Will Massive Online Open Courses (MOOCs) Change Education?

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Abstract

As has been apparent for the past several months, MOOCs (Massive Online Open Courseware) have emerged as a powerful contender for the next new education technology. Yet the landscape of education technology is littered with the remains of previous technological breakthroughs that have failed to live up to their initial promise, or at least their initial rhetoric.

Is anything different this time?

We strongly believe the answer is yes—this time really is different. Several MOOCs have been run during 2012 that have taught many thousands of students in a variety of topics.

This panel will be a chance to review and discuss the short but engaging history of MOOCs, reviewing data from several MOOC instances, critically assessing what's happening and why things are different.   Are MOOCs really a qualitative change in the way education can be delivered, or is it merely another new wrapper for old content. We believe the human experience of online education is about to change; we should understand the issues behind the phenomena.

Argument for the panel
From the beginning, MOOCs have had a remarkable ability to attract large numbers of students to a vigorous online learning community. [1] They have quickly ramped up from small numbers of students to very large numbers of students, several classes having initial enrollments of > 150K students, and successfully "graduated" >20K students. These online classes easily transcend national boundaries, with many MOOCs drawing students from 100 – 200 countries at a time.

MOOCs have two fundamental differences from previous educational technology: (A) MOOCs are available anywhere/anytime in small digestible components that allow students to learn easily and under a wide variety of places, times, and situations; (B) Successful MOOCS have engaged and socially active communities of students that pose problems, resolve questions, add additional material to the class, and support other students' learning.

But since MOOCs are made up of large numbers of students, the possibility of radically different ways of teaching and understanding what (and how) students are learning is possible for the first time. As Daphne Koller points out in her TED talk [2], "…a 2% error rate in a class of 100 students in barely detectable; in a MOOC with several thousand students, it's a signal that something has gone very wrong… we can fix that misunderstanding."

Since MOOCS are a relatively new kind of online learning, there are relatively few studies written about them. The research that is going on is actively being done by people building MOOC systems and running them as large-scale classes. The early stages of MOOC development is happening now. CHI of spring 2013 will be a perfect time to reflect on what the first year of MOOC activity has brought about.

This panel promises lively debate around four central questions that we need to understand MOOCs and their future:

(1) Given that MOOCs have been so initially successful, what does it take to make a MOOC great? Is it the design of the material? Is the cleverness of the video? Is it the construction of activities and assessment? Is it the degree of social engagement?

(2) How will MOOCs transform educational practice in the university… or perhaps more importantly, in the world at large? If anyone can make a MOOC, what role do teachers—and students as teachers—play in the educational ecology?

(3) Can anyone make a MOOC? Or is a MOOC, like a great book, something that needs to be carefully tailored and written for the audience. More generally, what are the conditions for which MOOCs are a great solution? Are their classes and course materials for which MOOCs do not work well?

(4) How do we scale assessment mechanisms to global, large-scale MOOCs for creative, open-ended work? In a traditional class, assessment materials help students gauge their current level of achievement and learn new skills. Can self-assessment mechanisms or peer-assessment systems replace more traditional methods of evaluating student performance?

Our panel will conclude with discussion about how the panelists and audience see MOOCs playing a role in education over the next several years. Will this be a temporary bubble of interest, or will MOOCs (or something much like them) profoundly change the way we think of education in terms of both practical education, life-long learning, and academic achievements?

To put it bluntly: Will Stanford still be Stanford when the majority of people with Stanford degrees have never visited California, but hold purely virtual online course credits? Or will state schools merely become the location from which faculty run extremely large-scale classes that span the world, bringing together students in a virtual-only classroom.

One data point that offers a different perspective: the Machine Learning class offered by Thrun and Norvig in early 2012 was one of the first truly large MOOCs in advanced computer science. Although ML has been a core class for many years, this year 637(!) students have signed up for the in-person version of Stanford's ML class, double the previous high-water mark set last year. (At the same time, we note that many ML MOOC graduates are listing themselves as Stanford alums in the social media.)

The two moderators are practiced MOOC builders and deliverers—between the two lead panelists, more than 300K students have been taught in the latter half of 2012. While both are practiced, they have rather different visions of the future of MOOCs and promise a lively debate on an important topic at CHI 2013.

Panelists
Daniel M Russell (Google) and Scott Klemmer (Stanford) are signed up to be co-moderators and panelists. Scott ran the first peer-assessed massive online class; the two offerings of his HCI class garnered more than 100k signups. Dan has run two MOOCs on the topic of search with over 250K students, helped in the construction of Google's MOOC construction platform, CourseBuilder, and will have built (and delivered) a third MOOC by the time CHI meets in Paris.

Armando Fox (UC Berkeley) created the MOOC "Software Engineering for Software as a Service," taught with David Patterson, offered through UCBx. 5,000 students completed that MOOC. It will be offered 2 more times before CHI in Paris.

Celine Latulipe (U. North Carolina, Charlotte) has had extensive experience in teaching in the "flipped classroom" style with online materials, one of the basic principal teaching styles of MOOCs.

Mitch Duneier (Princeton, Sociology) has created and run a Coursera MOOC, "Introduction to Sociology," a 7 week course offered at https://www.coursera.org/course/soc101. Leveraging

his perspective as a sociologist, he has written and spoken about the teaching and learning experience in MOOCs, including an op-ed for the Chronicle of Higher Education http://chronicle.com/article/Teaching-to-the-World-From/134068/

Elizabeth Losh (UCSD, humanities) is currently writing a book on MOOCs. Through participant observation, interviews, and critical analysis, her book cuts through the surface rhetoric of MOOCs to present the actual, moment-by-moment, lived experience of MOOCs for students and critically analyze the promise and potential unintended consequences of online education.

References

[1]   Norvig, P. Helping the world to teach. http://googleresearch.blogspot.com/2012/09/helping-world-to-teach.html, 2012.

[2]   Koller, D. What we're learning from online education. TED, Edinburgh, Scotland, June 2012. http://www.youtube.com/watch?v=U6FvJ6jMGHU