MOOCS (Massively Open Online Courses) and Their Implications for Beginning Faculty

March 22, 2013
Noon to 1:30 pm

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(Unpublished paper sent to all registrants via e-mail. Please do not distribute.)

1. What You Need to Know About MOOC

The Chronicle of Higher Education
February 26, 2013
http://chronicle.com/article/What-You-Need-to-Know-About/133475/
Call it the year of the mega-class.

Colleges and professors have rushed to try a new form of online teaching known as MOOCs—short for "massive open online courses." The courses raise questions about the future of teaching, the value of a degree, and the effect technology will have on how colleges operate. Struggling to make sense of it all? On this page you'll find highlights from *The Chronicle*'s coverage of MOOCs.

What are MOOCs?
MOOCs are classes that are taught online to large numbers of students, with minimal involvement by professors. Typically, students watch short video lectures and complete assignments that are graded either by machines or by other students. That way a lone professor can support a class with hundreds of thousands of participants.

Why all the hype?

Advocates of MOOCs have big ambitions, and that makes some college leaders nervous. They're especially worried about having to compete with free courses from some of the world's most exclusive universities. Of course, we still don't know how much the courses will change the education landscape, and there are plenty of skeptics.

These are like OpenCourseWare projects, right?
Sort of. More than a decade ago, the Massachusetts Institute of Technology started a much-touted project called OpenCourseWare, to make all of its course materials available free online. But most of those are text-only: lecture notes and the like. Several colleges now offer a few free courses in this way, but they typically haven't offered assignments or any way for people who follow along to prove that they've mastered the concepts. MOOCs attempt to add those elements.

So if you take tests, do you get credit?
So far there aren't any colleges that offer credit for their MOOCs. But some MOOC participants can buy or receive certificates confirming their understanding of the material.

Who are the major players?
Several start-up companies are working with universities and professors to offer MOOCs. Meanwhile, some colleges are starting their own efforts, and some individual professors are offering their courses to the world. Right now four names are the ones to know:

edX
A nonprofit effort run jointly by MIT, Harvard, and Berkeley.

Leaders of the group say they intend to slowly add other university partners over time. edX plans to freely give away the software platform it is building to offer the free courses, so that anyone can use it to run MOOCs.

Coursera
A for-profit company founded by two computer-science professors from Stanford.

The company's model is to sign contracts with colleges that agree to use the platform to offer free courses and to get a percentage of any revenue. More than a dozen high-profile institutions, including Princeton and the U. of Virginia, have joined.

Udacity
Another for-profit company founded by a Stanford computer-science

professor.

The company, which works with individual professors rather than institutions, has attracted a range of well-known scholars. Unlike other providers of MOOCs, it has said it will focus all of its courses on computer science and related fields.

Khan Academy
A nonprofit organization founded by the MIT and Harvard graduate Salman Khan.

Khan Academy began in 2006 as an online library of short instructional videos that Mr. Khan made for his cousins. The library—which has received financial backing from the Bill & Melinda Gates Foundation and Google, as well as from individuals—now hosts more than 3,000 videos on YouTube. Khan Academy does not provide content from universities, but it does offer automated practice exercises, and it recently offered a curriculum of computer-science courses. Much of the content is geared toward secondary-education students.

Udemy
A for-profit platform that lets anyone set up a course.

The company encourages its instructors to charge a small fee, with the revenue split between instructor and company. Authors themselves, more than a few of them with no academic affiliation, teach many of the courses.

2. Online course attracts 40,000 participants — and questions from GSE students

From Stanford Graduate School of Education News and Events https://ed.stanford.edu/

February 5, 2013
By Mandy Erickson

Dan McFarland

GSE professor Dan McFarland wins kudos for his first "MOOC," but still is looking for ways to improve Stanford students' experience of the class. Becca Constantine, a student in Stanford's Policy, Organization and Leadership Studies (POLS) master's program, was keenly interested in education professor Dan McFarland's MOOC experiment.

McFarland was putting his Organizational Analysis class online — available free to literally anyone with a computer — as a massive open online course. At the same time, he required his students at the Stanford Graduate School of Education to take the fall 2012 course in what's called a "flipped" format, in which they first watch online videos of lectures then come into class to discuss them with McFarland and a teaching assistant.

Because Constantine is hoping to go into higher education administration, she wanted to experience a MOOC, to see how it fits into the future of education. Over the last two years, Stanford and other universities have started offering MOOCs that are reaching tens of thousands of students globally. But questions abound. Will they be a substitute for "real-world" courses now being offered at colleges nationwide? And how well do students learn in an online format?

"I'd never been in an online course, and I'd never had to learn how to engage with a screen rather than a person," Constantine said. "There were times when I wanted to stop and say, 'Wait, I don't understand,' but I had to wait for the class." A few Stanford students expressed frustration with the approach, but the majority, including Constantine, found the online lectures more organized than those delivered in a classroom. "There aren't tangents and sidebars," she said. "You get the material in a very directed way."

 The class was McFarland's first foray into the MOOC world. He launched it after receiving a seed grant from the Office of the Vice Provost for Online Learning to offer the course. It was made available through Coursera, one of a handful of organizations now offering university classes as MOOCs, generally for free.

While the initial MOOCS were devoted to computer science subjects, McFarland's class reflects how the approach is now being tried in the social sciences, the humanities and other disciplines. McFarland's course examines theories of how organizations — businesses, schools, nonprofits, associations — are structured, how they create a product or effect a change, and how individuals behave within them.

The MOOC was a learning experience for McFarland, too. He had the same big-picture questions as Constantine, but he also needed to tackle the practical aspects of teaching 40,000 students scattered around the world

instead of 40 seated in a single classroom.

McFarland spent much of the summer and fall recording 80 15- to 20-minute lectures, using the same material he feeds to his students at the Graduate School of Education. Short quizzes interrupted the lectures, and additional readings were offered at $80, discounted from $200. (The texts were made optional, because, as McFarland noted, $80 is a year's salary for many people in developing nations.)

Online forums gave the MOOC students a means to help each other, and each week, McFarland answered the six questions MOOC students voted the most popular. Meanwhile, the Stanford students met in a real-world class to discuss the material, engage in group projects and collaborate on applying the material to cases. Both Stanford and MOOC students graded each other's written papers, while the Stanford students received added feedback from McFarland and his TAs.

During the 10-week course, Coursera gathered statistics on the MOOC students and how engaged they were in the class.

"What I learned is that very few people want to write papers and take a college class," McFarland said. "Also, a lot don't have enough command of English to write an eight-page paper." Of the 44,501 students registered for McFarland's MOOC, only 2,375 took the final, which earned them a basic certificate if they scored 70 percent or better and spent time on the class's online forums. Just 291 also wrote papers to receive an advanced certificate.

As the quarter progressed, McFarland learned how to be more engaging online: "Now I know how to act animated in front of a camera," he said. "I gained a lot of respect for TV actors." He had to alter the lectures because he realized that many students didn't have the reading material: "Suddenly your lecture becomes the only text. Every minute they watched I wanted to give them something meaningful and succinct."

He was also surprised by how international his MOOC students were — they represented every continent except Antarctica and 70 nations. And he stumbled across a number of technical problems, which Coursera staff and his team of teaching assistants — Charlie Gomez, Emily Schneider and Dan Newark — ironed out.

When the course ended and McFarland received the evaluations, he found that his MOOC students from outside Stanford were almost uniformly enthusiastic. Huda Midani, a human resources consultant in Damascus, Syria, wrote by email that the course "helped me understand organizational issues better and be better prepared to analyze them." She added that "Professor Dan was really helpful and deeply cared about us (students)."

But some Stanford students, while liking the course content, were not fans of the online format. "There's something about the computer that allows you to ignore it," said Whitney Stubbs, a POLS student, who noted that she did chores while listening to them. "At least if I were in a lecture hall, I wouldn't do my dishes or seed pomegranates. I'd take notes." The problem could be that Stanford students were required to take the class, while the other students were there voluntarily. "Maybe we're just less motivated to pay attention," Stubbs said.

McFarland acknowledged that the challenge is to figure out how to make the class more appealing to the Stanford students — how to provide additional in-person experiences that will make them feel the expense of a Stanford education is worth their while. Still, he was struck by the benefits.

"I think the MOOCs are a great service to the world," he said. "It brings knowledge to the masses and enables Stanford to do a global service a nonprofit could be proud of providing."

As for how well students learn online, it depended on how much they put into the class. Inga Brandes, an online education administrator in Cologne, Germany, who took the advanced track, felt that writing papers was the key to understanding the material. "If you just watch videos, you think, 'Yeah, yeah, I got it.' But when you have to write it down and explain it to someone, you really have to think about it," she said by phone.

And while the MOOC is "not the same [as a classroom], it still gave you a feeling of a learning community," she added, noting that being a MOOC student gave her an added benefit: The wide diversity of fellow students taught her about organizations in different cultures, where, for example, customs prohibit people from telling colleagues they made a mistake.

So, will MOOCs replace classrooms? POLS student Constantine, who wrote a paper about the MOOC for another class, thinks not. "MOOCs aren't there

to replace Stanford," she said. She felt that the classroom, in which the students grouped together to discuss the material, was an essential part of the learning experience. "If they start to replace schools, it will be community colleges," she said.

McFarland too doubts that MOOCs will replace all classrooms or call into question the higher education system's existence: "Universities are expanding their functions and audiences over time. Stanford reaches a new population in the world through MOOCs, and they have distinctive interests and needs. Even if MOOCs do replace some teaching efforts in universities, the universities will continue to perform research, partner with industry, conduct outreach with communities, and develop social networks of alumni and societal stakeholders."

Mandy Erickson, a Bay Area freelance writer and editor, contributes stories to the Stanford Graduate School of Education.

3. Revolution Hits the Universities

New York Times
January 26, 2013

Revolution Hits the Universities

By THOMAS L. FRIEDMAN

LORD knows there's a lot of bad news in the world today to get you down, but there is one big thing happening that leaves me incredibly hopeful about the future, and that is the budding revolution in global online higher education. Nothing has more potential to lift more people out of poverty — by providing them an affordable education to get a job or improve in the job they have. Nothing has more potential to unlock a billion more brains to solve the world's biggest problems. And nothing has more potential to enable us to reimagine higher education than the massive open online course, or MOOC, platforms that are being developed by the likes of Stanford and the Massachusetts Institute of Technology and companies like Coursera and Udacity.

Last May I wrote about Coursera — co-founded by the Stanford computer scientists Daphne Koller and Andrew Ng — just after it opened. Two weeks

ago, I went back out to Palo Alto to check in on them. When I visited last May, about 300,000 people were taking 38 courses taught by Stanford professors and a few other elite universities. Today, they have 2.4 million students, taking 214 courses from 33 universities, including eight international ones.

Anant Agarwal, the former director of M.I.T.'s artificial intelligence lab, is now president of edX, a nonprofit MOOC that M.I.T. and Harvard are jointly building. Agarwal told me that since May, some 155,000 students from around the world have taken edX's first course: an M.I.T. intro class on circuits. "That is greater than the total number of M.I.T. alumni in its 150-year history," he said.

Yes, only a small percentage complete all the work, and even they still tend to be from the middle and upper classes of their societies, but I am convinced that within five years these platforms will reach a much broader demographic. Imagine how this might change U.S. foreign aid. For relatively little money, the U.S. could rent space in an Egyptian village, install two dozen computers and high-speed satellite Internet access, hire a local teacher as a facilitator, and invite in any Egyptian who wanted to take online courses with the best professors in the world, subtitled in Arabic.

YOU just have to hear the stories told by the pioneers in this industry to appreciate its revolutionary potential. One of Koller's favorites is about "Daniel," a 17-year-old with autism who communicates mainly by computer. He took an online modern poetry class from Penn. He and his parents wrote that the combination of rigorous academic curriculum, which requires Daniel to stay on task, and the online learning system that does not strain his social skills, attention deficits or force him to look anyone in the eye, enable him to better manage his autism. Koller shared a letter from Daniel, in which he wrote: "Please tell Coursera and Penn my story. I am a 17-year-old boy emerging from autism. I can't yet sit still in a classroom so [your course] was my first real course ever. During the course, I had to keep pace with the class, which is unheard-of in special ed. Now I know I can benefit from having to work hard and enjoy being in sync with the world."

One member of the Coursera team who recently took a Coursera course on sustainability told me that it was so much more interesting than a similar course he had taken as an undergrad. The online course included students from all over the world, from different climates, incomes levels and

geographies, and, as a result, "the discussions that happened in that course were so much more valuable and interesting than with people of similar geography and income level" in a typical American college.

Mitch Duneier, a Princeton sociology professor, wrote an essay in The Chronicle of Higher Education in the fall about his experience teaching a class through Coursera: "A few months ago, just as the campus of Princeton University had grown nearly silent after commencement, 40,000 students from 113 countries arrived here via the Internet to take a free course in introductory sociology. ... My opening discussion of C. Wright Mills's classic 1959 book, 'The Sociological Imagination,' was a close reading of the text, in which I reviewed a key chapter line by line. I asked students to follow along in their own copies, as I do in the lecture hall. When I give this lecture on the Princeton campus, I usually receive a few penetrating questions. In this case, however, within a few hours of posting the online version, the course forums came alive with hundreds of comments and questions. Several days later there were thousands. ... Within three weeks I had received more feedback on my sociological ideas than I had in a career of teaching, which significantly influenced each of my subsequent lectures and seminars."

Agarwal of edX tells of a student in Cairo who was taking the circuits course and was having difficulty. In the class's online forum, where students help each other with homework, he posted that he was dropping out. In response, other students in Cairo in the same class invited him to meet at a teahouse, where they offered to help him stay in the course. A 15-year-old student in Mongolia, who took the same class as part of a blended course and received a perfect score on the final exam, added Agarwal, is now applying to M.I.T. and the University of California, Berkeley.

As we look to the future of higher education, said the M.I.T. president, L. Rafael Reif, something that we now call a "degree" will be a concept "connected with bricks and mortar" — and traditional on-campus experiences that will increasingly leverage technology and the Internet to enhance classroom and laboratory work. Alongside that, though, said Reif, many universities will offer online courses to students anywhere in the world, in which they will earn "credentials" — certificates that testify that they have done the work and passed all the exams. The process of developing credible credentials that verify that the student has adequately mastered the subject — and did not cheat — and can be counted on by

employers is still being perfected by all the MOOCs. But once it is, this phenomenon will really scale.

I can see a day soon where you'll create your own college degree by taking the best online courses from the best professors from around the world — some computing from Stanford, some entrepreneurship from Wharton, some ethics from Brandeis, some literature from Edinburgh — paying only the nominal fee for the certificates of completion. It will change teaching, learning and the pathway to employment. "There is a new world unfolding," said Reif, "and everyone will have to adapt."

4. Peer and Self Assessment in Massive Online Design Classes (Unpublished paper sent to all registrants via e-mail. Please do not distribute.)