

**OER: NOT ONLY BENEFITS TO
STUDENTS BUT ALSO BENEFITS TO
INSTITUTIONS**

Mike Cagley

Western Iowa Tech Community College

8 October 2020

IOSS 2020 Conference

OVERVIEW/OUTLINE

- Brief discussion/review of open educational resources (OER) in higher education
 - Faculty, student, and institutional perspectives
- Identify how OER could address issues identified by faculty, students, and institutions
- Specific example: Applied Math at Western Iowa Tech Community College (WITCC)
- Some OER sites and tools

OER AT LEAST TWO DECADES OLD IN THE DIGITAL WORLD

- Massachusetts Institute of Technology (MIT) OpenCourseware since 2001
- <https://ocw.mit.edu/index.htm>
- Note: Influential instructor during my education (comes to mind because of the date for MIT OpenCourseware, 2001) emphasized the need to keep knowledge accessible and bemoaned the way knowledge was becoming almost “jealously guarded” in academia

LACK OF AWARENESS OF AND FAMILIARITY WITH OER IN POSTSECONDARY EDUCATION

- Babson Survey Research Group (2016): <http://www.onlinelearningsurvey.com/reports/openingthetextbook2016.pdf>
- Inside Higher Ed (2016): <https://www.insidehighered.com/news/2016/07/26/study-finds-use-open-educational-resources-rise-introductory-courses>
- Surveys reveal faculty repeatedly express desire to reduce costs to students (roughly 87%) but many (roughly 48%) of faculty find the OER difficult to locate with similar numbers expressing other difficulties in using OER

THE OER TRANSITION (OR LACK OF TRANSITION) IN HIGHER EDUCATION

- Babson Survey Research Group (2017): <https://www.onlinelearningsurvey.com/reports/openingthetextbook2017.pdf>
- Inside Higher Ed (2019): <https://www.insidehighered.com/digital-learning/article/2019/01/09/oer-adoptions-awareness-continue-grow-many-faculty-members-still>
- At most, about 13 percent of instructors have at least used OER in a course, with that number perhaps even inflated.

FURTHER PERSPECTIVE: FACULTY

- Babson Survey Research Group (2018):
<https://www.onlinelearningsurvey.com/reports/freeingthetextbook2018.pdf>
- Data that follow on next four slides are drawn from the 2018 report

Awareness of Open Educational Resources

AWARENESS OF OPEN EDUCATIONAL RESOURCES: 2017-18

Very Aware	12.5%
Aware	18.4%
Somewhat Aware	15.4%
Not Aware	53.6%

AWARENESS OF OPEN EDUCATIONAL RESOURCES: 2014-15 TO 2017-18

	2014-15	2015-16	2016-17	2017-18
Very Aware	5%	7%	9.6%	12.5%
Aware	15%	19%	19.6%	18.4%
Somewhat Aware	14%	16%	15.3%	15.4%
Not Aware	65.9%	58.4%	55.5%	53.6%

Awareness of Licensing of Open Educational Resources

AWARENESS OF LEGAL PERMISSIONS: 2017-18

	Creative Commons	Public Domain	Copyright
Very Aware	21%	30%	44%
Aware	23%	35%	39%
Somewhat Aware	24%	23%	12%
Unaware	32%	11%	5%

AWARENESS OF CREATIVE COMMONS: 2014-15 TO 2017-18

	2014-15	2015-16	2016-17	2017-18
Very Aware	14%	16%	19%	21%
Aware	23%	22%	28%	23%
Somewhat Aware	28%	28%	24%	24%
Unaware	36%	34%	29%	32%

AWARENESS OF OPEN EDUCATIONAL RESOURCES AND CREATIVE COMMONS : 2014-15 TO 2017-18

	2014-15	2015-16	2016-17	2017-18
Very Aware	5%	6%	8%	12%
Aware	12%	16%	17%	16%
Somewhat Aware	10%	12%	12%	11%
Not Aware	74%	66%	63%	61%

Selecting Educational Resources

PROPORTION OF FACULTY REQUIRING PARTICULAR MATERIAL FOR THEIR COURSE

Textbook(s) (Print or Digital)	68.5%
Articles/Case Studies	47.4%
Online Homework System	37.5%
Video/Film	28.4%
Software	19.3%
Other	19.0%
Inclusive Access Subscription	7.0%

PROPORTION OF FACULTY REQUIRING PARTICULAR MATERIAL FOR THEIR COURSE: 2016-17 AND 2017-18

	2017-18	2016-17
Textbook(s) (Print or Digital)	68.5%	68.2%
Articles/Case Studies	47.4%	52.7%
Online Homework System	37.5%	N/A
Video/Film	28.4%	22.4%
Software	19.3%	19.9%
Other	19.0%	20.2%
Inclusive Access Subscription	7.0%	N/A

OVER 90% OF MY STUDENTS HAVE ACCESS TO ALL THE REQUIRED TEXTBOOK(S)**Teach Introductory**

57%

All Faculty

61%

PRIMARY REASON STUDENTS DO NOT HAVE ACCESS TO TEXTBOOK

	All Faculty	Teach Introductory Course
Cost	52%	57%
Student's Don't Think They Need It	38%	34%
Other	9%	8%

THE COST OF COURSE MATERIALS IS A SERIOUS PROBLEM FOR MY STUDENTS

	Teach Introductory Course	All Faculty	Chair Persons
Strongly Agree	42%	32%	41%
Agree	29%	29%	32%
Somewhat Agree	16%	19%	16%

IS THE COST TO THE STUDENT OF REQUIRED COURSE MATERIALS AN ISSUE FOR YOUR DEPARTMENT?

Yes, cost is a critical barrier preventing students from having the required materials	7.9%
Yes, cost is often a barrier preventing students from having the required materials	19.8%
Yes, we have a few instances where cost has been a barrier preventing students from having the required materials	41.0%
Perhaps, there may be instances where cost has been a barrier preventing students from having the required materials	22.3%
No, cost of required materials is not an issue in our department	8.9%

STUDENT TEXTBOOK COST INITIATIVES

	Teach Introductory Course	All Faculty	Chair Persons
Department-level initiative	8%	5%	6%
System-wide initiative	9%	6%	9%
Institutional-level initiative	20%	14%	24%

HOW SATISFIED ARE YOU WITH THE REQUIRED TEXTBOOK(S)

	Teach Introductory Course	All Faculty
Extremely satisfied	29.7%	28.6%
Moderately satisfied	51.7%	52.7%
Slightly satisfied	10.9%	8.2%
Neutral	1.9%	3.1%
Dissatisfied	5.9%	7.4%

SATISFACTION WITH TEXTBOOK

	Very satisfied	Satisfied	Somewhat satisfied	Not satisfied
Included Test Banks	15.2%	27.8%	24.7%	32.3%
Cost to the Student	19.6%	28.2%	31.1%	21.1%
Supplemental Instructor Material	19.3%	31.4%	24.4%	24.9%
Integration with LMS	16.9%	35.3%	23.5%	24.3%
Adaptable/Editable	17.8%	38.9%	21.2%	22.1%
Confidence in Timely Updates	34.1%	39.3%	18.8%	7.7%
Level of Presentation	31.7%	48.8%	15.3%	4.2%
Scope and Coverage of Content	39.1%	43.8%	14.6%	2.5%
Accuracy of Content	43.2%	46.6%	9.4%	0.8%

USE OF TEXTBOOKS

	Teach Introductory Course	All Faculty
Other	9.0%	8.0%
Revised/Edited Material in the Textbook	20.1%	20.0%
Corrected Inaccuracies in the Textbook	22.2%	21.3%
Replaced Content with Material from Other Sources	37.5%	41.4%
Replaced Content with My Own Material	43.0%	44.5%
Taught Topics in a Different Order than Textbook	65.2%	69.8%
Skipped Sections of the Textbook	71.7%	68.0%

MORE NATIONAL DATA

- College Board (2019) calculated an average annual book and supply cost of \$1,460 for commuter students and \$1,240 for on-campus students (p. 10, <https://research.collegeboard.org/pdf/trends-college-pricing-2019-full-report.pdf>)
- By 2015, student annual spending on books and supplies had dropped from 2007-08 highs, with the drop occurring due to student access to free or cheaper online resources, according to National Association of College Stores as reported in PR Newswire (<https://www.prnewswire.com/news-releases/national-association-of-college-stores-study-shows-continued-decline-in-annual-student-spending-on-course-materials-300115123.html>)

THE STUDENT PERSPECTIVE OBSERVED AT THE STATE LEVEL

- IowaWatch.org, maintained by Iowa Center for Public Affairs Journalism, which in turn is affiliated with University of Iowa: <https://www.iowawatch.org/2018/05/08/high-textbook-costs-are-sending-college-students-looking-elsewhere-during-studies/>
- Students state that they feel the cost for textbooks exceeds the value of the books for the course
- Many students believe that they manage to do as well as they would with the textbook or better using just the internet

DEFINING DEMAND FOR OER AT WESTERN IOWA TECH COMMUNITY COLLEGE (WITCC)

- Student demand for:
 - More affordable educational materials for courses
 - More digital tools and sources for education
- Institutional demand for:
 - More customizable instructional resources
 - More institutional control over the instructional resources

INSTITUTIONAL PERSPECTIVE, WITH EMPHASIS ON WITCC

- The following are anecdotal, though, so they may be examples of situations specific to my institution WITCC:
 - Occasional miscommunication on textbooks with the bookstore and/or department
 - Fitting CTE program-specific educational objectives and competencies to classes taught by faculty from Arts and Sciences
 - Cumbersome mass rollouts involving educational content, technology, and services providers

HOW OER HELP ADDRESS ALL OF THE PROBLEMS OUTLINED

- Obviously, for students, if the materials cost nothing further, then those costs disappear for students
- Use of specific OER content available free to students also helps reduce dependence on other free online content that may not be fully consistent with course content
- OER content built into course shells eliminates miscommunication issues on book orders for bookstores and departments
- OER content allows for better customization to career and technical education (CTE) programs
- OER content allows for much more rapid changes to content as necessary within the institution

USING A SPECIFIC EXAMPLE AT WITCC: APPLIED MATH

- MAT-772: Applied Math is the math course required for nearly all CTE programs at WITCC.
- Applied math problems would ideally be based on the math students would use in their career paths, but at WITCC, the course has shifted between departmental control from CTE programs themselves to Department of Arts and Sciences.

CTE PROGRAMS AT WITCC ALONE

- WITCC offers at least 148 CTE awards (Iowa Department of Education, 2017: <https://www.educateiowa.gov/sites/files/ed/documents/Condition%20of%20Community%20Colleges%20Report%202017.pdf>)
- CTE programs present unique challenges
 - Very program-specific applications
 - Advanced math applications in very technical ways
 - Often resistance to notion of need for math (e.g., why do electricians need math?)

CONCRETE EXAMPLES OF ONE BENEFIT ALREADY OBSERVED: THE CHANGE SPEED FACTOR

- Troubleshooting website: <https://sites.google.com/view/troubleshoot772/home>
- Team of instructors communicating via email with me, and I in turn provide fixes that each instructor can individually utilize for temp fixes while I also fix the master shell for next cohort
- In short, the fixes are completed for all active courses within one to two weeks of their discovery and prevented from occurring in future cohorts

COST-BENEFIT

- The benefits have been outlined quite well, but there are costs to be considered, mostly in terms of
 - Growing pains with the initial rollout
 - Time investment by one or more persons willing to handle the changes to the active courses and the master shell
 - More intense time demands for STEM-related courses or technical courses than for humanities related courses, in general, due to the nature of the questions and assignments used in the disciplines
 - Still, at least to some extent, dependent on a publisher of the OER material (though change to another OER textbook does not seem like a time-intensive task compared to the initial design of the course)

OER COMMONS (QUOTE BORROWED FROM ANOTHER PRESENTATION ON OER, CHUCK POLK AND JESS COMSTOCK, WITCC, 2020)

- “We believe that all learners have the right to a high-quality education. We respect educators who bring passion and expertise to impact learning everyday. We believe that educators deserve support to improve their teaching. We have seen that when educators embrace open educational practice, they open themselves, their classes, schools and communities to sharing, connecting and collaborating. We believe that open education provides the conditions for educators to work beyond the barriers of their classrooms, providing access to all, with the freedom to create, design, and remix curriculum and courseware to meet their learners’ specific needs and preferences.” (OER Commons; <https://www.oercommons.org/training>).

EXAMPLES OF OTHER OER COLLECTIONS/INFORMATION

- Kirkwood; <http://guides.kirkwood.edu/opentextbooks>
- Open Education Consortium; <https://www.oecconsortium.org>
- Creative Commons: <https://creativecommons.org/>
- Quiz apps
- Publishing tool apps
- AND Canvas

CANVAS RESOURCES/BENEFITS

- Cartridges on Canvas Creative Commons
- Question writer is fairly good (in my opinion) for the quiz feature in Canvas and at least allows for some degree of variability in problems as well as basic math language
- Multiple resources OR built in-house OR combination

CARTRIDGES: USEFUL FOR GOING OER

- Canvas Creative Commons: Cartridges: https://iowacconline.instructure.com/accounts/1/external_tools/495?launch_type=global_navigation
 - Often provide a complete course shell that can be customized
 - Require, usually, as with the OER textbook, attribution to the original author(s) of the cartridge
 - Have a bit of a delay in updating courses to more recent editions of OER textbooks because cartridges will take 1-2 years, at least in my experience so far, before they are developed for a new edition

SHOW MASTER SHELL

SOME “SMALL?” STUFF

- Button issues
- Changing URL addresses (OpenStax is pretty good about giving folks a heads up on such changes)
- Depending on course and other specifics, developing master shell can vary in terms of time demands