

# Online Learning In Higher Education

The Impact on Learning Outcomes & Costs

## FACULTY EXPERIENCES

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Mercy College is a four year, private, non-profit liberal arts college based in New York. Mercy College was founded in 1950. The College has five schools: Business, Education, Health & Natural Sciences, Liberal Arts and Social & Behavioral Sciences, offers more than 90 undergraduate and graduate programs and enrolls more than 8,000 students.

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## OPEN EDUCATIONAL RESOURCES (OER)

The initial motivation to explore open educational resources (OER) goes back at least ten years. The idea then was that college textbooks were becoming extraordinarily expensive. Therefore, this is a social justice issue. Furthermore, the rise of MOOCs and other large program delivery methods lead to the possibility at least; of higher education being available to a much larger population than it typically has met.

There are really two definitions or concepts of open materials. There's a local definition within individual institutions. Based on that definition you make educational materials freely accessible to your students, almost exclusively through some computer-based delivery system (learning management system). In my college, we use a learning management system (LMS) called Blackboard but other colleges have different delivery systems in place. Through that LMS you can upload lectures, PowerPoint presentations, videos, any kind of interactive multimedia.

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However, that OER definition gets a little more complicated because philosophically the holistic idea of OER is to make your material freely accessible to anybody in the world. Usually, that would mean to faculty members at other colleges, who might be looking for just the right module to use within one of their own courses. However, that case becomes a bit more complicated. In such cases you have to be very careful about issues of plagiarism. I don't know if I should say this but faculty are notorious for just jumping into the Internet and grabbing things and not worrying about whether that material is copyright protected or not.

#### **CREATIVE COMMONS (2:24)**

However, the Creative Commons (CC) is a system of licensure that allows you to define how you want your work used. Therefore, your content can be classified; absolutely freely useable, rewritten, revised, or redistributed in many ways even commercially, that's at one end of the CC spectrum. At the other end of the spectrum and what most people use is a category called CC BY. Therefore, if I put up material classified as CC BY it would be expected that material to be distributed freely but it should be labeled as CC BY Howard Miller, which is my name. The idea of open however becomes even more problematic because for example, where did you store all of this material in order that somebody else can find it. Also, how do you convince your university administration that, 'oh yes, we're going to develop this material but we're going to give it away to everybody who wants it'. It's not that I'm opposed to that, but I suspect that these are the things that have to be carefully thought about before entering into the wonderful world of open education.

However, it doesn't have to be all-or-nothing. I'm all in favor of using selective modules if and when that makes sense for students, Furthermore, if you can turn an entire course into open, that's fine you're not going to be condemned (at least not by me) if you decide to make part of your course open in addition to having students purchase some less expensive textual support material to go along with that open content. Therefore, I'm not ready to shut down the publishing houses as yet, although some of my colleagues might be, but I don't believe in that. The publishers have a lot to offer as well, although I think the open movement is pressing the publishers to provide more creative and less expensive alternatives, therefore they (publishers) are also feel the push towards open content. However, publishers don't want to be pushed out of business, so it's something to think about.

#### **CHALLENGES (5:02)**

The issues that faculty face in trying to convert existing courses into open educational-based courses are numerous. Putting aside the need to identify open textbooks and creating interactive materials for the students to use, you have to find faculty who really have a social justice bent and who really want to have more students find success in college. There is never the question of watering down standards or expectations. I don't even want to talk about it and that's ridiculous. Therefore, it is a question of engaging the students more and in order to do that, it takes a lot of work from the faculty.

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At Mercy College, we got involved with a grant project that supported our work on this (OER) and that was sponsored by Lumen Learning. We 'invented as we went along' and I would suspect inventing as you go along is going to be the model for a long time. That along with convincing upper administration that they provide instructional designers who are very multimedia savvy and who know how to handle the equipment and what software is out there. It's not even just about information technology (IT), it's really instructional designers who just totally understand the latest, the best and what's available, preferably using production material (content) that is also open. There is production material out there that is open, but we haven't gone much beyond short video clips and voiceover PowerPoint, however that's a start. If Mercy College can do it, anyone can do it. I'm telling you that I absolutely had no ideas about how these things work in the beginning. We just made this up as went along and we went along using as much support as we could gather. However, with each semester it gets better. Each time we run a course it's better than the time before. If we all live to be a thousand, we're going to have these courses at the level of perfection.

### **COURSE DESIGN (7:53)**

As an academician and a college professor, I have some expertise in my field. I have a couple of areas that I work in. One of those areas is critical reading and another is teacher preparation, especially middle school and high school teacher preparation. As we have many courses that already exist, overtime we have tried to make them less dependent on very expensive textbooks by converting the courses into open-education based courses. We have found that there are lots of problems involved in this process along with lots of challenges. For one thing, teachers are not instructional designers, therefore we needed the help of good instructional designers in order to convert our ideas into something that is; multimedia, visual, auditory, interesting and engaging for the students. Well that's an essential component.

You would think that it would be relatively easy to search the Internet for good open materials to use in a course, but we're not a MOOC. We're not trying to meet the needs of the entire population of the world in a single course. We're trying to meet local needs - the needs of our students and the interest of our college within a course. I'm in a field that has accreditation and answers to the State authorities with licensure for teachers when they graduate. Therefore, we have lots of constraints on what we need to provide to our students. The required content is not always available through an Internet search, so it's a matter of constantly working through a course and creating moments perhaps, or what we call course modules.

For example, we might start by taking a 15-week course and concentrate on one semester, and then concentrate on one or two elements of that course that could be turned into an OER resource for the students. Therefore, when you start working on this process, OER becomes a supplementary support for commercial content that already exists. It takes a very long time to switch that around to where open content material becomes the main support for the course. Eventually if you're lucky and if you stick with it, the textbook goes away. But don't think it goes away overnight; it takes a great deal of work.

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As an example, what's easier for a professor to do? Without criticizing the traditional textbook, let's say we have a terrific textbook written by one or more experts in the specific thing that we're trying to cover. Based on that textbook content we look at our 15-week term and divide readings across those 15 weeks. Then we develop assessments, assignments, and activities surround that textbook. Really that method has worked for a very long time. It isn't a terrible thing, but the only time you really upgrade your course is when the textbook has a new edition. However, by contrast with OER you have to upgrade your course all the time. Let's say you're using something from an Internet source, you may never know from semester to semester whether that link will still be there or whether that source will still be available. If that source is not updated periodically it will grow old, will not be up-to-date, and will be something that you can't use. Therefore, each piece of our OER content, while they look very good now, has been constantly modified and it took us three years to develop that process. This is a big test; a message to administrators at the college level would be to find a way to support your faculty in this process. This is not simply about dumping the expensive textbook. We cannot have the college administration simply say "Oh sure, go ahead and do it. We don't care. You're on your own time. 4:00 in the morning is ok if you want to work on that, that's fine." That can't be the approach we take.

Therefore, the amount of money that students spent for textbooks previously should be absorbed somewhere else and used for either hiring instructional designers or providing release time or some compensation for faculty to do this work. It takes an extraordinary amount of time to work with an open educational course. If you want to collaborate with others within your college or even better with people from across other campuses or other colleges, then the problems are multiplied. That is really the message.

### LEARNING OUTCOMES (13:33)

There's been research on this matter (OER effectiveness) the question is, how much research is enough, because this has been only going on for a few years. However, we've collected enough evidence both hard data and anecdotal to suggest that OER is effective. We know anecdotally that the students prefer this approach; we know anecdotally and from experience that a textbook-driven course doesn't really take off until several weeks into the course because students don't buy the books right away or they don't buy them at all. And so if you have a course laid out with open educational materials, everything is accessible the first day of class and you don't have to spend a lot of time bemoaning the fact that the students didn't do the reading or didn't even buy the textbook. Students are also more willing to listen to a five-minute presentation before they come to class and maybe do a short activity or exercise that they bring to class, which then becomes the starting point for the lesson for that class. We have enough evidence to show that's true.

However, I'm not crazy about outcome data that's based only on course grades. It's hard to trust grades on courses because we know there's a wide variability on how things are graded, however by using that data we do see that comparative to classes that are not run using an OER model, the performance is higher. We have had a lot of success with Math and Algebra 1 classes which every one of our undergraduate students take. Our entire program was adapted for the use of open educational materials. The Math faculty is thrilled to death with the results.

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Not only are the scores higher but; attendances is higher, the level of passing a course is higher, and the level of preparation for Algebra 2 is higher. Those courses are primarily flipped, but some of the professors also teach it in a computer lab, although those labs are hard to come by. Some faculty have students watch the material at home and then bring their findings into the class and other faculty actually run videos in class, however that depends on the equipment available and the classroom set up.

Regarding improved access? In this regards I'm always the skeptic. Some of the OER research suggests that at least at this point, people who are taking advantage of large open access courses MOOCs are actually middle class, upper middle class, and not the folks that we were traditionally hoping to reach. While in certain parts of Asia and Africa the MOOC movement is spreading however that's not enough because as you know their needs to be infrastructure. If someone is living in a region without electricity and the Internet, having internet accessible open courses is not going to do it. So there's a lot of work to be done and it's going to take time, money and effort.

I still feel like OER is in its infancy and I don't consider myself an expert by any means. Success is going to be within the hands of some kind of connection between academic people like myself and instructional designers. Instructional designers know how to take the thoughts and ideas from the academic side and turn them into something that is more accessible for young students, especially short videos as all of this has to be short. Our students today are used to quickly accessing information and I'm sure most people understand that most textbooks are bloated. Textbooks are overloaded in order to come up with 300, 400, 500 pages. In fact they could be just 50 pages. I see the open educational classroom as a means to convert the 500-page textbook into the 50-pages of essentials. The professor is still there and it's not like we go home and take a nap. We're still there, however our job can then be through an online course or direct communications with the students on an individual basis.

If you're going to design a course with OER you start with your learning outcomes and then you design your materials around those. You either design it yourself, with your collaborators or together with somebody who has expertise and who has already produced materials that you can use. If you do it like your students do and rely only on Wikipedia to be your course content, the chances are the quality won't be there. If you don't carefully vet the materials that you use, as you did when you worked through your doctoral dissertation, you won't find that you have high quality materials. But again, this content needs to be constantly updated, upgraded and that work is never done. This process is a constant every semester because you need to look at all your modules, make sure the ones you really like a lot are still working and the ones that you're not crazy about you need to upgrade. I would say it takes at least three years to switch a course from textbook dependent to more (not completely) open and gradually approaching completely open.

Furthermore, I have a lot of interaction with my student through online and face-to-face courses. The term 'flipped classroom' where some of the work is done via the Internet or via the website prior to class, is where the class becomes more like a workshop mode and they're actually working on the things that they prepared beforehand. We do know that retention is higher when students are engaged.

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There's enough initial research to show that when students are engaged, as they are in a good open educational course, retention is higher and persistence to graduation is higher. Furthermore, we know very well that a lot of people start college and do not finish. So we would like to get more people in and to get more people all the way through... this is the ultimate goal.

## LINKS

Mercy College:

<https://www.mercy.edu/>

7 Things You Need To Know About MOOCs II (Educause):

<https://net.educause.edu/ir/library/pdf/ELI7097.pdf>

Things About Flipped Classroom (Educause):

<http://goo.gl/yIOZYP>

7 Things about Open Educational Resources:

<https://net.educause.edu/ir/library/pdf/ELI7061.pdf>

7 Things About Educational Design:

<https://net.educause.edu/ir/library/pdf/ELI7087.pdf>

The Learning Management System Evolution:

<http://www.educause.edu/library/resources/learning-management-system-evolution>

Blackboard:

[www.blackboard.com](http://www.blackboard.com)

Creative Commons:

<http://creativecommons.org/>

CC BY:

<https://creativecommons.org/licenses/by/3.0/>

Lumen Learning:

<http://lumenlearning.com/>

Open Educational Resources In U.S. Higher Education:

<http://www.onlinelearningsurvey.com/reports/openingthecurriculum2014.pdf>

2015 Grade Level: Tracking Online Education in the United States

<http://www.onlinelearningsurvey.com/reports/gradelevel.pdf>

## FURTHER INFORMATION:

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