

Open Educational Resources: Current and Future Activities and Prospects For Pueblo, the System, and the State

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What Are Open Educational Resources [OER]?

HB18-1331, Higher Education Open Educational Resources, passed by the Colorado General Assembly and signed by Governor Hickenlooper on 30 April 2018, defined OER here:

(6) "OPEN EDUCATIONAL RESOURCES" MEANS HIGH-QUALITY TEACHING, LEARNING, AND RESEARCH RESOURCES THAT RESIDE IN THE PUBLIC DOMAIN OR HAVE BEEN RELEASED UNDER AN INTELLECTUAL PROPERTY LICENSE THAT PERMITS FREE USE OR REPURPOSING BY OTHERS AND MAY INCLUDE OTHER RESOURCES THAT ARE LEGALLY AVAILABLE AND AVAILABLE TO STUDENTS FOR FREE OR VERY LOW COST. OPEN EDUCATIONAL RESOURCES MAY INCLUDE FULL COURSES, COURSE MATERIALS, MODULES, TEXTBOOKS, FACULTY-CREATED CONTENT, STREAMING VIDEOS, EXAMS, SOFTWARE, AND OTHER TOOLS, MATERIALS, OR TECHNIQUES USED TO SUPPORT ACCESS TO KNOWLEDGE.¹

¹Closed based on the [William and Flora Hewlett Foundation](https://www.williamflora.org/)'s definition: "OER are teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use and re-purposing by others. Open educational resources include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge."

First Answer: Free Textbooks

A basic place to start with this is

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So the term "**OER**" includes **free textbooks**.

Students tend to like this *a lot*, and it changes their behavior in many ways.

Second Answer: “Repurposing by Others”

But notice this also includes

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So “**OER**” also includes resources which can be adapted, mixed with other OER, and then shared back to the global scholarly community.

Faculty tend to like this *a lot*, and it changes their behaviors in many ways.

“Open” vs “Free”

A better word than “open” in **OER** might therefore have been “**free**,” in both of the two common senses of that word in English:

“**free** as in **free beer**” and also “**free** as in **free speech**”

This linguistic issue has been around for a while. You might be familiar with “open-source software,” like **Android**, **Linux**, **Firefox**, **MediaWiki** [the engine that runs **Wikipedia**], **Apache** [the most widely used web server software in the world], *etc.* Such software was originally called “free software,” and even though it is free [as in free beer] it has enormous economic consequences and has made a lot of money for many businesses. *E.g.*, when I worked for IBM Research in the early 00s, my youthful radical background in FLOSS² was a business benefit, not problem.

²FLOSS = “Free/Libre/Open-Source Software” is the best term.

[Micro]Economic Issues for Students

The #RealCollege Survey found³ in 2017 that for university students

- 36% were food insecure in the 30 days before taking the survey,
- 36% were housing insecure in the last year, and
- 9% were homeless at some point in that year.

Students face these economic burdens at the same time that tuition is going up faster than inflation [as the cost of “public” higher ed is more and more born by the individual students].

Then a class a student needs or wants requires an expensive textbook – \$100, \$200, \$300, or even \$400 is not unknown today.

Now ask yourself: if you were a student in debt, [sometimes or often] hungry, and concerned about keeping a roof over your head ... where would your economic priorities be?

³ *Still Hungry and Homeless in College*, Goldrick-Rab, Richardson, Schneider, Hernandez, and Cady, 2018, on the web [here](#).

[Macro]Economic Issues for Students

These individual decisions students make are happening in the context of other financial burdens increasing steeply on students. The result is well known:

total student debt in the U.S. is around \$1.45 trillion.

Some examples in Colorado:

Institution	Avg Debt, 2014 Grads
CSU-Pueblo	\$29,914
MSU, Denver	\$28,468
Colorado College	\$19,756
University of Denver	\$29,050
All private[non-profit] and public 4-years in CO	\$25,064

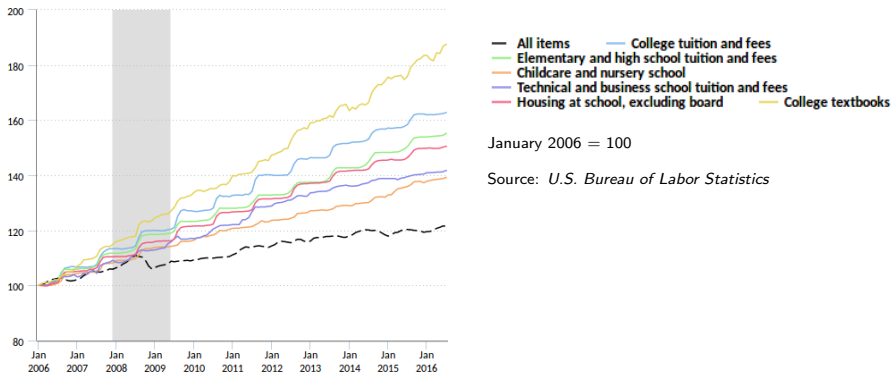
2014 is most recent complete data available

Average debt of 2017 CSU-FC grads was \$26,348

Source: <https://ticas.org/posd/state-state-data-2015#>

Students Pay Many Different Costs...

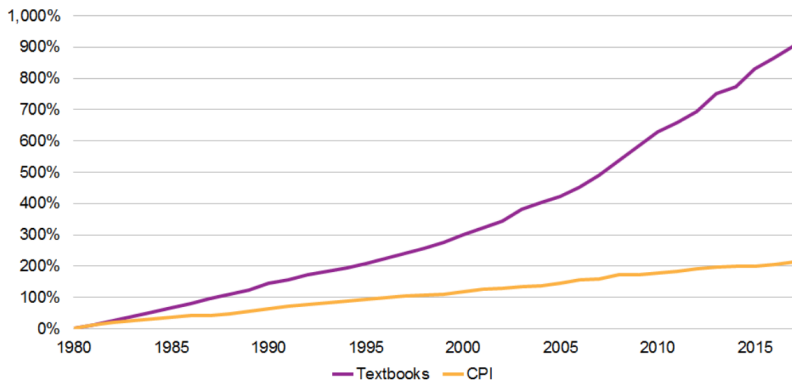
Consumer price indices for tuition and school-related items, not seasonally adjusted, January 2006-July 2016



<https://www.bls.gov/opub/ted/2016/college-tuition-and-fees-increase-63-percent-since-january-2006.htm>

...But the Winner⁴ Is: Textbook Cost

Increase in textbook costs since 1980

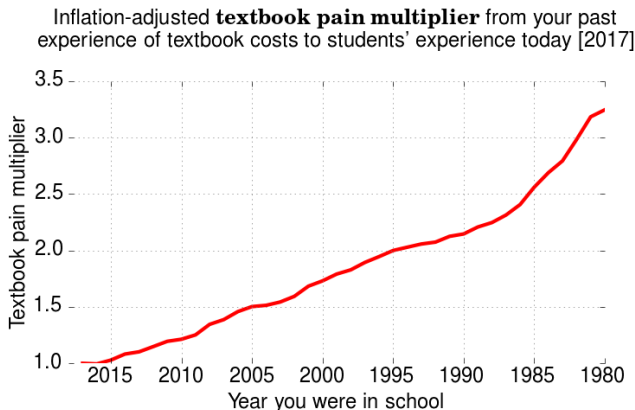


Source: U.S. Bureau of Labor Statistics

⁴in terms of rate of growth, not absolute size

Your Intuition for Textbook Costs is Wrong

One attempt to correct our intuition for these different rates of inflation:



Source: <https://mathematikoi.net/>

But **Why** Do Textbooks Cost So Much?

A broken market mechanism: faculty choose, students pay. Publishers understand this.



Consequences for Students

Studies⁵ have shown that, as a result of these economic realities, students

- make decisions about which courses to take based on the costs of the textbooks;
- take fewer courses because of expensive textbooks;
- do not buy even required textbooks, because of cost, and therefore learn less, do more poorly, and drop out more frequently; and
- take longer to complete degrees because of the obstacle of textbook cost.

A particularly exciting recent study⁶ found that **DFW rates went down by one-third among minority and Pell-eligible students in gateway courses which switched from commercial textbooks to OER.**

⁵ See references in *Report to the Joint Budget Committee and The Education Committees of the General Assembly – Open Educational Resources in Colorado*, Brown-Sica et al., 2017, on the web [here](#).

⁶ *The Impact of Open Educational Resources on Various Student Success Metrics*, Colvard, Watson, and Park, *International Journal of Teaching and Learning in Higher Education* (2018), on the web [here](#).

Scholarly Production Wants to Be Free

Faculty are not used to thinking of the economic consequences of their choices, nor of their work as being in a marketplace⁷.

We are used to signing over our copyrights on research papers to the journal publishers, who in turn make large profits on subscriptions which they in no way pass on to the article authors.

Scholars do tend to keep the copyrights on their monographs and textbooks, although usually tied up in restrictive contracts.

It is as rare as winning the lottery (or getting struck by lightning) that a book will sell enough to make some serious money for the author.

Scholars mostly seek **impact**, which comes when others use a work in new ways – clearly without first asking permission. We **hope** someone else will take our ideas, with attribution!, and do something amazing.

In this sense, scholarly production wants to be **free, as in speech**.

⁷ other than “the marketplace of ideas”

Freedom Includes the Right to Seek a Profit, or Not

If a professor wants to assign an expensive textbook in a class (and has a good reason to do so) or wants to publish a textbook commercially with the hope of writing the runaway bestseller on economic history, then by academic freedom and scholarly tradition, we should not stand in the way.

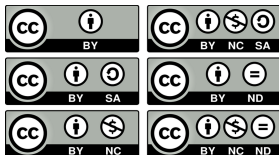
But usually, many faculty will be happy to contribute their textbooks, problem banks, software, and other writings to a global intellectual commons, a *Creative Commons*.

If there were a way to dedicate a creative work to this commons, rather than having it automatically fall into the domain of *all rights reserved* copyrights – as any work of original expression does as soon as it is fixed in a tangible medium⁸ – many scholars would likely do so.

⁸ this is the trigger which causes a copyright to spring into existence: no registration or formalities is actually required.

Creative Commons Licenses

The way to bend copyright law to the purposes of the scholarly life is to release works with a **Creative Commons Licenses**:⁹



Educational resources release with a CC license – well, **not** those two licenses with “ND” – are open to REPURPOSING BY OTHERS, in the words of [HB18-1331](#), and therefore are **Open Educational Resources [OER]**.

OER can be customized, localized, adapted to a faculty member's own way of teaching, unlike [commercial] textbooks under traditional copyright.

Only OER truly respect an instructor's academic freedom!

⁹ see <https://creativecommons.org>

OER Premodern History at CSU-Pueblo

Some faculty at CSU-Pueblo have been creating, adopting, and adapting OER – often without knowing the terminology or about Creative Commons licenses – for a while. For example

- the Chemistry department has used an OpenStax book;
- Dr. Jane Fraser, chair of Engineering, wrote a book **Introduction to Industrial Engineering** and freely shared it on a website she bought <http://www.introtoie.com/>;
- I wrote and freely share on my website <http://poritz.net> the two books **Yet Another Introductory Number Theory Textbook** and **Lies, Damned Lies, or Statistics**.



OER Early Modern History at CSU-Pueblo

In 2017, the Provost's office gave \$10,000 to support OER-promotion min-grants. An ad-hoc committee out of the Center for Teaching and Learning and the Library administered this program, disbursing the funds to around ten individuals or small groups of individuals.

Almost all of these achieved their goals – and also helped position us to make a strong application for the 2018 state grant program [about which more in a moment].

Our Provost also nominated me for a state OER Council in response to a call from the Colorado Department of Higher Education [CDHE], as Meg Brown-Sica was nominated from Ft Collins and Courtney Bruch from Global; we three all were selected and served.

OER In Colorado: 2017 and 2018 [April-December]

The Colorado General Assembly passed SB17-258 in 2017 and it was signed by Governor Hickenlooper on 3 May 2017. That bill created an Open Educational Resources Council to study the use of OER in Colorado's public institutions of higher education and then to make a proposal for a state program to support OER.

The 2017 Council wrote a long report (available [here](#)) which included a detailed proposal that became, with surprisingly few changes, [HB18-1331](#). Beyond giving the definition of OER with which this presentation started, HB18-1331 created a new OER Council empowered to promote the use of OER at public institutions of higher education in Colorado, and funded the activities of this Council with \$660,000 in year one and around \$1million in years two and three.

Meg, Courtney [until the end of 2018, when she left CSU-Global], and I are on the new Council; I am the chair.

OER in Colorado: December 2018

There were 28 applications [out of 31 eligible institutions] for the \$550,00 in state grant funds for year one, with total requests of \$1.3million.

There was a very competitive and difficult decision process [individual council members recused themselves when their institution's application and applications from other institutions in the same system as theirs were discussed] which resulted in awards including

- \$60,000 for Ft Collins
- \$45,000 for Pueblo
- Global did not apply

While these decisions were made in December 2018 and presented to the Colorado Commission on Higher Education [CCHE], as the overseeing authority, the awards are not official until the February 7th CCHE meeting, nor will the funds be disbursed until after that meeting.

Breaking News!

Press release yesterday:



COLORADO
Department of
Higher Education

FOR IMMEDIATE RELEASE

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Colorado Commission on Higher Education approves \$550,000 in OER grant funding

DENVER – Feb. 7, 2019: The Colorado Commission on Higher Education approved 20 proposals that will provide nearly \$550,000 in funding for higher education Open Educational Resources (OER) projects throughout the state.

"I applaud the work of the commission to bolster innovation and save our students money," said Governor Jared Polis. "These grants will no doubt have a huge impact on the future of OER and inspire other higher education institutions in the state to follow suit with creative and impactful solutions."

In its inaugural year, the [Colorado OER Grant Program](#) is awarding funds to several institutions in two different tiers: individual and small group; and faculty- and institutional-level grants. Funded proposals include a systemwide intercampus collaboration and faculty content design in disciplines with high enrollment and expensive textbook costs, ranging from STEM and art history to English language and writing courses. [View the list of awards.](#)

Source: <https://higherred.colorado.gov/Publications/Press/Releases/2019/20190207-OER-Grants.pdf>

OER in Colorado: 2019 $\rightarrow \infty$

The OER Council in 2019 will disburse grant funds and collect data on how they affect student costs and success in Colorado institutions of higher education.

The Council also is organizing a conference – note the date: May 30-31, 2019 – which will have training sessions for OER practitioners, keynote[s] by internationally recognized OER experts, and group meetings of Colorado institutions working in particular areas [e.g.,: free (in both senses) online homework support systems for classes not using a commercial textbook].

We have asked Governor Polis to make a visit to our conference, and it is not out of the question that he might: in his last job, he was one of five authors who put provision in a federal funding bill to create a federal OER grant program.

Aside on the Need for OER Grants

But why does money need to be spent on OER, if they are, after all, **free**? The answer is that while the individual OER are free, it can take a lot of time to re-construct a course around an OER in place of a commercial textbook you used to use¹⁰, and more time to adapt the OER itself to your course, and even more time to create an entire OER from scratch. Since the OER world is competing with all the gee-gaws and doo-dads that commercial publishers provide with their texts (as they, with their other hand, steal your academic freedom), stipends for faculty and staff, or other forms of support which may have a price-tag, can be useful.

One thing to note, however, is that experience in other states has shown that for every dollar spent on a state-level OER program, the aggregate student body in that state saves between \$4 and \$10 – quite an ROI!

¹⁰But maybe no more than it would take to switch to a different commercial text, which you might choose to do or be forced to do by a change of edition.

OER at CSU-Pueblo: 2019 $\rightarrow \infty$

The Pueblo OER committee will support several major projects as well as running a new, campus-specific mini-grant program to support faculty who are excited but not yet involved in OER.

Experience at other institutions in other states shows that it is important to be *proactive* about OER support: rather than only waiting for faculty to come to a meeting or answer a CFP, it helps also to have advocates go to specific faculty with possible OER for their courses and then to provide a lot of support in the incorporation of those free resources into the class.

The CTL at CSU-Pueblo will provide as much of this support as time and resources allow.

One concrete example: one major project supports the creation of an OER for the roughly 1,400 students per year who take courses in our writing program. The commercial textbooks which will be replaced cost \$110. That is a total of \$154,000 of savings, for which we will spend \$15,000 from our state grant funds (plus time of CTL staff): an ROI of 10.3.

Let Us Be Bold

During the VISION2028 process at CSU-Pueblo, we have tried to be **bold**. Because OER serve so many of the VISION2028 *Principles*, have such potential to help our institution's bottom line (as a marketing tool, and by increasing student success and persistence), I propose the following bold goal for our campus:

CSU-Pueblo shall be a default-OER [DOER] campus by 2028

...in the sense that students should expect not ever to pay for the educational resources which are required in their classes here, and instead they should expect customized OER to be used in most classes, with many classes also using OER-based Open Educational Practices. Of course, no one wants to trample on academic freedom, so faculty who wanted to use a commercial text or other non-OER could do so, although we should expect that to be rare and only to happen for clearly articulable reasons.

Questions, Comments, and Contact Info

Questions? Comments?

If any occur to you later, feel free to contact me at

jonathan.poritz@csupueblo.edu .

These slides are available¹¹ at

<http://poritz.net/j/share/OER4BoGFeb2019.pdf> .

¹¹ for reuse under a Creative Commons license, of course!