Open Practices Learning Group Resource

Developed by:

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# Purpose

The intended outcome of this Open Practices learning curriculum is to engage participants in discussions, short readings and mini-exercises to explore basic tools for Open Educational Practices (OEP). This learning community is designed for instructors, project and organizational leaders who are working with instructors who develop and/or implement STEM curricula as well as policy makers and funders who want to learn more about the connections between open science and open education. This Resource provides suggested readings, exercises, and discussion question prompts to facilitate exploration of the following topics:

* The open ecosystem: exploring key elements of OER, OEP, open pedagogy and open science
* Open licenses and how they can be leveraged to enhance students’ experiences in STEM
* Strategies for using open pedagogy in STEM courses: Emphasizing a social justice framework
* Student agency in the STEM classroom
* The transformative potential of Open Science

# Suggested Admin/organization

* Have clear expectations upfront in advertising about the time commitment and the subject.
* We recommend creating a group hypothes.is account to help participants feel comfortable annotating and to promote community and communication within the group.
* We recommend Google Docs for collaborative note taking and either an online forum or listserv for communication.
* To encourage trust and the vulnerability to have difficult conversations, agree not to share/record names in the notes documents.
* Have a volunteer write a summary/reflection of the discussion and/or main points each week to be shared with the group or public through the listserv/forum.

# Resources

* Presentation slides for introducing weekly topics (also included)
* Readings/Exercises, weekly agenda, and discussion questions are below

## Week 1 - The open ecosystem: exploring key elements of OER, OEP, open pedagogy and open science

### Readings/Activities to prepare in advance

* [Open Education, Open Questions](https://er.educause.edu/articles/2017/10/open-education-open-questions) by Catherine Cronin
* Practice using hypothes.is/
  + Go to <https://web.hypothes.is/> Create a hypothes.is account and join the learning community’s annotation group. Hypothes.is works easiest on google chrome. Make sure that you read the ‘get started’ section and download the chrome extension. You can watch this [4 min youtube tutorial](https://www.youtube.com/watch?v=8XeVU7x98w8) if you like (Please note that in this video, Dr. Cangialosi is instructing students to annotate within the public group, and we recommend that you annotate in your private group, not the public group.)
  + Annotate the Cronin reading (try to make at least one new annotation, and one reply to someone else, for practice).

### Agenda:

* Land acknowledgment
* Group Introductions - “The teacher in me honors the teacher in you.”
* Introduction to the open ecosystem and some definitions (Slides 2-9)
* Introduction to hypothes.is
* Discussion: [In the reading](https://er.educause.edu/articles/2017/10/open-education-open-questions), Catherine Cronin quotes Richard Edwards:

"Openness is not the opposite of closed-ness, nor is there simply a continuum between the two. . . . An important question therefore becomes not simply whether education is more or less open, but what forms of openness are worthwhile and for whom; openness alone is not an educational virtue."

* What forms of openness are you most interested in?
* How do you interpret that last phrase for yourself: “openness alone is not an educational virtue”?

### Additional Resources

* [Check, Please! Starter Course](https://www.notion.so/Check-Please-Starter-Course-ae34d043575e42828dc2964437ea4eed)
* [CourseSource Wikipedia in the classroom](https://www.coursesource.org/courses/wikipedia-in-the-science-classroom)
* [ACT UP for evaluating sources](https://crln.acrl.org/index.php/crlnews/article/view/17434/19242) - variation of the CRAAP method
* [Evaluating Research Articles from start to finish - By Ellen R. Girden](https://www.amazon.com/Evaluating-Research-Articles-Start-Finish/dp/1412974461)
* [Calling Bull](https://www.callingbullshit.org/#:~:text=Calling%20bullshit%20is%20a%20performative,treachery%2C%20trickery%2C%20or%20injustice.) course
* [Wikiedu.org](https://wikiedu.org/) - a set of tutorials
* Example of [student created textbook](https://mrgreene09.github.io/computational-neuroscience-textbook/) from Michelle Greene
* [North Carolina State University Delftia project](https://delftia.wordpress.ncsu.edu/projects/annotate-with-hypothes-is/) - guide for hypothes.is annotation

## Week 2 - Diving deeper into open licenses: How exactly do they work and how can they be leveraged to enhance students’ experiences in STEM?

### Readings/Activities to prepare in advance

* [What are OER?](https://keene.instructure.com/courses/877704/pages/what-are-oer)
* Watch the 2.5 min video on the ‘Share your work’ page on the Creative Commons website; scroll down to the [What our Licenses Do](https://creativecommons.org/share-your-work/) Video.
* Review the licenses on the [About CC licenses](https://creativecommons.org/about/cclicenses/) page.
* Read [How to give attribution](https://creativecommons.org/use-remix/attribution/).
* [What are the 5 R’s](https://library.fvtc.edu/CreativeCommons/OERand5Rs)?

### Agenda:

* A review of Open Licenses and the 5-R’s (Slides 10-21)
* **Exercise**: Using any of the following hubs:
  + [OER Commons](https://www.oercommons.org/)
  + [OpenStax](https://openstax.org/)
  + [LibreTexts](https://bio.libretexts.org/)
  + [QUBES OER](https://qubeshub.org/publications/browse)
  + [Merlot](https://www.merlot.org/merlot/viewBookmarkCollection.htm?id=559439)
  + [Open Textbook Library](https://open.umn.edu/opentextbooks/textbooks/798)

find 1-3 *novel* OER sources that you think could be useful for your classes, students, colleagues. ONLY include things you’ve never seen before. List and link these on the group notes document.

* Discussion questions
  + How might you (or someone else), use the resource(s) you’ve located? How easy is it to adapt or modify? Can you envision a way for students to remix/modify/add-to/revise the source as a way of learning?
  + For many practitioners, Open Pedagogy emphasizes students as ‘contributors’ to a knowledge commons, as opposed to ‘consumers’ of knowledge. Can you envision other ways for your students to create new content? What advantages (if any) might this have for student learning?
  + Consider the three examples of student-created OER:
    - [Computational Neuroscience](https://mrgreene09.github.io/computational-neuroscience-textbook/index.html#this-book-is-free-as-in-pizza)
    - [A Students’ Guide to Tropical Marine Biology](https://tropicalmarinebio.pressbooks.com/)
    - [A student reflects on her wikipedia success](https://wikiedu.org/blog/2018/05/10/a-student-reflects-on-her-wikipedia-success/)
    - How else do you imagine ‘students as creators’ of openly licensed content?
  + Which, if any, of these ‘[eight qualities of open pedagogy](https://www.nextthought.com/thoughts/2015/02/ten-qualities-of-open-pedagogy)’ stand out for you?

### Additional Resources

* Rajiv S. Jhangiani, Farhad N. Dastur, Richard Le Grand, Kurt Penner,Kwantlen Polytechnic Univ.
* [As Good or Better than Commercial Textbooks: Students’ Perceptions and Outcomes from Using Open Digital and Open Print Textbooks.](https://ir.lib.uwo.ca/cjsotl_rcacea/vol9/iss1/5/)
* [A guide to Making Open Textbooks with Students](https://press.rebus.community/makingopentextbookswithstudents/). Elizabeth Mays, Editor.
* [Eight qualities of open pedagogy](https://www.nextthought.com/thoughts/2015/02/ten-qualities-of-open-pedagogy)
* [A student reflects on her wikipedia success](https://wikiedu.org/blog/2018/05/10/a-student-reflects-on-her-wikipedia-success/)
* [Domain of One’s Own](https://indieweb.org/A_Domain_of_One%27s_Own)
* [Pressbooks](https://pressbooks.com/) - way to create, customize, and host a single open educational resource or other educational online material.
* [CAST UDL guidelines](https://udlguidelines.cast.org/)
* [ISKME Accessibility Guide](https://qubeshub.org/publications/2235/1)
* Resources identified during OER finding exercise:
* [Python for Everybody](https://open.umn.edu/opentextbooks/textbooks/python-for-everybody-exploring-data-using-python-3) - CC BY-NC-SA
* [iBio Seminars](https://www.oercommons.org/courses/ibioseminars/view): videos about techniques, discoveries, career development. Can imagine using this in class, as assignments, or allowing students to link to in their created OER content.
* [Pressbooks](https://pressbooks.com/) - way to create, customize, and host a single open educational resource or other educational online material.
* [PubPub](https://www.pubpub.org/) has been recommended as an alternative to Pressbooks
* [Our World in Data](https://ourworldindata.org/) - background information and data repository where you can interact with graphs and download data (CC-BY)
* Creative Commons’ list of places to find of [CC-licensed music](https://creativecommons.org/about/program-areas/arts-culture/arts-culture-resources/legalmusicforvideos/)
* Project Budburst - <https://budburst.org/> (can download data and participate in contributing data)
* [iNaturalist](https://www.inaturalist.org/), [GBIF](https://www.gbif.org), and [iDigBIo](https://www.idigbio.org/portal/search). Sources of biological data and media. Users/data providers assign their own CC-licenses for the images/data they provide.
* [Biology LibreTexts](https://bio.libretexts.org/) for mining different participating institutions Biology OER offerings. I am interested in seeing their lecture notes and exercises that students can work on asynchronously.
* <https://www.biointeractive.org> different animations and activities resources.
* [CourseSource](https://www.coursesource.org/) peer-reviewed biology lessons
* [Lumen Learning](https://lumenlearning.com/) - run by David Wiley. Charges small fees for courses (much less than a standard textbook).

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## Week 3 - Strategies for using open pedagogy in STEM courses: Emphasizing a social justice framework

### Readings/Activities to prepare in advance

* Look through the range of examples at this website: [What is Open Pedagogy?/Examples](http://openpedagogy.org/examples/)
* Us hypothes.is to annotate [Framing Open Educational Practices from a Social Justice Perspective](https://jime.open.ac.uk/articles/10.5334/jime.565/), By Maha Bali, Catherine Cronin and Rajiv S. Jhangiani
* [Core 101 Open Pedagogy Project](https://sites.google.com/g.rwu.edu/core-101-open-pedagogy-project/home?authuser=0), By Heather Micelli, Adjunct Professor of General Education Science at Roger Williams University and Johnson & Wales University, Rhode Island

### Agenda:

* Introduction to Open Pedagogy (Slides 22-32)
* Discussion question: Which examples in the [Open Pedagogy notebook](http://openpedagogy.org/examples/) are useful to you in thinking about how you might construct open pedagogy assignments or policies for your courses?
* Contribute to the list of possible open educational practices in the notes doc. Some possibilities include:
* Adapt or remix OERs with your students
* Build OERs with your students
* Non-disposable/renewable assignments
* Teach your students how to edit Wikipedia articles
* Domain of One’s Own
* Engage students in public chats with authors or experts
* Discussion of reading by Bali, et al.: [Framing Open Educational Practices from a Social Justice Perspective](https://jime.open.ac.uk/articles/10.5334/jime.565/): Is the typology of open educational practices presented in this article helpful to you? What do you think are the most important takeaways?
* Consider the [Eight qualities of Open Pedagogy](https://www.nextthought.com/thoughts/2015/02/ten-qualities-of-open-pedagogy)- which of these stand out for you and why?

### Additional Resources

* [Pressbooks](https://pressbooks.com/)
* [Domain of One’s own](https://umw.domains/)
* [Framing Open Educational Practices from a Social Justice Perspective](https://jime.open.ac.uk/articles/10.5334/jime.565/), By Maha Bali, Catherine Cronin and Rajiv S. Jhangiani
* [SCORE-S-JEDI PMN](https://qubeshub.org/publications/2079/1) resources
* [Math and Social Justice: A Collaborative MTBoS Site - Curriculum Resources](https://sites.google.com/site/mathandsocialjustice/curriculum-resources)
* [Just Mathematics Collective](https://www.justmathematicscollective.net/)
* [What really impacts the use of active learning in undergraduate STEM education? Results from a national survey of chemistry, mathematics, and physics instructors](https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0247544) Naneh Apkarian, Charles Henderson , Marilyne Stains, Jeffrey Raker, Estrella Johnson, Melissa Dancy
* [Student generated handbook](https://press.rebus.community/opensem/) for the first year of college
* Lambert, S. R. (2018). [Changing our (Dis)Course: A Distinctive Social Justice Aligned Definition of Open Education. Journal of Learning for Development,](https://jl4d.org/index.php/ejl4d/article/view/290/334) 5(3), 225-244.
* [Check please! Starter Course](https://www.notion.so/Check-Please-Starter-Course-ae34d043575e42828dc2964437ea4eed)
* [Eight qualities of Open Pedagogy](https://www.nextthought.com/thoughts/2015/02/ten-qualities-of-open-pedagogy)
* [Whose Knowledge](https://whoseknowledge.org/)
* [Perusall](https://perusall.com/) and [VoiceThread](https://voicethread.com/) for video annotation

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## Week 4 - Trust and Power in the STEM classroom: A focus on student agency

### Readings/Activities to prepare in advance

* [What does it mean to “own” your education?](https://press.rebus.community/opensem/chapter/what-does-it-mean-to-own-your-education/)  Authored by 1st year students at PSU, Sarah Writz and Riley Page
* [Student spotlight: Matthew Moore, The Open Anthology of Earlier American Literature, 2nd edition](https://press.rebus.community/makingopentextbookswithstudents/chapter/student-spotlight-matthew-moore/) by Matthew Moore, Upper level student at Graceland University
* [What an Open Pedagogy class taught me about myself](https://thechcexplored.wordpress.com/2017/04/26/what-an-open-pedagogy-class-taught-me-about-myself/) by Miranda Dean, upper level film student in a non-majors science course at KSC
* [Ungrading](https://www.insidehighered.com/advice/2017/11/14/significant-learning-benefits-getting-rid-grades-essay) by Susan Blum
* [Ungrading series (in an Organic Chemistry course](https://clarissasorensenunruh.com/2019/02/10/ungrading-a-series-part-1/)) by Clarissa Sorensen-Unruh
* [How to Ungrade](https://www.jessestommel.com/how-to-ungrade/) by Jesse Stommel

### Agenda

* Introduction to OEP in the context of student agency (Slides 33-37)
* Discussion Questions
  + Leaving grading or assessment aside for a moment- What are some advantages that you see for providing students with more agency as learners? How do you give students agency in your courses that you teach right now? Consider course structure, policies, assignments, etc.
  + Do you agree with Susan Blum’s or Jesse Stommel’s arguments for getting rid of grades, or changing the way that we grade currently? Do you think ungrading can improve student learning?
  + What is one thing that you could do differently in a course you are teaching right now, or will be teaching in the future, to provide your students with more agency or control, including, but not limited to, using an alternative grading practice?

### Additional Resources

# [Thoughts on Student Agency](https://karencang.net/teaching/thoughts-on-student-agency/) by K. Cangialosi

# [Promoting Student Agency to Improve Teaching and Learning](https://granite.zoom.us/rec/play/uZd-cumgqjk3TNOWsQSDCvIqW9S_KamsgyYXqaIJnk2yBnIFZAXyYLoWarYKtEFbjQmbvT0j_Pyalri1?continueMode=true) - webinar w/ K. Cangialosi & M. Long

# [Ungrading Resources](https://docs.google.com/document/d/1yKqmxvpRZyVO5oqRQ5ox4ysotRf0PWTl2-qsatgr68Y/edit#)

# [The #Ungrading Virtual book club](https://ungrading.weebly.com/)

# [Carlos Goller podcast interview](https://www.insidehighered.com/advice/2017/11/14/significant-learning-benefits-getting-rid-grades-essay)

# [Teaching in Higher Education podcast](https://teachinginhighered.com/) - Bonni Stachowiak’s Teaching in Higher Ed, [see podcast with Susan Bloom](https://teachinginhighered.com/podcast/ungrading/)

# [DS106](https://ds106.us/) - open online course on digital storytelling that began at the University of Mary Washington and continues as a community of learners across the globe (Karen mentioned with reference to [Jim Groom](https://jimgroom.net/about/))

# [Earth Day Exercise](https://docs.google.com/document/d/11oVmCPzNtOZt9aE8V8Ryrwkm4UFmPfGF6VDW7PeaOA8/edit) from Melanie Lenhan

# [Mastering Grading Slack](https://masterygrading.slack.com/) channel

## Week 5: Exploring the transformative potential of Open Science: Open Science for whom?

### Readings/Activities to prepare in advance

* [Breaking down the walls of scientific secrecy](https://www.cbc.ca/news/health/biomedical-research-open-notebook-science-patent-drugs-pharmaceutical-academic-research-1.5176792)
* [Open Science and OER: Closing the Loop](https://ijoerandbeyond.org/open-science-and-oer-closing-the-loop/)
* [Practicing open science](http://animbehav.cangialosi.kscopen.org/practicing-open-science/)
* [The Center for Open Science](https://www.cos.io/)
* [Practical Guide on Open Science](https://zenodo.org/record/3968116#.YJHX9bVKg2x) (Scroll to page 17 for the FAQ’s)

### Agenda

* Introduction to Open Science (Slides 38-46)
* Discussion questions:
  + What are your concerns about making science open? (Make a list in the shared notes doc of all of the possible pitfalls and problems).
  + What are the benefits of making science, data and publications open? Do they outweigh the costs?
  + The [San Francisco declaration on research assessment](https://sfdora.org/), DORA, recommends that the emphasis be put on scientific content rather than journal label. They state that using the journal impact factor as a measure of research output is flawed in many ways, and argue that explicit value should be placed on research outputs other than articles (like shared data and code). Do you agree with this?
  + Consider the [Rainbow of Open Science practices](https://zenodo.org/record/1147025#.YJH99bVKg2x). At which levels do you feel you could open your own research?
  + Should we be teaching our science students how to do science openly? How? When?

### Additional Resources

* [Open Science MOOC](https://opensciencemooc.eu/)
* <https://figshare.com/>
* <https://www.protocols.io/>
* <http://whyopenresearch.org/>
* (including link to : [Open research is becoming increasingly recognized in promotion and tenure](http://whyopenresearch.org/promotion))
* [Pioneering and implementing Open Science is very challenging](https://www.greco-project.eu/pioneering-and-implementing-open-science-is-very-challenging/#more-2602)
* [Cite Black Women](https://www.citeblackwomencollective.org/)
* [Rainbow of Open Science Practices](https://zenodo.org/record/1147025)
* [#bropenscience is broken science](https://thepsychologist.bps.org.uk/volume-33/november-2020/bropenscience-broken-science)
* [Declaration on Research Assessment](https://sfdora.org/)

## Week 6 - Synthesis and reflection

### Readings/Activities to prepare in advance

No new readings this week, but consider the following questions before the meeting:

* We began our learning community with these questions: ‘What does open mean to you’ or ‘What forms of openness are worthwhile and for whom’? Do you have a different response to these questions now?
* Take a moment to review the [notes from our open practices learning community](#). Of the various pieces that we covered- Finding and using OER, Open Pedagogy/OEP, student agency and ungrading, and the pedagogy of Open Science- which resonated with you most strongly and why?
* Share something that you did to incorporate open practices into your work this semester, or about something that you are planning to do in the near future. If you didn’t or don’t plan to, tell us about that.
* Are there any particular digital tools that you would like to know more about?

### Agenda

* Discussion of questions presented above

### Other Resources

* Other Networks:
  + OE Global/CCCOER - running an Regional Leaders in open education network (RLOE)
  + Institute for Racially Just, Inclusive, and Open STEM (RIOS)