Open Educational Resources at the University at Albany: What the Provost's OER Fellows have learned

OER Initiative at UAlbany

"Provost's OER Fellowship will provide support and funding for individual faculty who are passionate about OER and the movement to increase their availability and use. OER Fellows will work in the coming year to have an impact on increasing awareness, adoption, and use of open educational resources across our campus with a goal of making UAlbany more affordable and accessible to all students."

Our Work

- Evaluating sources of OER in our disciplines

- Adopting OER in our courses

- Educating & encouraging OER in our depts./colleges (esp. gen ed, large enrollment)

- Informing faculty university wide (workshops & recommendations)

- Researching platforms --> institutional, free, fee-based

- Researching OER in the literature --> student learning outcomes, withdrawal rates, course drop rates, cost savings, sustainability models

What is OER?

*Open Educational Resources are teaching and learning **materials that may be used and reused, at low cost or without charge**. OER often have **an open license** (like Creative Commons or GNU) that states specifically how the material may be used, reused, adapted, and shared, or are in the public domain.*
https://textbooks.opensuny.org/information_for_faculty

*Open Educational Resources (OER) are **teaching, learning, and research** resources that **reside in the public domain** or have been released under an intellectual property license that **permits repurposing** by others.*
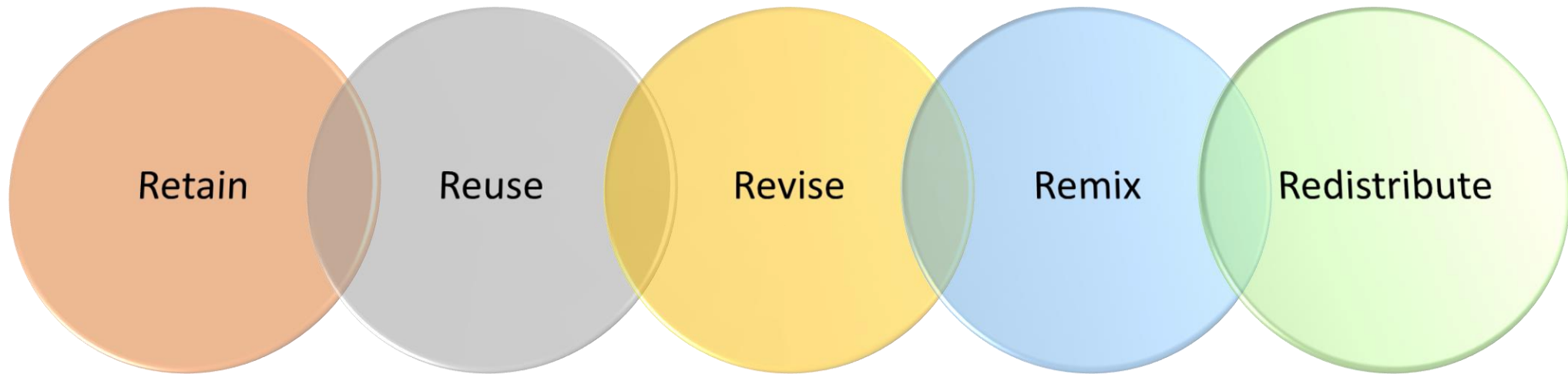http://open-nys.org/

*Open educational resources are materials for teaching or learning that are **either in the public domain or have been released under a license that allows them to be freely used, changed, or shared with others**. OER may include everything from a single video or lesson plan to a complete online course or curriculum and also include the software platforms needed to create, change, and share the materials.*
https://www.edweek.org/ew/articles/2017/03/29/what-is-oer-5-questions-about-open-oer.html

Open Educational Resources:

Instructors, Students, and the Community have the right to:

The 5 Rs of Open Educational Resources were first described by David Wiley and published freely under a Creative Commons Attribution 4.0 license at http://opencontent.org/definition/.
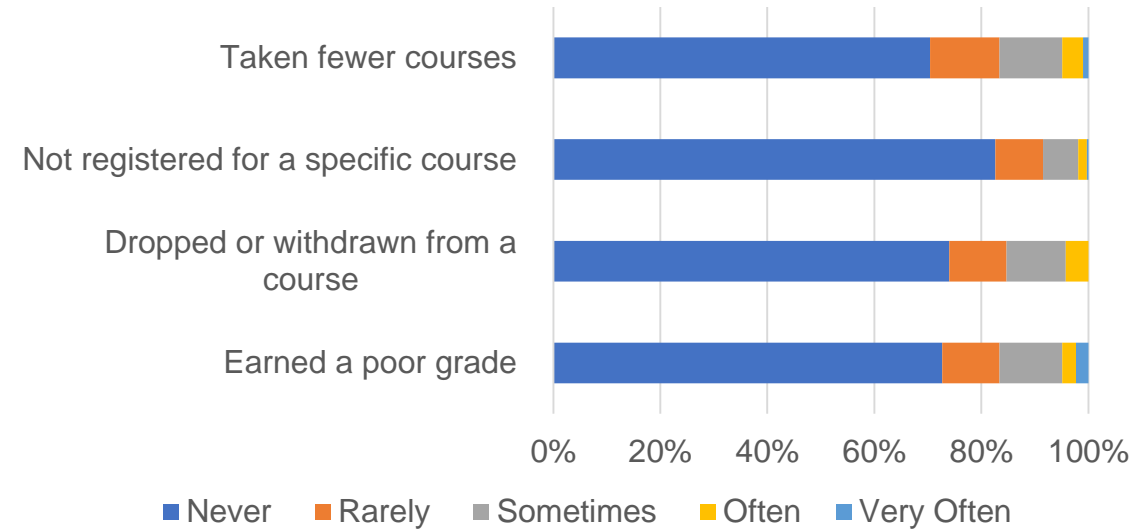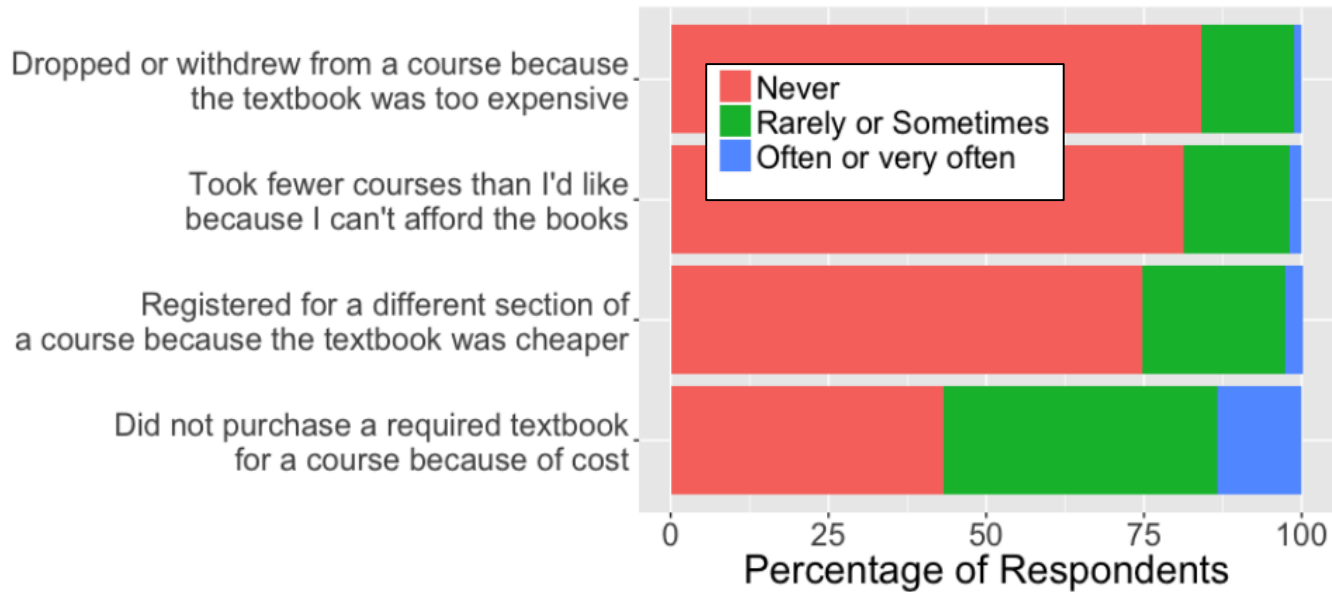
OER: By the Numbers

What research indicates about OER

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https://en.wikipedia.org/wiki/Book

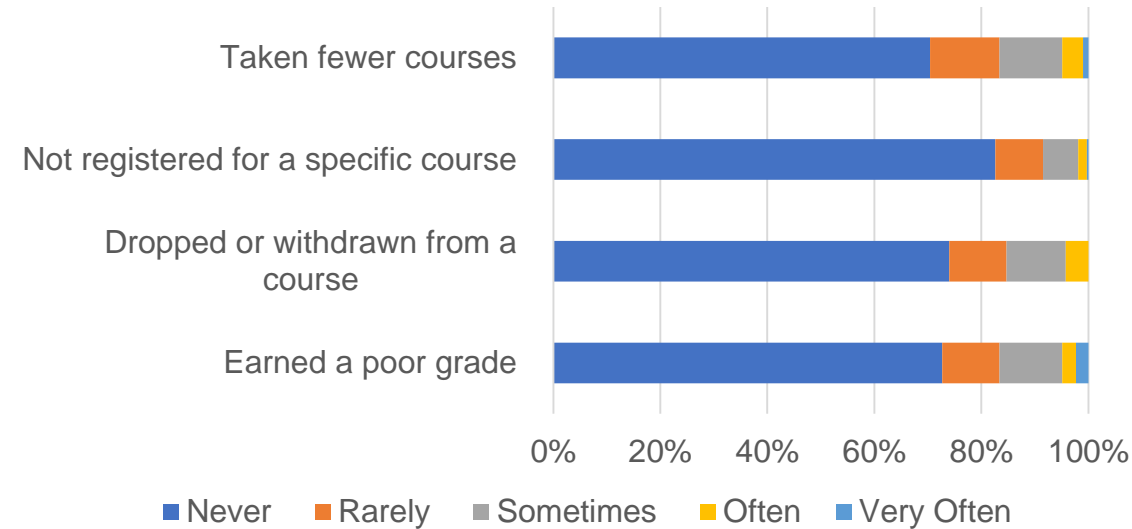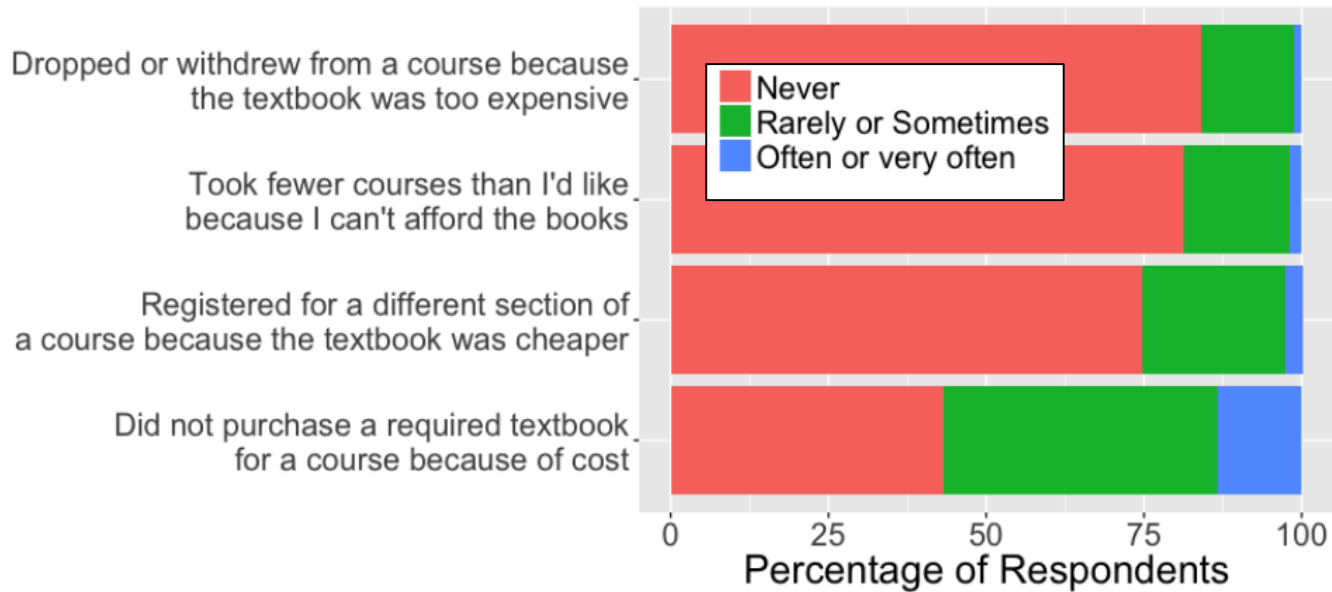# OER: Not just saving students a few bucks!

Hendricks, C.; Reinsberg, S. A.; Rieger, G. W. *Int. Rev. Res. Open Distrib. Learn.* **2017**, *18.*

Adapted from
Jhangiani, R. S.; Jhangiani, S. *Int. Rev. Res. Open Distrib. Learn.* **2017**, *18.*

- High Textbook costs lead to
  - Reduced enrollment
  - Increased drop/withdraw rate
  - Lower grades

OER: Not just saving students a few bucks!

Hendricks, C.; Reinsberg, S. A.; Rieger, G. W. *Int. Rev. Res. Open Distrib. Learn.* **2017**, *18.*

- 1000's of students surveyed among multiple studies (two shown)

- Results consistent across the U.S. and Canada

- Data collected from students across all disciplines, demographics

OER: Not just saving students a few bucks!

Chart 1: Impact of Textbook Costs on Students
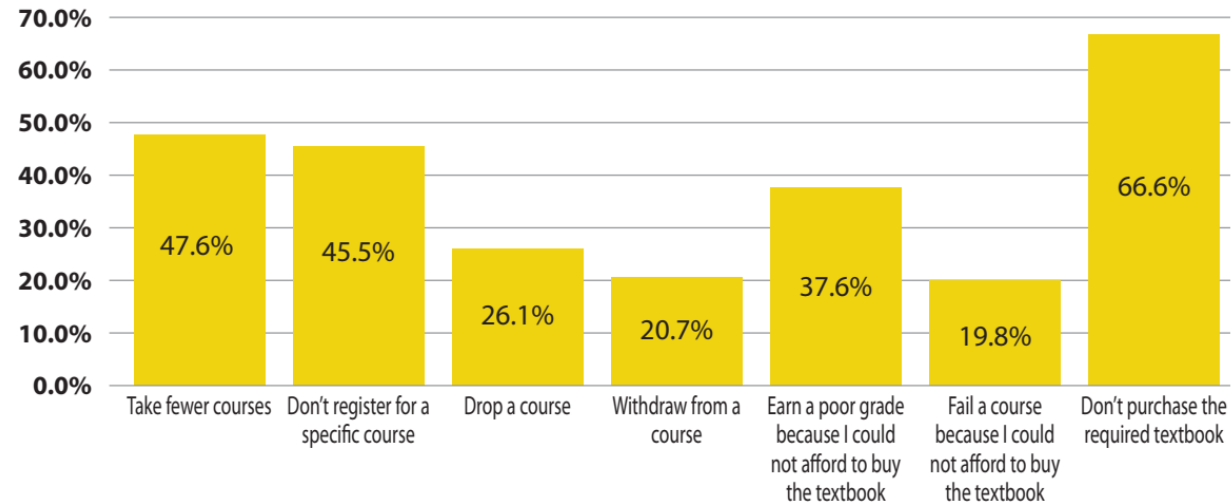
22,000 students from a wide variety of FL universities surveyed

- Reduced enrollment
- Reduced performance
- 2/3 of students did not buy required textbook!

2016 Student Textbook and Course Materials Survey: Results and Findings (October 7, 2016)
https://florida.theorangegrove.org/og/items/3a65c507-2510-42d7-814c-ffdefd394b6c/1/

What About SUNY Albany?
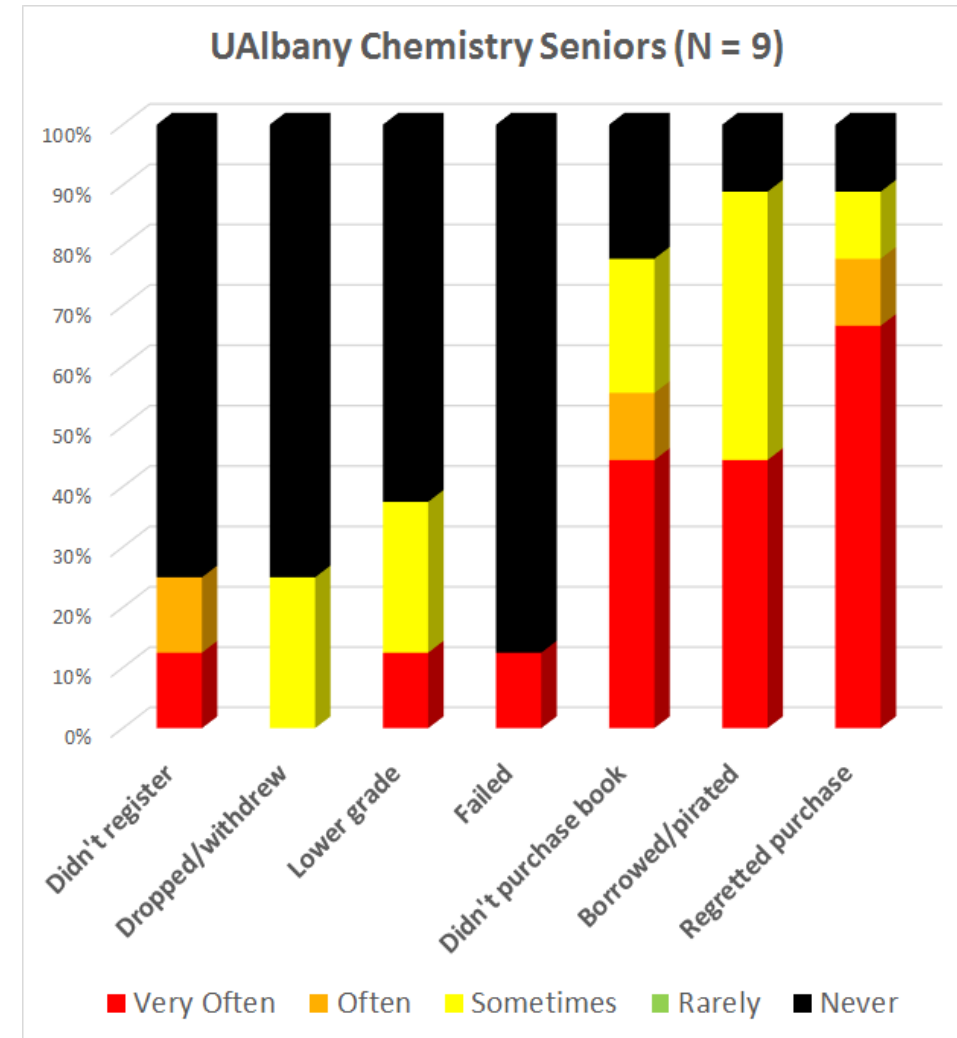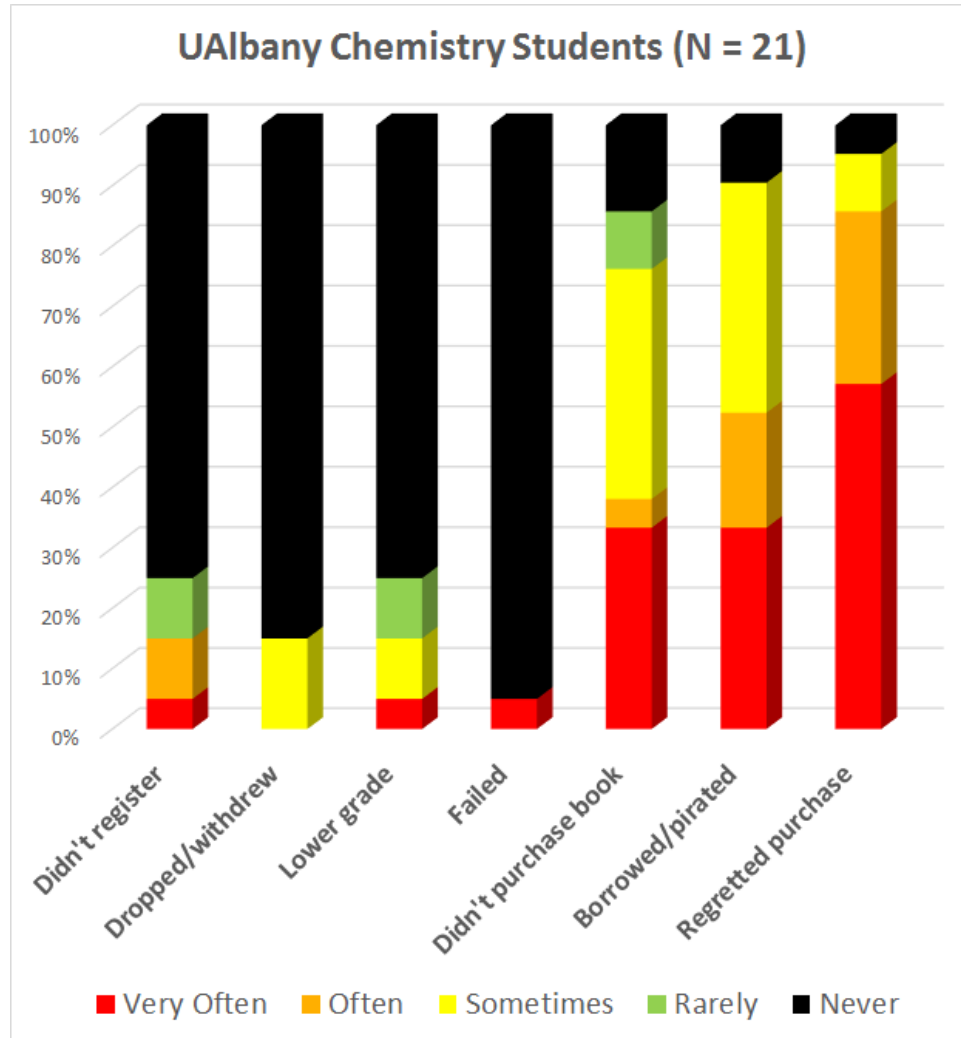
- <u>Informal</u> survey of chemistry students in my research lab and their peers

- Survey queried actions taken (or not taken) specifically due to textbook cost

What About SUNY Albany?

• "After sophomore/junior year, I stopped buying the textbooks because the teachers did not require any... assignments where the textbook was necessary... the slides/notes from class are enough, otherwise Google."

• "Most classes I've taken do not directly relate to the recommended/required book so they seem pretty useless..."

• "They're very expensive. Never buy them."

• "I only purchase books as a last option because they are so expensive."

• "Interlibrary loan is a great help to students. The loan period should be [a] little longer than what it is now."

• <u>Informal</u> survey of chemistry students in my research lab and their colleagues

Can OER Compete?

OER Influence on Grades
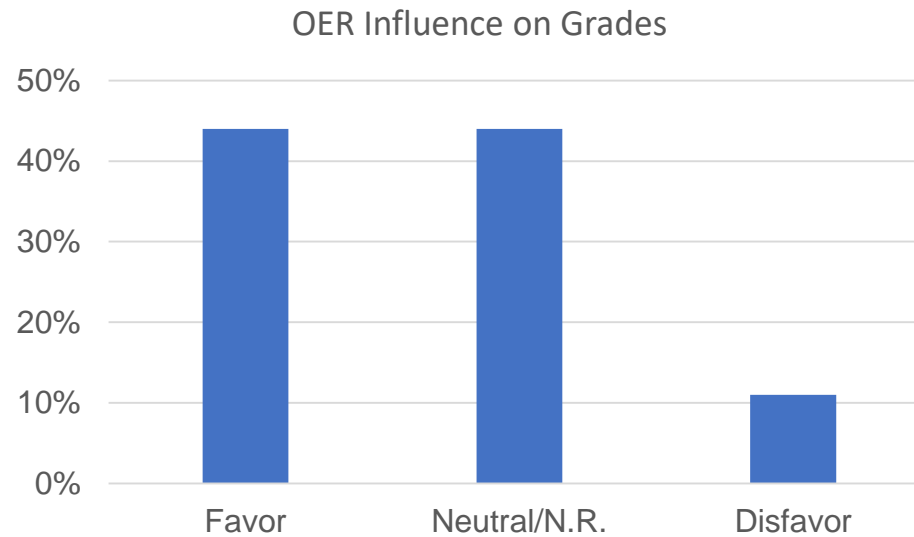
Compiled results from 9 recent studies (>45,000 students surveyed)

• 3 studies show improvement from OER
• 3 studies show no effect of OER on grades
• 1 study shows decrease in grades with OER

Hilton, J. *Ed. Tech. Res. Dev.* **2016**, *64*, 573.

Can OER Outperform?

• OER allows faculty to directly edit course material
- Like 90% of a book but want to change 10% of it? No problem!
- Insert/remove topics as needed
- Integrate current primary literature into the textbook itself

• Inclusion of non-print media (e.g., audio, videos)
- You may already be doing this! That often counts as OER. ☺

• From a research perspective, difficult to link these advantages of OER to student performance outcomes

Can OER Outperform?
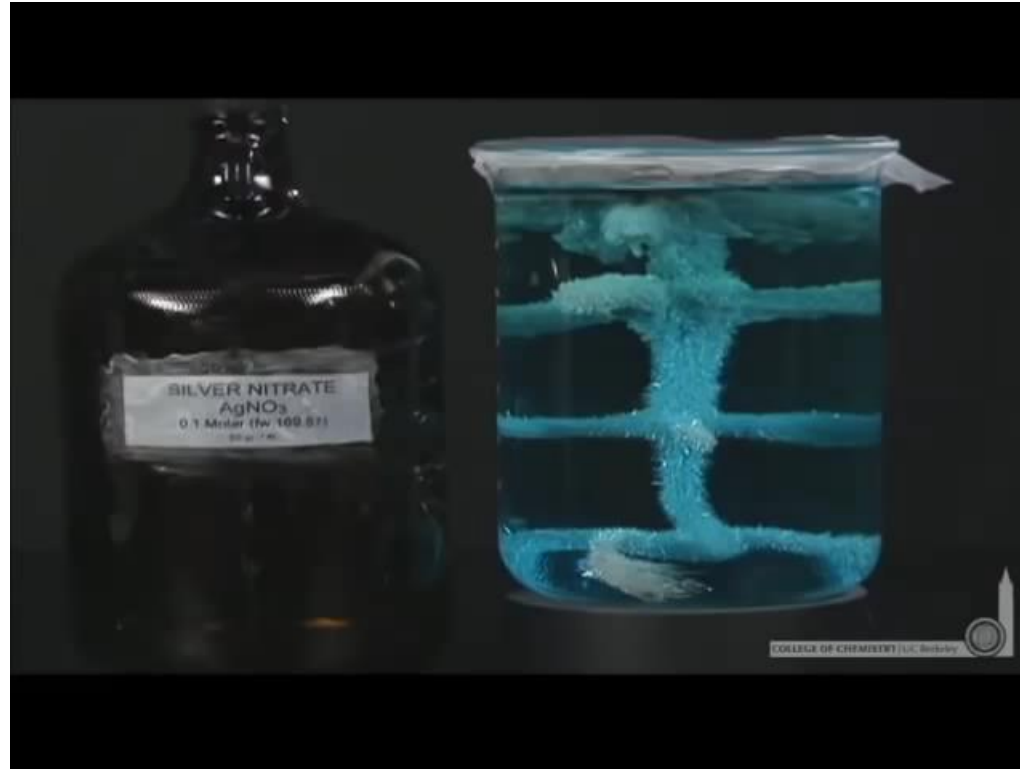
Credit: Berkeley eChem project:
https://www.youtube.com/watch?v=K1GLPA2lkZU&feature=youtu.be

- Demonstration of science concepts using
    - Hazardous reagents
    - Expensive materials
    - Large-scale phenomena (e.g., weather events)

OER and Two Textbooks in Philosophy

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Project 1: OER in 100-level "Critical Thinking"

- Develop OER materials for "Critical Thinking" course (PHI 112)
  - Taught both online and face-to-face for the past 10 years (since 2015 at UAlbany).

- In this course students …
  - Analyze (informally) arguments in terms of premises, conclusion(s), and levels of support
  - Consider others' viewpoints, charitably interpret them, and then assess them
  - Avoid making and learn to spot fallacious reasoning…

- Course incorporates activities such as:
  - Writing an argumentative essay in stages
  - Examining **realistic** cases of reasoning (e.g., YouTube videos of debates and editorials in newspapers) – finding these is the most challenging part of prepping the course
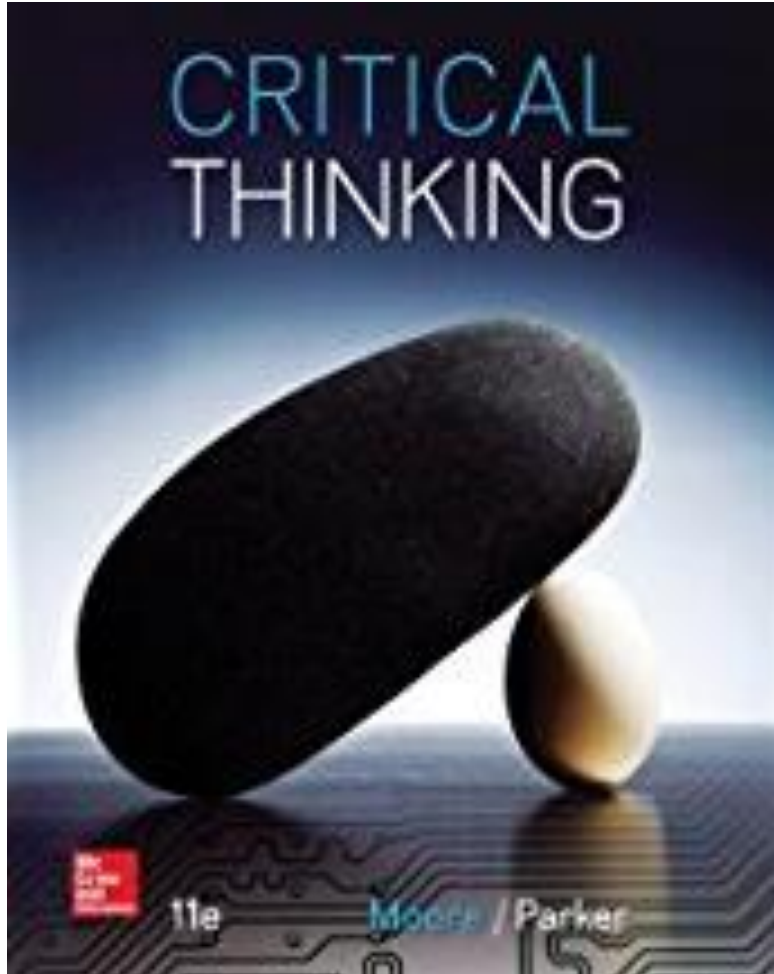
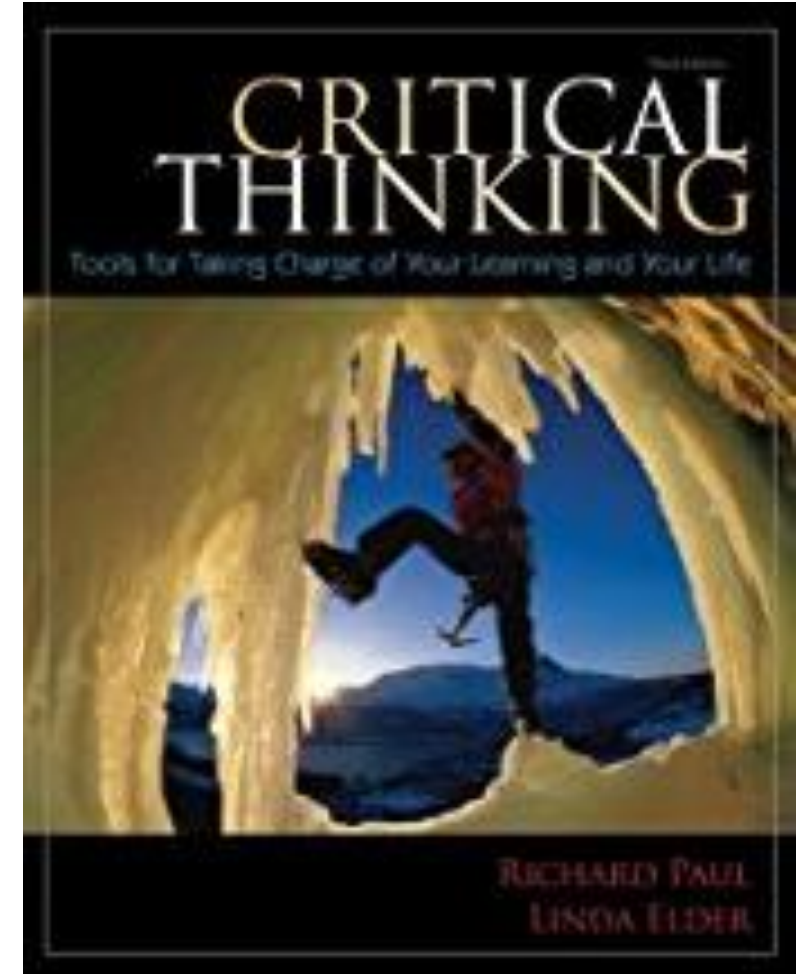# Pricing for Two Critical Thinking Textbooks

$157
11e

$218
12e

$104

One response to this market

Lower-cost, reputable publishers like Oxford University

Vaughn	*Concise Guide to Critical Thinking*	OUP	$49.95
Moore	*Critical Thinking*, 12E	McGraw-Hill	$218.75
Munson	*The Elements of Reasoning*, 7E	Cengage	$116.95

fall…

Email from OUP: "…we invite you to compare the price and quality of our book to other books published for your course."

A brief but thorough introduction to core concepts in critical thinking

Lewis Vaughn's *Concise Guide to Critical Thinking* offers a compact, clear, and economical introduction to critical thinking and argumentative writing. Based on his best-selling text, *The Power of Critical Thinking*, Fifth Edition, this affordable volume is more manageable than larger textbooks yet more substantial than many of the smaller critical thinking handbooks. **Student pricing options start at $24.95.**
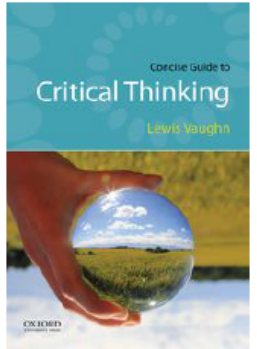
FEATURES

- Six chapters on identifying, evaluating, and devising deductive and inductive arguments
- A chapter on obstacles to critical thinking
- Extensive treatment of scientific reasoning
- A chapter on fallacies and rhetorical persuaders and a substantial chapter on writing argumentative essays
- Numerous exercises

Visit us online to view the table of contents or to request an exam e-copy.

In addition, we invite you to compare the price* and quality of our book to other books published for your course:

Vaughn	*Concise Guide to Critical Thinking*	OUP	$49.95
Moore	*Critical Thinking*, 12E	McGraw-Hill	$218.75
Munson	*The Elements of Reasoning*, 7E	Cengage	$116.95

* List (suggested retail) prices as advertised on publishers' websites as of 10/2017. Prices quoted are for comparable formats. Other formats may be available. Prices subject to change.

Oxford University Press | Higher Education Group | 198 Madison Avenue | New York, NY 10016

For those titles covered by Section 112 of the Higher Education Opportunity Act, additional information can be found at www.oup.com/us/he.

Finding OER Textbooks – Two Options

- The OUP book @ $49 is comparable to the more expensive options

- I was not convinced that there was pedagogical justification for the $49 option and certainly not for the more expensive options.

- I found two OER alternatives (completely free, including problem sets):
  - Cathal Woods (Virginia Wesleyan), *Introduction to Reasoning* https://drive.google.com/drive/folders/0B-JtWIIJlOaFQmlVLWlrWXktbFE

  - Brad Dowden (CSU-Sacramento), *Logical Reasoning* (previously published through Wadsworth but out of copyright)

www.csus.edu/indiv/d/dowdenb/

Prof. Brad Dowden

Philosophy Department
California State University, Sacramento

Prof. Dowden

Spring 2018 classes	Spring 2017 classes	Personal info
Research topics	Deep mysteries	Logical Reasoning

Spring 2018 classes

- Phil. 4, Critical Thinking
- Phil. 160, Deductive Logic II
- Phil. 192D, Space, Time, and Infinity

Spring 2017 classes

Although many scientific studies of decision-making have shown that people tend to sift sources of information looking to reinforce existing views rather than to accept the view that is backed up with the better argument, your book is designed to combat this tendency.

Facing a Decision as a Critical Thinker

Imagine this situation. You are on a four-day backpacking trip in a national wilderness area with your friends Juanita and Emilio. The summer weather's great, the scenery is exotic, and you've been having a good time. Yesterday you drove several hours into the area and parked in the main parking lot. Then you hiked four hours to your present campsite. The three of you carried all your food, water, sleeping bags, and tents.
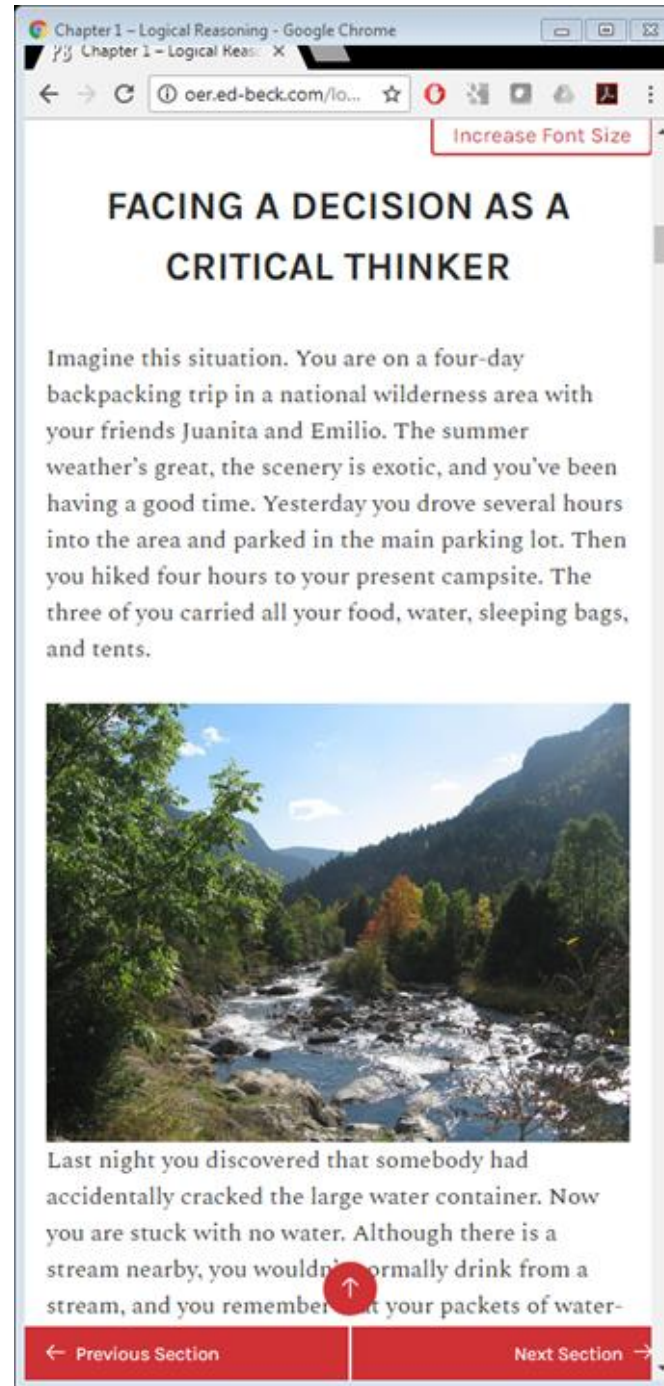
Last night you discovered that somebody had accidentally cracked the large water container. Now you are stuck with no water. Although there is a stream nearby, you wouldn't normally drink from a stream, and you remember that your packets of water-sterilization tablets are in the pocket of your other coat—the one you left at home at the last minute. The three of you are thirsty and have only dehydrated food left, except for four apples. You wish you had bothered to haul in that twelve-pack of Dr. Pepper you decided to leave in the car's trunk.

Remixing this Existing OER Textbook

- I have been using the **PDF** in my course since 2015
  - Downside: not easy to use on mobile device/tablet
  - Downside: not as accessible
  - Downside: author had placed a restrictive license to prevent alterations

- Author relaxed licensing to CC-BY in 2017 edition
  - I am now remixing this book (to be done by Fall 2019)
  - This involves putting it into the Pressbooks format <u>and</u> adding my own material to chapter sections, exercises, case studies, and links to YouTube
  - http://oer.ed-beck.com/logicalreasoning/wp-admin/index.php

oer.ed-beck.com/logicalreasoning/wp-admin/post.php?post=5&action=edit

PB   My Catalog   Logical Reasoning   View Chapter   Hello, madams

Dashboard

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Book Info

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Tools

Settings

LTI Consumers

LTI maps

Collapse menu

Edit Chapter   Add New

EDITING INTERFACE

Screen Options ▼

← Edit Previous (Front Matter)   Edit Next (Chapter) →

Chapter 1

Permalink: http://oer.ed-beck.com/logicalreasoning/chapter/chapter-1/   Edit

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How to Reason Logically

The goal of this book is to improve your logical-reasoning skills. These skills are also called "critical thinking skills." They are a complex weave of abilities that help you get someone's point, generate reasons for your own point, evaluate the reasons given by others, decide what or what not to do, decide what information to accept or reject, explain a complicated idea, apply conscious quality control as you think, and resist propaganda. Your most important critical thinking skill is your skill at making judgments—not snap judgments that occur in the blink of an eye, but those that require careful reasoning.

You are not reasoning logically if, when you want a gorilla suit for a Halloween party, the first thing you do is search for the word "Gorilla" in the telephone book, and the problem here is not that you used a telephone book instead of the Internet.

High-quality reasoning is called *logical reasoning* or *critical thinking*. Logical reasoning skills can be learned and improved. It is not a case of "Either you're naturally good at it or you're not." Rather, nearly everyone is capable of reasoning well, and everyone is capable of improvement. The opposite of logical reasoning is uncritical thinking, examples of which are fuzzy thinking, believing what somebody says simply because they raise their voice, and narrowly thinking about a problem without bringing in the most relevant information.

This first chapter explains what it means to be logical—to reason logically or critically. It demonstrates the usefulness of logical reasoning as a means of making more effective decisions about your own life—decisions about what to believe and decisions about what to do. The chapter begins a systematic program of study of all the major topics regarding logical reasoning. Along the way, the book focuses on developing the following five skills: (1) writing logically, (2) detecting inconsistency and lack of clarity in a group of sentences, (3) spotting issues and arguments, (4) detecting and avoiding fallacies (reasoning errors), and (5) generating and improving arguments and explanations. These skills will be taught here independent of subject matter. This book is not about what you ought to believe about some subject such as politics, religion, sports or business.

Although many scientific studies of decision-making have shown that people tend to sift sources of information looking to reinforce existing views rather than to accept the view that is backed up with the better argument, your book is designed to combat this tendency.

h1

Word count: 6994   Last edited by madams on April 4, 2018 at 6:34 pm

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Status & Visibility   ▲

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☐ Show Title

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📅 Created: Mar 12, 2018 @ 19:56

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Chapter Type   ▲

Standard ▼

How the Pressbooks textbook looks for users...
- Accessible
- Easily viewed on mobile devices

Challenges for Project 1

- No supplementary course materials:
  - High-cost textbooks come with a full suite of supplementary materials, such as automatically-graded quizzes
  - My experience with these packages for Critical Thinking (PHI 112) and Introduction to Logic (PHI 210) is that they are of **mixed quality**

- Hosting – where does the OER book that someone develops/remixes live?
  - Milne Publishing (SUNY OER) will host for free: textbooks.opensuny.org
  - SUNY OER Services will print on an as-needed basis and students will pay cost + small markup in bookstore

Project 2: OER for 17-18th Century Philosophy
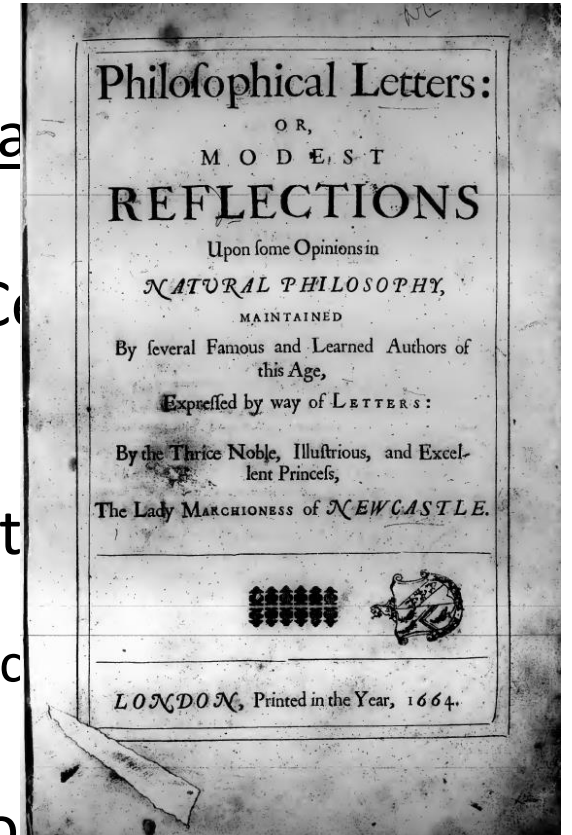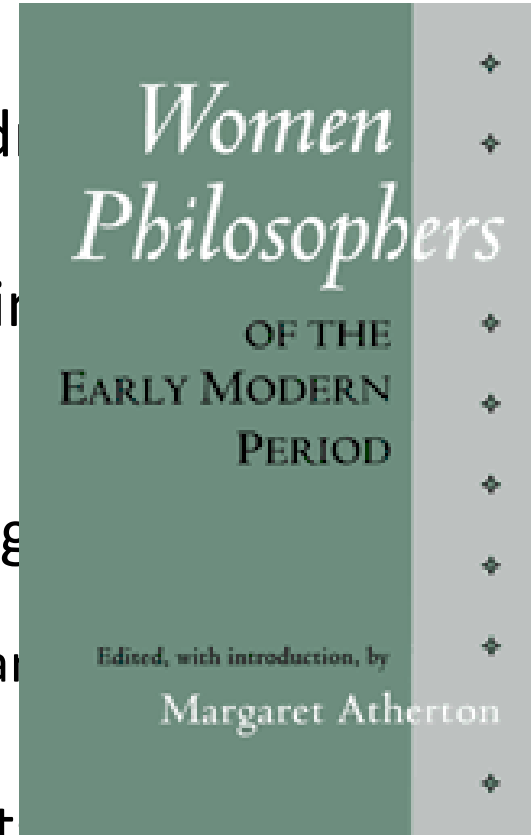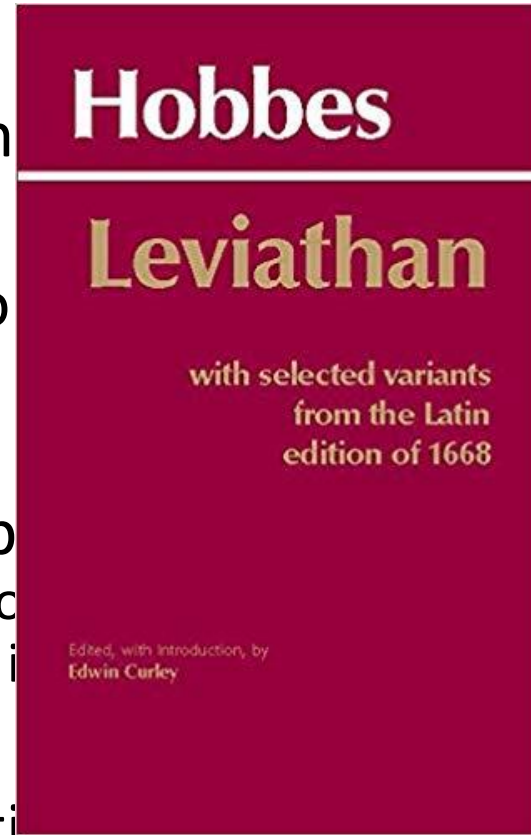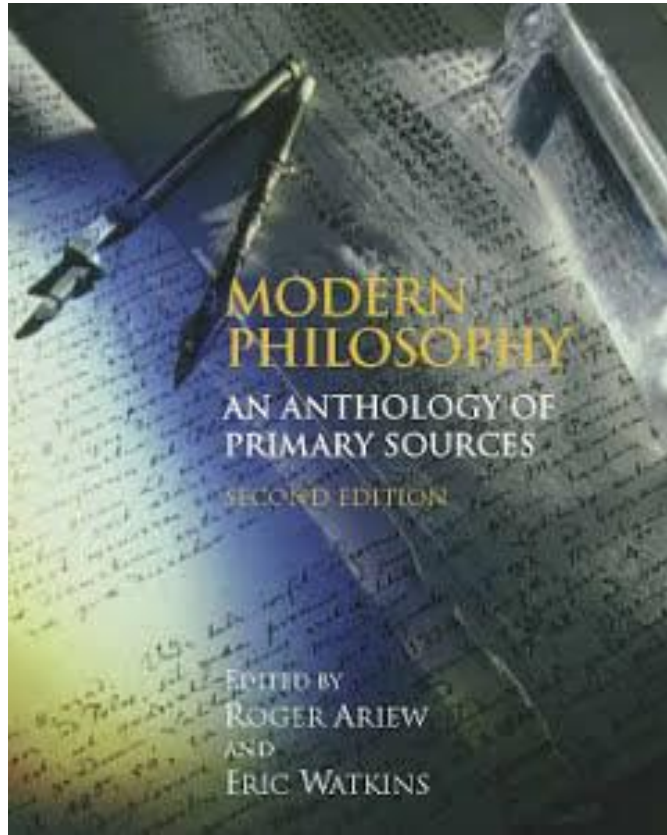
Without OER, existing solution: students purchase 3 textbooks and rely on Blackboard PDFs for the rest

OER in 17-18th Century Philosophy

- An existing OER anthology (*Modern Philosophy*, compiled by Walter Ott of UVa) includes **most** of the key authors I assign.

- Using Pressbooks, I've "remixed" this OER book by adding two authors:
  - 17 chapters of Thomas Hobbes's *Leviathan* (1651)
  - 29 letters from Margaret Cavendish's *Philosophical Letters* (1664)
  - This took 25-30 hours to format the text from public domain

- For next semester, students will purchase an $8 book for the course, but all of the remaining readings will be in this new remixed anthology.
  - A **hard copy** (printed by SUNY OER services) will cost about $18.

Thank you!

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https://commons.wikimedia.org/wiki/File:Valladolid_Rodin_expo_2008_Pensador_03_ni.JPG

Open Research Methods: JupyterHub for teaching computing and statistics

May 14, 2018

Matthew Ingram

Department of Political Science

Rockefeller College of Public Affairs & Policy

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Why OER in research methods courses?

Challenges	OER Solutions
High cost of textbooks - students avoid classes with costly texts, or even if they enroll they try to get by without buying text	**Open texts** with no (or low) cost
High cost of proprietary, commercial software (e.g., SPSS, Stata, SAS, Matlab) - Again, students tend to avoid these courses or try to get by without necessary materials	**Free, open-source software** (e.g., R, Python, Julia)
Dependence on commercial software - students lose access to commercial resources provided while at UAlbany, so future use requires new licenses and additional costs moving forward	**Free, open-source software** (e.g., R, Python, Julia)
Closed nature of proprietary, commercial software	**Free, open-source software** (e.g., R, Python) - Valuable learning resource!

Challenges of using OER?

- User support
  - ANSWER: large, international user groups online; also, package documentation improving, including vignettes and examples

- Identifying a user-friendly interface
  - ANSWER: Multiple interfaces available (integrated development environments, IDEs)
    - R: RStudio
    - Python: Spyder and Anaconda bundle
    - R, Python, and others: Jupyter platform

Jupyter

- Acronym for Julia, Python and R programming languages
- Free, open-source, online platform to "support interactive data science and scientific computing across all programming languages" (from "About Us" page below)
- Main document interface is a "notebook" that combines
- These notebooks enhance transparent, reproducible research practices, and can also be used for assignments, papers, presentations, and publications
- See
  - Jupyter home: http://jupyter.org/
  - Jupyter "About Us": http://jupyter.org/about

JupyterHub

- Server-based version of Jupyter
- Advantages
  - Can set up for multi-user environment and groups (e.g., students in a class)
  - Can set up so that users can sign in with NetID and password
  - Multiple notebook extensions facilitate collaboration, presentations, and teaching
- Focus on one example:
  - **nbgrader** (notebook grader)

nbgrader in JupyterHub

In pilot phase.

Close collaboration with ARCC at UAlbany

https://jupyter.arcc.albany.edu/hub/home

◯ jupyter

Logout

Files | Running | Clusters | Assignments

Select items to perform actions on them.

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Additional Resources

Jupyter

JupyterHub

Nbextensions

nbgrader

Lenore Horowitz

University at Albany
Information Science, iCEHC
lhorowitz@albany.edu

My Story

✓INF108 Programming for Problem Solving

✓Textbook was free (pdf format) for an older version of Python

✓Starting fall 2017 course textbook had to be purchased
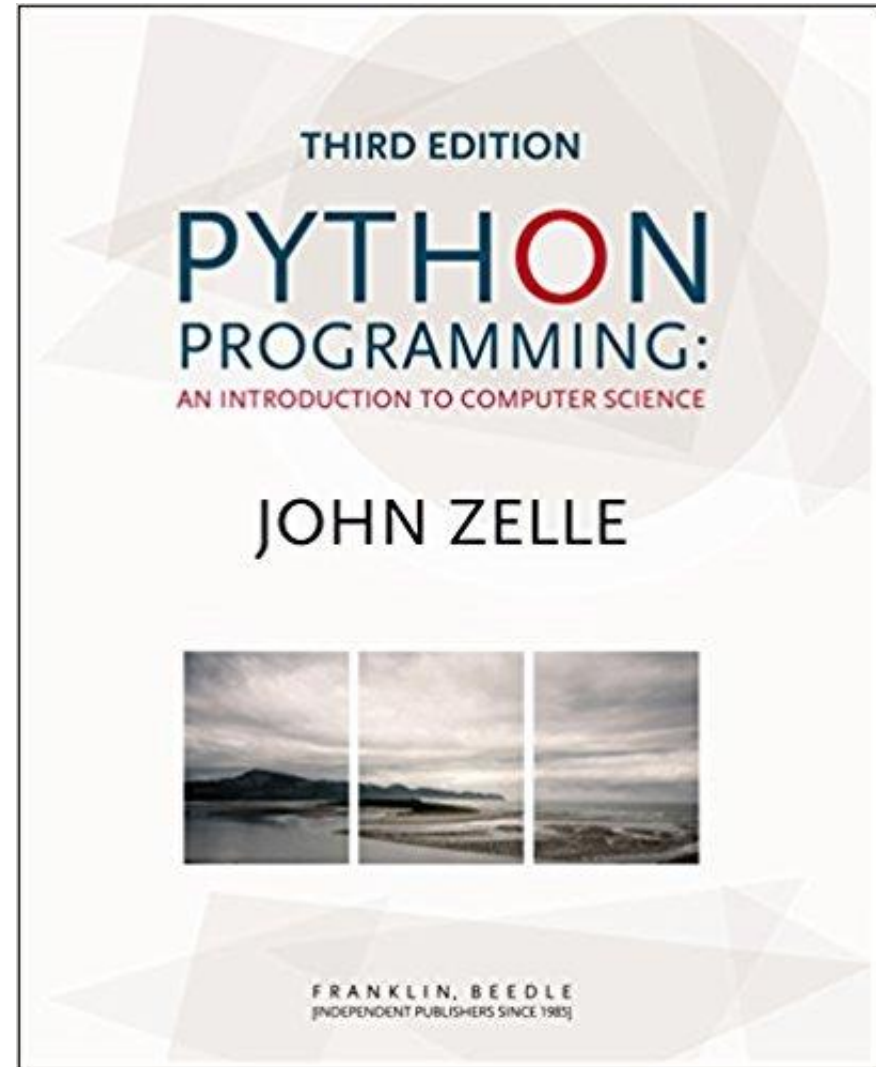
Python Programming: An Introduction to Computer Science, 3rd Ed.

$45.00

My Project

Remix a new OER textbook based on course notes and course materials that reside in the public domain or are openly licensed.

Preface

Much of this OER course material is from the following open publications:

1. Downey, Allen. Think Python: How to Think Like a Computer Scientist, 2nd Edition, Version 2.2.20. Green Tea Press, Needham, Massachusetts, 2015, http://greenteapress.com/wp/think-python-2e/ .

2. 50 Examples for Teaching Python. A.M. Kuchling. Revision 2ef8c29a, 2012, http://fiftyexamples.readthedocs.io/en/latest/intro.html . Accessed 1 January 2018.

3. Downey, Allen, et al. How to Think Like a Computer Scientist: Learning with Python. 2012,

4. Alvarado,Christine, et al. CS for All. Harvey Mudd College, 2013, https://www.cs.hmc.edu/csforall/.

5. Swaroop, C. H. "A Byte of Python." *Enllaç web*, 2003, https://python.swaroopch.com/ .

6. Brown, Wayne. "Lesson 6 – Introduction to Algorithmic Thinking." https://docs.google.com/document/d/1MyFYez2SQvsfq7r1StE2kxZyX.../edit . Accessed 3 January 2018.

7. Severance, Charles Russell, Sue Blumenberg, and Elliott Hauser. "Python for Everybody: Exploring Data in Python 3." (2016). https://www.py4e.com/book .

8. Halterman, R. "Fundamentals of Python Programming." Southern Adventist University (2017). http://python.cs.southern.edu/pythonbook/pythonbook.pdf

9. *Python Software Foundation*. python, https://www.python.org/ . Accessed January 10, 2018.

10. Zelle, John M. "Graphics Module Reference." (2016).

11. Harrington, Andrew N. "Hands-on Python Tutorial (Python 3.1 Version)." Loyola University Chicago. https://anh.cs.luc.edu/python/hands-on/3.1/handsonHtml/index.html#

12. Sarkis , Richard E. *CSC 161 Intro to Programming*. University of Rochester, 2018, http://www.pas.rochester.edu/~rsarkis/csc161/ . Accessed 25 February 2018.

13. Jackson, Cody. *Learning to Program Using Python*. Publisher not identifed, 2014. Accessed 25 February 2018. https://www.ida.liu.se/~732A47/literature/PythonBook.pdf

OER Textbook

- Using the new, remixed textbook this this semester in 3 sections of INF108.

- No cost pdf file and e-book available through Blackboard. Bookstore provided a printed version for $5.50.

- Using current students to engage in reviewing/revising the text.

- Updating (live!) the textbook.

What is Next?

The 5R Permissions of OER

Retain	• Make and own copies
Reuse	• Use in a wide range of ways
Revise	• Adapt, modify, and improve
Remix	• Combine two or more
Redistribute	• Share with others

- Working with SUNY Press to publish the text for next spring.

- Continue revising as necessary.

- Complete instructor supplementary materials for use with the textbook.

- Share the textbook!

Report: Students Prefer Courses that Use Open Educational Resources
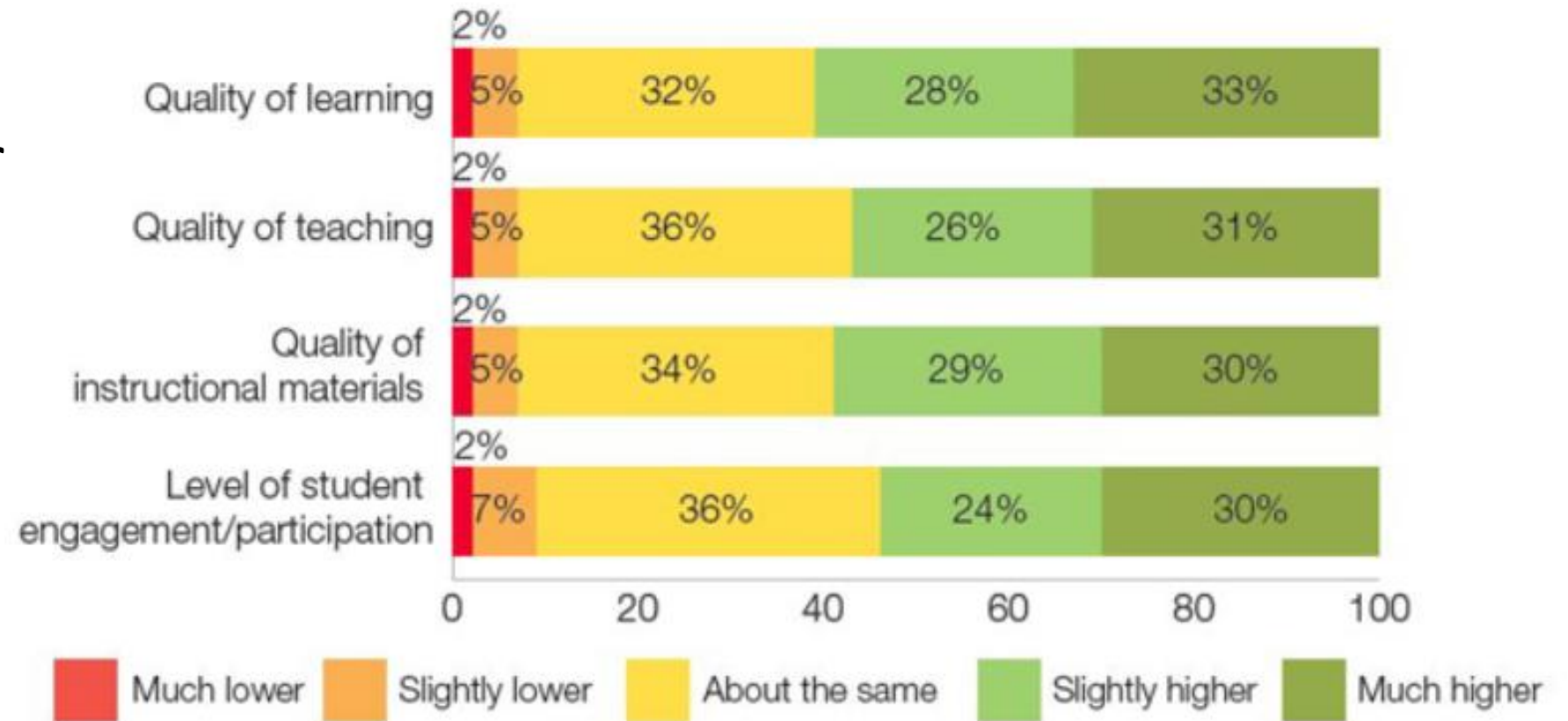
The student OER course experience, compared to typical classes. Source: "Participant Experiences and Financial Impacts: Findings from Year 2 of Achieving the Dream's OER Degree Initiative."

Thank You!

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Matthew Ingram, Political Science   mingram@albany.edu