



A MOOC with a Mission

Interview by Megan Schmidt, editor

Four in 10 high school graduates are required to take remedial coursework when they begin college, according to [Complete College America](#) (CCA)—a Washington-based nonprofit aimed at increasing college completion.

The cost of being underprepared is high for students and universities. CCA estimates that states and students spend more than \$3 billion on remedial courses every year.

Remedial classes are not credited, add time toward earning a degree and have been found to increase students' likelihood of [dropping out of college](#). Could massive open online courses (MOOC), one of the latest innovations in 21st century education, remedy this problem? The University of Wisconsin (UW)—La Crosse is determined to find out.

With support from a grant from the Bill and Melinda Gates Foundation, the university is offering a [free, widely available open online math course](#) aligned to UW system requirements that it hopes will reduce the need for students to take remedial coursework when they start college. The pilot MOOC, which was aligned with the UW system's placement exam, was offered in the summer of 2012 to 38 students. At the end of the course, a placement exam showed [all but one student](#) was ready to enter college level math and science courses. Currently, [1,909 students from around the world](#) are enrolled in the seven-week course that's underway. Data collected from these experiences will be used to continually improve MOOCs and learn which students may benefit most from them.

Robert Hoar, a math professor at UW-La Crosse, the associate vice chancellor for academic affairs and the director of the UW System's Institute for Innovation in Undergraduate Research and Learning, spoke to the *ASQ Higher Education Brief* about the role of MOOCs in academia.

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Higher Education Brief: *What does it take to offer a good MOOC?*

The key is having the right people involved. The team that came together to build and deliver our MOOC is the primary reason we are seeing success. The technology that drives a MOOC is important, but without the right team to select the content, develop the learning tools, set up the learning environment, provide instruction and support student learning, success is unlikely.

Higher Education Brief: *What are your key takeaways from the initial MOOCs?*

Maggie McHugh in our mathematics department was the instructor for the first MOOC that was offered within the UW system. This project was a new adventure for the people involved, the university and the system. The project was massive and, as a result, there are many aspects of the course that could be discussed. In short, we learned a great deal, we believe that a large number of students learned some or all of what we intended to teach, and we plan to do it again.

ASQ Higher Education Brief: *What are the benefits of MOOCs?*

Our MOOC is centered on college readiness in mathematics. For students planning to go to college—specifically those in high school or those considering a return to college—this free offering provides them with a high-quality course that is designed to prepare them for college-level math and science courses. It is a professor-designed course.

Higher Education Brief: *What do you think are the biggest challenges of the MOOC format?*

There is no one-size-suits-all approach to teaching and learning. Depending on your needs and preferences, and depending on the learning outcome, a MOOC may or may not be appropriate. We conducted a pilot that indicated learning outcomes could be achieved in an online environment, but the student volume was small and a good level of student-to-

instructor interaction was maintained. In the MOOC, we attempted to allow for as much student-to-instructor interaction as possible, and even though our numbers were large, we were able to meet the needs of our class. The costs associated with maintaining this level of support will be a challenge.

Higher Education Brief: *What worries you about MOOCs?*

The hype can be a concern. We believe that MOOCs will be a useful addition to our toolbox to support teaching and learning along with traditional courses, small online courses, laboratories and independent study. For the future, it is not yet clear if MOOCs will be a major tool or a specialty tool.

Higher Education Brief: *Do you think MOOCs and technology of this kind have a place in higher education?*

Yes. Our success would indicate that it has a place.

Higher Education Brief: *How much learning is going on in MOOCs?*

That will vary. Without formal admissions processes in place (currently due to the open spirit of a MOOC), it is difficult to advance everyone to the same place because they will likely enter with a variety of skill levels and with varying amounts of time to devote. A student that completes a well-designed MOOC will achieve a predefined set of learning outcomes, but it is not reasonable to assume that everyone can finish a MOOC.

Higher Education Brief: *How would you suggest someone get the most out of a MOOC?*

You can get something out of a MOOC if you simply sign up and review the material. To get the most out of a MOOC, however, students should treat it like a traditional class—put in the time, work at it and get help when you need it. This requires time and a great deal of self-motivation, so it's encouraged to choose a MOOC that covers a topic that you want to devote time to learn about.

Higher Education Brief: *What's the standard for measuring learning in a MOOC? Do you think it is sufficient?*

The standards, in general, will vary by topic and discipline, similar to how standards vary among courses on any campus. Our MOOC is aligned with the placement exam that has been in place for years. Our goal is to help students prepare to meet the existing standards. In this sense, the measure of learning is sufficient.

Higher Education Brief: *Do the same guidelines and standards for traditional university courses apply to MOOCs?*

It depends. To gain college credit, students must show they have earned the knowledge or experiences that the credit implies. The way in which this gain is measured may be different in a MOOC when compared to a traditional class—it may involve independent assessment, for example. This sort of after-the-fact prior learning assessment has been in place for years at many institutions. Advanced Placement (AP) courses are but one example. In an AP course in a high school setting, the student seeks to achieve a pre-defined set of learning outcomes. A nationally normed exam is used to assess each student, and many colleges and universities award credit for sufficiently high scores. Performance on homework, quizzes and other learning activities prepare students for the exam, but the scores on the various activities are not part of the student's AP score.

It may prove to be the case that MOOCs evolve to directly compete with AP courses. Many high school teachers have enrolled in our MOOC to determine if the course material and format could be used to enhance the high school learning experience.

Higher Education Brief: *What are the limits of online learning and MOOCs?*

The faculty will continue to study the MOOC format, and through this study, the limits will be determined. It will likely prove to be a good format for a segment of the population and for a segment of the curriculum. It is too soon to tell how large these two segments will turn out to be.

Higher Education Brief: *According to a [Rutgers University committee](#), only a small percentage of those who enroll in a MOOC actually complete a course. Only 20% of*

students completed Stanford's initial artificial intelligence course. Less than 5% of students passed Massachusetts Institute of Technology's (MIT) circuits and electronics MOOC. What do you think these results mean or point to?

This is evidence that the format does not eliminate the need for the more structured, traditional classroom setting. That is not to imply that MOOCs do not help many others. Those who have passed MOOC courses are not the only ones who gained knowledge. Many who do not pass may still gain from the experience—exposure to the material may help them in their next course or indicate the need to study the material in a different format or at a different level. Perhaps one benefit will be to support the students' ability to self-assess their educational needs.

Higher Education Brief: Do you think MOOCs promote collaboration and interaction in learning or do MOOCs hinder it?

This too will continue to be studied. There are good examples of the large lecture format used in traditional settings, and faculty members have experimented with different techniques for engaging students and facilitating collaboration and interaction. Which of these will translate to the MOOC format remains to be seen, and new techniques will likely be developed.

Higher Education Brief: MOOCs seem to be favorably received by instructors/professors and students—why?

From the student perspective, MOOCs provides low-risk access to new knowledge. There is no penalty for failure, and any lasting gains are free. From the faculty perspective, the format holds the potential to impact many. Working in this low-risk environment is interesting and a new challenge. So far, the vast majority of students and faculty have volunteered to become involved. Self-selected early adopters are likely to enjoy this new experience.

The following UW-La Crosse faculty and staff contributed to this report:

Maggie McHugh, an associate lecturer in the mathematics department at UW-La Crosse and director of the Murphy Learning Center. McHugh is the primary math MOOC instructor and oversees the tutoring staff.

Jennifer Kosiak, an associate professor of mathematics since 2004 who specializes in mathematics education. In 2010, she received the Teacher Educator of the Year Award from the Student Wisconsin Education Association. In 2012, she received the 2012 Regents Teaching Excellence Award from the UW Board of Regents.

Cari Mathwig Ramseier is a member of academic technology services in the university division of IT services at UW La Crosse. She supports the campus-wide learning management system and developed the MOOC course website.