbooks, some of which have accessibility information for students with disabilities.

◎ **MIT OPENCOURSEWARE ONLINE TEXTBOOKS:** **MIT**’s library of online textbooks is one of the few sources for OER on aeronautics, civil engineering and materials science, among many other disciplines.

◎ **NOBA PROJECT:** Focused on psychology topics, Noba features more than 100 chapters written by experts and licensed under Creative Commons that can be used to build customized digital textbooks. The nonprofit also offers four ready-made textbooks so faculty don’t have to start from scratch.

◎ **OER COMMONS:** This digital hub created by the Institute for the Study of Knowledge Management in Education offers 73,000 kinds of OER, along with tools for creating OER, training on how to use OER and the ability to create OER “Commons” — groups that share resources for a given purpose.

◎ **OPEN COURSE LIBRARY:** Managed by the **Washington State Board for Community and Technical Colleges**, this content is organized by course.


◎ **OPEN EDUCATION CONSORTIUM:** The Open Education Consortium is a community of 240-plus schools as well as organizations and people who want to advance the idea of “open education.” It features an OER resource toolkit, webinars, in-person events and links to open textbooks.

◎ **OPEN LEARNING INITIATIVE:** **Carnegie Mellon**’s (PA) open courses (and associated content) denote a marked emphasis on STEM, including computing.

◎ **OPEN TEXTBOOK LIBRARY:** Run by the **University of Minnesota**, this catalog of open texts provides an easy way to search for content from initiatives like Saylor and independent professors.

◎ **OPENSTAX CNX:** This is **Rice University**’s (TX) “open space,” where educators have stashed thousands of learning objects that can be or are already organized into books. It is also the parent of OpenStax College.

◎ **OPENSTAX COLLEGE:** The basics are here: College Physics, Biology, Introductory Statistics, along with six other textbooks and more on the way.

◎ **OPENTEXTBOOKSTORE:** This site offers a catalog of OER textbooks focusing on math. 



© **THE ORANGE GROVE:** Plenty of state departments of education host digital repositories where their teachers can share content they've created. This one belongs to Florida, which has mandated that by 2015–2016 half of a K–12 district's textbook budget has to be spent on digital content and schools need to adopt digital-only curricula. The state's colleges are already feeling the impact of those practices.

© **SAYLOR.ORG:** Saylor Academy's resources cover content from art history to sociology, with search filters that can help you locate just the right book, recording, presentation, video, chapter or image. For example, Barlett uses [this 535-page PDF curriculum](#) in her college success class.

© **SPIRAL PHYSICS:** **Monroe Community College** (NY) professor Paul D'Alessandris' calculus- and algebra-based introductory physics texts were written under an NSF grant, but when mainstream publishers expressed no interest, he placed it online for the entire English-reading world to grab.

© **TEACH ASTRONOMY:** This online resource provides learning materials for introductory astronomy courses. For instance, Christensen did a mashup with Teach Astronomy's textbook and [astronomy simulations and animations from the University of Nebraska-](#)

Lincoln to eliminate the need for his students to buy a \$165 textbook.

5 IDEAS FOR SPREADING OER



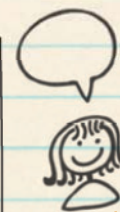
What's the best way to get people moving in the right direction with OER? "We always say that adopting OER is an all-college effort," declared Una Daly, community college outreach director for the [Open Education Consortium](#). She suggested five ways to broaden use of OER within your institution:

- 1) Do a **survey** to understand the level of OER awareness among faculty and to find out who your OER champions are.
- 2) Set up an OER **fellowship program** that will give those champions public recognition; provide faculty with release time to allow them to develop and update OER curriculum; and reward them with spiffs such as tablets — inexpensive but relevant tools for supporting their efforts.

3) Integrate OER awareness into your **professional development** efforts, whether that's at your center for teaching and learning, part of your "flex" days or something else.

4) Put your **librarians** on the job. "They're amazing," said Daly. "They're ideal people to help faculty who might be looking for materials."

5) Get **instructional designers** involved, since they can make sure OER content is accessible to students with disabilities. →



OER FORMATS, ACCESSIBILITY AND MORE

Every publisher of OER wants to do the right thing when it comes to producing content that any student can access. But some curriculum will be further along than others. Keep that in mind as you're selecting OER for your course.

Daly recommended looking for OER available in multiple formats, such as [HTML](#), [PDF](#) and [EPUB](#). Choices will provide a "path that is accessible," she noted, which may vary depending on what the student's unique needs are.

PDF is a better format for print uses. But because its margins are fixed, the content may not display well on small screens. If you want your OER content to show up well on mobile devices, explained Daly, go with EPUB, which has a reflowing mechanism.

What about [iBooks](#)? Content in this format must be produced through iBooks Author, which is available free, but

OER EVENT

Nov. 19–21 | Washington, DC
[OpenEd 14](#)

Organized by [Lumen Learning](#) and the [Scholarly Publishing and Academic Resources Coalition](#) (SPARC), this three-day event offers keynotes and sessions on a range of OER topics.

only runs on Mac OS X. Apple has done a decent job of providing [tools](#) that help authors create iBooks that are accessible for the visually impaired. Students without Apple devices will have to download alternative readers.

3 FREE OR CHEAP PDF TOOLS

Barlett likes to keep things simple. That's why she uses PDFs for her OER content and why she's mastered the art of creating and modifying a PDF — which, contrary to what you might think, is an open

standard, not one that belongs solely to its developer, [Adobe](#). Here are her go-to tools:

© [WEB To PDF](#): For creating PDFs from Web pages on the iPad. "Costs a few dollars, but I got it during a free promotion."

© [PDF-XChange Viewer](#): For "whiting out and manipulation and adding comments." It's also Barlett's PDF reader. Upgrading to a Pro version is \$79.50; she said, "I stick with free."

© [PrimoPDF](#): For making smaller PDF segments, Barlett prints her file to a PDF. This freebie includes "some nice functionality for type, size and saving."

2 OER COPYRIGHT LICENSES THAT REALLY MATTER

© [CC BY](#) is the [Creative Commons](#) license that gives you (and others) free rein to copy, remix, transform, add to and distribute the material however you want.

© [CC BY-NC](#) lets other educators "remix, tweak and build upon your work non-commercially."

Said Barlett, "Both of those are the two I see most often on the materials I use." Sure, there are other, more restrictive license options, but this is OER, and "Copyleft," as the experts call it, is totally the theme. **CT**

Dian Schaffhauser is a senior contributing editor for CT.

OER EVENT

The [Community College Consortium for Open Educational Resources](#) hosts monthly webinars on the topic in the spring and fall. Here are the [archives](#) in case you've missed one.