Open Education

Open Educational Resources (OER) are teaching and learning resources (e.g., textbooks, powerpoint slides, activities, assessments, case studies, etc.) that are openly licensed[1] and free to use. These resources can be adopted and used in the classroom as is or modified as needed to best fit the learning outcomes of a course.

Studies of student success have found that on average students in OER courses perform as well as or better than students in commercial textbook courses.[2] In addition, course drop, fail and withdrawal (DFW) rates are significantly lower for open courses compared with commercial textbook courses.2,[3] Research also suggests that the adoption of open resources can help close student equity gaps. Improvements in DFW rates and course grades in open courses are most pronounced for Pell recipients, students of color and part-time students.3 These positive effects likely stem from the cost and availability of these resources; students in open courses all have access to their textbook materials on the first day of class for free (except for the cost of printing if the student needs a printed copy).

These positive effects on student success could also be due to the powerful ways in which instructors can modify open course materials to best fit the needs of their students and align the material with course competencies. Open resources can be remixed and adapted as long as their Creative Commons licensing allows for this modification (i.e., licenses without the 'no derivatives' or 'ND' attribute). These OER can then be modified to better contextualize the course content and provide more inclusive and diverse examples and perspectives, see below.

The power of open:

Contextualize course content to real-world challenges on the job, in the community, etc.

Students are more motivated in their courses when the content is contextualized and relevant to the career they are pursuing and their community. Often, traditional textbooks and course resources provide standard examples and problems, and/or outdated examples that do not resonate with students. Open textbooks can be continuously changed to better contextualize the content and keep the information up to date and relevant.

To learn about a faculty perspective on adopting and adapting OER, see the WTCS Voices interview with Ellen Mathein, a business instructor from Nicolet College.

Update the resource with inclusive and diverse examples

Representation is vital. If students cannot see themselves in the course materials, then that sends the signal that they may not belong in that course and program. Providing diverse and inclusive examples and viewpoints within course materials helps students succeed in their career pathway.

Some OER projects are already trying to diversify open content. For instance, OpenStax from Rice University has created general education open textbooks, and they allow users to provide requests for changes to help diversify these texts (see Palmiotto and Swift 2019). There is also a

focused [project](#) on diversifying the OpenStax Psychology textbook. Instructors could implement a similar type of OER project in their course by providing a way for students to give their input on how to improve the text and make the resource more inclusive.

For more information, see:

- The [Mindset Toolkit course on Belonging](#) which highlights strategies to increase a student's sense of belonging, how this impacts their success, etc.
- [Leveraging Open Educational Resources for Queer Students](#) by Sabia Prescott
- [Hurry Up and Slow Down: Indigenization and OER](#) by Rose Roberts and Heather Ross
- [Looking for Images that Reflect Diversity, Equity and Inclusion: Ask the Community](#) by Heather Blicher, provides a curated list of diverse imagery that could be used to create a more inclusive open textbook

Open pedagogy

Open pedagogy invites students to take part in the creation process of open content to enhance their learning and develop employability skills. Examples of open pedagogy include collaborative projects in which students create or remix an open resource or its ancillary materials (e.g., question banks, PowerPoint slides, website). This approach is powerful in that it can motivate students and incorporates student voice and perspective into the course content.

For more information on open pedagogy and how to incorporate these teaching strategies in your classroom, see the [Open Pedagogy Notebook](#) and David Wiley's post on [What is Open Pedagogy?](#)

OER in WTCS:

Funding:

- Both the [WTCS Perkins Strengthening Career and Technical Education Programs](#) grant and the [Core Industry](#) grant can be leveraged for OER creation and development.
- Our [Wisconsin Student Government](#) (WSG) has included funding for OER in their 2019 and 2020 Legislative Seminar [Position Papers](#). They are asking the Wisconsin legislature to invest $200,000 per year for the creation of open textbooks across the WTCS.

OER projects and resources:

- [OpenRN](#) is a Department of Education funded project that involves all 16 technical colleges and led by Chippewa Valley Technical College in the creation of five open textbooks for nursing with 25 associated virtual reality scenarios.
- Nicolet College offers the first Zero-Textbook Costs Degree (or Z-Degree) in our system. The Z-Degree is a [Criminal Justice Studies](#) Associates of Applied Science and saves students $1,300 in textbook costs.
- [WISC-Online](#) is a non-profit organization based at Fox Valley Technical College that provides open educational programs, objects, videos, tutorials, and games.
- Open resources for technical fields are provided on [Skills Commons](#)

Professional development opportunities:

- Interested in learning more about OER? Enroll in **OER 101**, an introductory course taught by CVTC Director of Library Services, Vince Mussehl. This course has been developed as part of the OpenRN project, but participants do not need to be part of the Health Sciences. This opportunity is open to all WTCS faculty and staff. Sign up on the OpenRN webpage.
- Register for the WTCS OER Symposium (Oct. 29, 2021 with a preconference on Oct. 28).

WTCS OER Network:

The WTCS OER Network has over 90 OER champions from all 16 colleges and the system office. Within the Network, we strive to share strategies and resources to advance the adoption of open resources across the WTCS. To join our network, please contact Hilary Barker.

For questions regarding OER, please contact Hilary Barker, WTCS OER Network Coordinator. hilary.barker@wtcsystem.edu

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[1] The open educational resource has either a creative commons license or is in the public domain.

[2] Clinton & Khan. 2019. Efficacy of open textbook adoption on learning performance and course withdrawal rates: A meta-analysis. Aera Open 5(3): 1-20.

[3] Colvard, Watson & Park. 2018. The impact of Open Educational Resources on various student success metrics. International Journal of Teaching and Learning in Higher Education 30(2): 262-276.

WTCS Voices: Nicolet College Faculty Perspective on OER
A look into starting Open Education: An interview with Ellen Mathein from Nicolet College

Below is an abbreviated transcript of the recorded interview with Ellen Mathein from Nicolet College. This article is a 10-minute read.

HILARY BARKER, HOST: This is WTCS Voices. I am Hilary Barker.

Open educational resources or OER, for short, are materials that are openly licensed and free to use. Research on the adoption of open resources has found that students in an OER course perform as well as or even better than students in a traditional textbook course. These positive effects likely stem from the cost and availability of these resources; students in open courses all have access to their textbook materials on the first day of class for free. Yet, these positive effects on student success could also be due to the powerful ways in which instructors can modify open course materials to best fit the needs of their students and align the material with course competencies.

Today, I am joined by Ellen Mathein. Ellen is a Business Management Instructor at Nicolet College who has been using open education resources in her courses since 2017. Ellen, welcome to WTCS Voices.

ELLEN MATHEIN: Thank you, Dr. Barker.

Getting started in Open Educational Resources (OER)

BARKER: So, to begin, what got you started in open educational resources?

MATHEIN: I was teaching, some evening classes and face to face classes, and we were asking the students to bring a book to class for certain team exercises. I noticed that one of the students was not bringing the book week after week. So, I just mentioned to him after class one time, 'Hey could you maybe bring your book next week. It really makes things better, faster.' And he said, 'Well, I just I can't do that because I can't afford the book.' I talked to him about financial aid, and unfortunately, he was recently released from jail, so he did not qualify for financial aid. We were able to get him some resources from a special scholarship fund that we have. We got him the book, but what it highlighted to me was that there were a lot of students where the book costs were extremely difficult to handle along with tuition and other expenses (e.g., childcare).

I met with our bookstore manager and I had her show me how much the books actually cost in our program. This is of course in addition to tuition, and at that time none of our books were open educational resources. They were all purchased materials and very high-quality purchased materials, but the cost was approximately $3400 for the technical books across the four-semester program. And, I thought to myself, wow that is huge, so what can we do to minimize those costs and still keep the quality? It was great timing because at that time our bookstore

manager was doing a lot of research into open educational resources and brought me some potential options for that very same class that this individual had problems with sourcing the book. She showed me what was available through open educational resources, and so within about a semester, we adopted our first open educational resource in operational management. Our foray into open educational resources has continued for the duration of time since 2017 to the point where now in our program, for all the classes over which we have control in the business side of the house, every one of our books is now an open educational resource. Our students have gone from having an approximately $3,500 book bill to having less than $500, and those are books that some of my colleagues and in general education still have that are purchased materials. So, we've come a long way.

We've heard wonderful things from our students. Such appreciation for not having to outlay that amount of money while still having very high-quality resources. So that's how I first got into open educational resources and it's been a very iterative process. We've been continuing to refine our open resources and push them into an editing tool called [Pressbooks](). We're able to make the books our own; pick out any irrelevant or unnecessary information, condense the books to a more manageable size, and our students have very much appreciated that as well.

Challenges in this work and how to overcome them

BARKER: That's wonderful to hear about this journey. What challenges did you encounter in terms of being able to adopt open resources?

MATHEIN: Well, the first challenge was kind of averted because we had a point-person in our college, the bookstore manager, who really was going out and understanding what OER was all about and helped me source the material through a bunch of different databases that have all of the business OER resources in them. So, if I had had to do this on my own, it would have happened at a much slower pace. So, we kind of averted that challenge.

The second challenge was that there were a small percentage of our students who really just wanted to hold the book and have a paper copy of the book. So, we worked with the bookstore and for those people, who want to have a physical copy of the book and take notes in the margins, the bookstore will actually do a print copy of the Open Educational Resource and put it in a 3-ring binder for approximately $25 to $30 for the student. They can have their hard copies. So, that was a challenge kind of early on, so we make that available to our students now. If they really want to have that paper copy, all they have to do is give the bookstore about 24 hours' notice and they can print a copy for them.

I think the third challenge is something that I'm seeing right now, and that as times change with business being a very ever-changing environment, we need to continually make sure that our OER resources have the most recent information in them. So, something as recent as the coronavirus affecting the supply chain, for instance. We have to embed current events and new things on the horizon (e.g., artificial intelligence, blockchain, etc.). So, it's an evolution process. The updating of the books would have at one time fallen on the shoulders of the publishers and the authors. That now is a challenge that we have. It's not a huge challenge at all. What we've

done is we're trying to really turn this around and have our students source current events and trends so that they can give us fodder for the open educational resource book and make it the most current possible. Then they would actually be a contributing author to the book, which I think is kind of cool because if they can do that, then they know it.

Those have been the three challenges that we've had.

Benefits of OER for students

BARKER: How has this change affected the success for your students in what they're learning, for instance?

MATHEIN: Our students are reading the book, which is just incredible! Because we actually enabled some statistics in our learning management system because we can load our Pressbook right into it with a link. In our learning management system, the student simply clicks on the link and so we can track if they're opening the link and how long their spending on that resource. They are reading the book, and why are they reading the book? Well, I think a couple of things: first of all because we've been able to edit the book into language that they really can relate to and understand, they are more receptive to reading the book. Secondly, we have been able to cull out things that are not germane to our competencies that we are teaching, thereby reducing the size of the book. Let's face it, when you have a 3-inch textbook sitting in front of you, it's kind of ominous. I believe that the students feel that the information in the OER is exceedingly relevant things that they are going to use that afternoon when they go back to their place of work. The feedback has been amazing from the perspective of cost savings, accessibility and also relevancy. And again, they're reading the book, which is phenomenal. I just know that many of them were cutting right to the assessment without reading the book, but they have very few reasons not to read the book anymore.

Lessons learned in starting OER work

BARKER: That's exciting. And to wrap this up, for folks who are maybe considering adopting open resources in their classroom, what advice would you give them?

MATHEIN: I think that the first thing they should do is potentially look for somebody in their organization. They could be the bookstore manager or a librarian who might be able to help in terms of finding the right resources. I would also encourage our colleagues in other schools get ahold of those of us who are using open educational resources because we've done this for a couple of reasons. First of all, for our students, obviously, for accessibility for our students. But we've also done this so that we can share the wealth, if you will, with others. When you and I gave a presentation a couple months ago at a conference; I've had three people now reach out to me and I've granted them access to our books because I don't want them to recreate the wheel. I'd love for them to take what we have done and be able to implement it in a shorter time frame. I would encourage people to reach out colleagues and other schools that are utilizing open educational resources in their programs to see what's out there. There are also some great repository's such as OER Commons. Even if you don't adopt an actual OER textbook,

there are so many other cool resources out there. I would go to OER Comments for case studies, for ideas on assessments, etc. Again, these are people who have developed OER and they're putting it back to the community. I think it kind of completes the circle. They're putting it back into this repository where any instructor can tap into that and use it because it's all licensed under a Creative Commons license.

Adopting a text is a great first step and that's what we did for our first step. But we went to the next step and we put the books into an editing tool, Pressbooks. We can edit them, and we also did something else to make the learning more interactive – we added a product called H5P that you can put into your textbooks to perform concept checks. You can embed matching games or quizzes within the book, for instance. Students actually do some of their formative assessments right in the book, which is another assurance that they are actually reading that book.

Also, if you are developing great stuff, share it because we can all benefit from it, and really make this kind of catapult into a huge endeavor, even outside the confines of our own school.

BARKER: Thank you so much again for sharing your story and talking with us today to help share OER across our system.

MATHEIN: You're welcome. Thanks, Hilary.