

MOOC Culture and the Evolution of Higher Education

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SFAA March 18, 2014**

Abstract

Massive Open Online Courses, also known as MOOCs, are creating an uproar in academia, as millions of people flock to this new form of digital media. With these classes attracting students from around the world and from different levels of education and expertise, the environment is quite different from the traditional classroom. This presentation will focus on the MOOC experience from the perspective of a participant observer and the changing nature of what it means to be a student.

Introduction

The world changed on April 22, 1993 when the internet became available to the general public; we were suddenly a much more connected society (Davidson, 2014). Universities were among the first to adopt this technology, and there was a frenzy of activity during the late nineties to compete for top faculty and students by being the most “wired” campus (Severence, 2012). The growth of technology was more modest in higher education in the following years, but again took center stage in 2012, which the New York Times dubbed the “Year of the MOOC” (Pappano, The Year of the MOOC, 2012).

That year, the professors from Stanford’s computer science department decided to not just make their lectures and syllabi freely available online (as had been common in the past with open courseware), but to create an interactive course session with assignments and discussion boards that anyone in the world could join. The experiment met with wide success, and the MOOC, or Massive Open Online Course, took the world stage with 160,000 students in one of the first sessions (Perez-Pena, 2012). Since then, several major platforms have evolved including Udacity, EdX, Udemy and Coursera, and the growth rate has been phenomenal. Coursera, which has become the largest provider of MOOCs, now has more than 6.6 Million registered users and over 600 available classes (Edsurge, 2014) (Coursera, 2014).

Why Study MOOCs?

There are many different forms of instruction, including face-to face classes, online and blended courses, and even DVD based instruction. Throughout the course of my academic studies, I have had experience with all of these and more, but still found my first MOOC to be something very different. My previous background in academic library science made the idea of free, high quality learning resources very appealing, so I decided to jump into this movement just as it was picking up steam in the summer of 2012. Since then, I have taken over a dozen courses, gaining certificates of completion for nine, with three more in the works. During this time, I found that the very different structure and class makeup of MOOCs created a strong environment of community, diversity and sharing.

Below is a list of classes that I received certificates for, followed by a select list of courses that I sampled. I will refer to several of these over the course of this paper.

Course Completed	Weeks	Session
Internet History, Technology, and Security University of Michigan	13	July - September 2012
Power Searching with Google Google	3	September - October 2012
Advanced Power Searching with Google Google	4	January – February 2013
Foundations of Virtual Instruction University of California, Irvine	5	September – November 2013
Video Games and Learning University of Wisconsin, Madison	6	October – November 2013
Emerging Trends & Technologies in the Virtual K-12 Classroom University of California, Irvine	5	November – December 2013

E-Learning and Digital Cultures University of Edinburgh	5	November – December 2013
Advanced Instructional Strategies in the Virtual Classroom University of California, Irvine	5	January – March 2014
History and Future of (Mostly) Higher Education Duke University	6	January – March 2014

Course Sampled	Weeks	Session
Introduction to Computer Science Udacity	Self-paced	Ongoing
Web Development Udacity	Self-paced	Ongoing
Greek and Roman Mythology University of Pennsylvania via Coursera	10	September-December 2012
Big Data in Education Columbia University	8	October-December 2013

Sampling and Flexibility

If you follow MOOCs in the news, you've probably heard about the low completion rates. Usually only between about 4 and 10 percent of participants earn certificates in each course (Haber, 2013) (Ho, et al., 2013). This is normally cast in a very negative light since completion rates are extremely important to universities. But this really isn't a good way to judge these courses, especially since certificates do not (currently) equal any type of college credit. The fact that they are free and open completely changes the makeup of the class and the motivation of the students.

The best way that I can describe it, is that signing up for MOOCs can be a little like checking out books at the library. You start perusing, and there are a lot of great looking titles. They are all free, and sometimes you end up with more than you have time for, or certain ones just aren't what you were hoping for after the first couple chapters. There is no penalty for not working all the way through each of them, and there is always the option to revisit them again later when you have more time. MOOCs place little to no pressure on grades or even completion. Everyone is free to join, come and go as they choose, and participate at whatever level they wish.

Although allowing students to jump in and out of courses can create some problems in tracking student success rates, it allows a much wider audience to become involved and allows them to pursue a wider range of interests. Without the cost, strict dedication of time, or risk to their academic record that is normally associated with traditional courses, people are able to sample classes and explore subjects for personal enrichment or that are outside of their comfort zones.

Included on my sampling list is a course on mythology. This is something that I have always been interested in, but I have never been able to take a class on. It never really fit into my degree program, it was taught only rarely (and usually in the middle of the day) and would have been very expensive for a personal enrichment class that would not have, in any way, improved my resume. By taking a class in this way, I was able to satisfy my curiosity, and peek in on interesting discussions without having to rearrange my

life.

Programming and data science are also subjects that I would have otherwise avoided. As someone with an interest in the basic theories and mechanics of computer science, but without a deep love of calculus, I would have been terrified to commit to a sixteen week course at the university directed at students entering the field. But, since MOOC's allow students to choose their own pace and level of engagement, this type of education makes it much easier to explore different fields and discover new interests.

Workload

To explain further about the varied pace of massive open online courses as compared to traditional college course, I have included some rough estimates below for courses that I completed. The lecture/video run times were tallied from individual course pages, but the weekly workload estimate were taken from the course information pages. The pace for these is fairly typical for the subjects that I am focusing on, but courses can range anywhere from less than half the pace of a traditional class to almost twice as fast. Some even have an expected weekly workload as high as 16-20 hours. In addition to allowing flexibility for the students, this also allows professors more flexibility to create course based around narrower topics that might not work well as a full semester course, or to create sampler courses to give potential students a taste of programs they may be interested in.

Course	Length	Lecture hours	Total Hours per Week	Total Class time	Approximate Equivalent
Standard 3 unit undergraduate course	15 weeks 43 or 44 50 minute classes per semester plus 100 minute final	Total per semester 2250 minutes (37 hours 30 minutes) 150 minutes per week	assuming 2-3 hours of homework per lecture hour, 5 - 7 hours of homework per week, plus 2.5 hours lecture,--- 7.5-9 hours a week	7.5-9 hours for 15 weeks-- 112.5-135 hours total time per semester	
Emerging Trends & Technologies in the Virtual K-12 Classroom	5 weeks	Total of 31 videos 321:37 minutes (5 hours 21:37) Average of 62 minutes per week	2-4 hours a week for 5 weeks	10- 20 hours total work time	2 weeks
Internet History, Technology, and Security	13 weeks	Total 37 videos 483:55 (8 hours 3:55) Average of 37 minutes per week	3-5 hours a week for 13 weeks	39- 65 hours total work time	5 - 6 weeks
History and Future of (Mostly) Higher Education	6 weeks	Total of 34 videos 318:10 (6 hours 38:10) Average of 53 minutes per week	2- 4 hours a week for 6 weeks	12-24 hours total work time	2 weeks
Video Games and Learning	6 weeks	Total 56 videos 301:51 (5 hours 1:51) Average of 50 minutes per week	4-6 hours a week for 6 weeks	24-36 hours total work time	4 weeks
E-Learning and Digital Cultures	5 weeks	Total 25 videos 148:55 (2 hours 28:55) Average of 30 minutes per week	5-7 hours a week for 5 weeks	25-35 hours total work time	4 weeks

This is not to say, of course, that these classes are directly equivalent to traditional ones, but to provide an estimation of equivalent learning time. Most of the MOOCs that I received certificates for would be roughly equal to about a quarter of a semester-long class, moving at about half the speed. For classes in technology and education, this pace can be very beneficial, as it allows more time for discussion, which many participants consider the most valuable part of the course. On the discussion board in one of these classes, a student from Brazil stated that-

“You touched a very important point for me, and it is that online courses are more relaxed. I love to learn, to read, to study, but I hate to "have to" go to classes, so many times just to find a professor who simply repeats what the book says. At least this was the way the things were like in Brazil when I went to the university. A total loose [waste] of time! The students almost never participated cause there, at least at the majority of the universities, there is no debate in classes and the students don't have a syllabus through which prepare the class before going to the lecture. It is boring, boring, boring.... Online courses are to me a totally different and richer experience. Since I discovered Coursera I have had a great time in these courses, talking with people from all over the world, without pressure and this is simply revolutionary for me!”

In another course, two students discussed how they felt about a class that was not meeting their expectations--

“Getting through this week's videos was painful! I think the instructor's delivery was at its worst this week, with all the verbal stumbling and tripping over her words, her obvious word-for-word reading and the numerous citations. OMG. Anyone else feel the same way?”

“Week four was so poorly presented I just skipped the videos and went straight to the quiz.... I'm truly disappointed with [_____], they offer a mooc and 18,000 plus students show up for the amateur hour. Now on the other hand, the discussion forums have been great, I've read a lot of great commentary and collected a bunch of great links.”

What is interesting about this conversation is that the students state that they are disappointed with the material presented by the instructor, and they really have no obligation to stay in the course, but they chose to stay because the community created by the students was so valuable. This is something that is really revolutionary, and something that I think higher education has been trying to find a path to for years. With the open structure and larger group of students, the class becomes more than the course that was created by the instructor. It grows and changes, and takes on a life of its own when it goes online.

The One Room Schoolhouse

The ability to share things online with large audience can make contributions feel worthwhile, and drives many people to put a significant amount of time and effort into their work. These types of efforts have been seen for years in open software and media projects such as Unix and Wikipedia. Even if only a small portion of those that are in the community are contributing and sharing, the community is so vast and includes so many highly skilled members that something fantastic is still created (Karanovic, 2012).

In MOOC's you will find people organizing study groups around languages, subjects or locations, starting social media groups to connect with others that share their interests, and even translating lectures into other languages so the course can have a wider reach.

The people in these courses have a wide range of backgrounds and skills which creates incredible possibilities.



"Where Did you go to School?"

To the left is the student location map from *Internet History, Technology and Security*

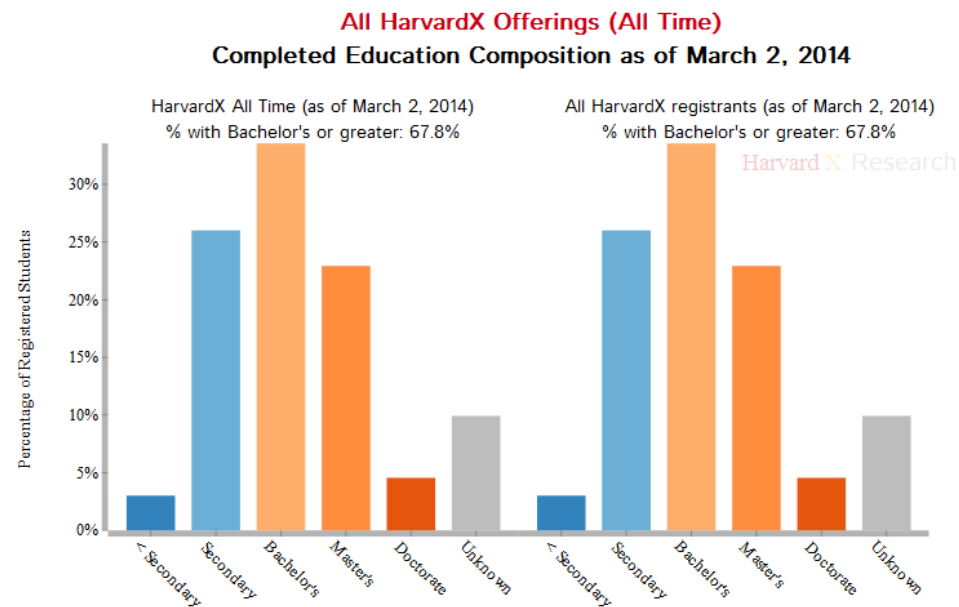
(Severance, Where did you go to School?, 2012)

Above is a map of the students from the first class that I took in 2012, *Internet History, Technology and Security*, taught by Charles Severance from the University of Michigan. This map was created by the students; each person was asked to drop a pin where they lived.

It is representative of the variety of cultures and viewpoints that come together for many of these courses. This type of interaction has been a goal of higher education for years and one of the major reasons that student exchange programs exist. Bringing people together that have varied experiences and ideas helps generate an environment of creativity diversity and tolerance.

In addition to MOOC students being culturally diverse, they also include a large percentage of highly educated people. The following chart is from Harvard X and gives a breakdown of the current education levels of their MOOC students. 67.8% already have a bachelor's degree or higher, and much of the remainder are either in college or have some college.

Education Levels Composition



(Nesterko & et al., 2014)

This is not to say that there are only degree holders taking these courses. There are also parents using them as part of home school curricula, and young students (both foreign and American) hoping that these classes will give them an edge when applying to college (Pappano, The Boy Genius of Ulan Bator, 2013) (Boyd & Kasraie, 2013). The number of these types of students and those from underserved populations in developing countries will likely grow rapidly in the coming years, as MOOC's move beyond their highly educated early adopters into the mainstream.

The diversity of education levels, language levels, cultural ideals and experience in the subject matter create a sort of one-room-schoolhouse effect. Unlike a traditional classroom, where the students are from a fairly similar educational background with similar motivations (normally to complete a degree program), MOOC's include people learning many different things at many different levels. Some are there to earn certificates for work or college resumes, some are practicing professionals expanding their knowledge of narrow topic areas and updating their skills, some are there solely to improve their English skills, and some are even retired scholars looking for others with whom to discuss their favorite subjects.

MOOC's as a "Third Place"

The idea behind my selection of courses on online education, culture and technology was that I could not only observe interactions in MOOC communities, but also expand my knowledge of the field at the same time, and there were many brilliant ideas included in these courses.

In *Video Games and Learning*, Professor Constance Steinkuehler presented the idea of online communities, particularly surrounding video games, as new forms of the "third place" based on concepts from Ray Oldenburg's *The Great Good Place*. The third place is described as a less formal environment, separate from work and home, (places one and two) where people can relax, hang out, and make new friends. In the past this would have included places such as coffee shops, book shops, or bars (Steinkuehler, 2013) (Oldenburg, 1999). As we become a more digital society though, people are becoming untethered from that which is physically around them, and are finding new ways to connect with others online (DeNicola, 2012). As many participants are taking MOOCs for enjoyment and to make new connections, I would argue that MOOCs would also meet this definition of a "third place".

Universities have long been considered havens for those with a love of learning and an interest in scholarly exchange, and with luck, students will become enthusiastic lifelong learners during the course of their studies. But, after the college years are over, it can be difficult (or expensive) to find similar learning communities. MOOCs being used as a "third place" by lifelong learners has likely been a great contributor to the phenomenal growth and adaptation rate of this technology, which has been touted as "faster than Facebook" the social platform which grew to include nearly one billion users during its first eight years (Pappano, The Year of the MOOC, 2012).

Collaboration and Sharing

With such large groups of enthusiastic learners, there comes tremendous opportunities. Educational anthropologist, Professor Michael Wesch, touched on this subject in a 2010 Ted Talk covering technology and education—

"If you start to see your students as participants instead of burdens, then the bigger class actually becomes a bigger opportunity and more opportunities emerge. If I could only get the wisdom of all these people engaged in this project, then they could do much more than say I could do alone" (Wesch, 2010).

This is something that becomes a very real possibility with MOOCs and something that I observed personally in the University of Wisconsin's course on video games and learning.

Professors Constance Steinkuehler and Kurt Squire not only wanted to present an overview of research in their field but to also use their course for field research. They recognized that having thousands of people eager to learn and contribute could be a great boon. Each week, as they explained current theories in the field, they presented an activity that was representative of the concepts, such as eye-tracking experiments for games and cognition, and social networking diagrams for social aspects of games.

At the beginning of each week, they would discuss the initial findings of the previous week's activities, and some of the possibilities it created for further study. The students were thrilled with this, and some of the groups that were formed during this class were even asked to continue collaborating on research after the conclusion of the course. Imagine having thousands of people that were not only willing, but eager and excited to be a part of your research. We were all able to take part in an activity that felt important and had real world outcomes. This class was actually able to make lasting contributions to the field.

Conclusions

There is an incredible opportunity for sharing and collaboration in these courses, and it is really moving both ways. Both students and professors are contributing to a larger body of knowledge and rather than closely guarding information, are giving it away. Several of the classes that I was involved in included portions of, or even entire books written by the professors as well as other content that they created. Charles Severance spoke about this in his closing lecture for *Internet History, Technology and Security*:

"You've heard me talk about the fact that I care a lot about teachers, and I think Coursera has the wonderful ability to teach teachers or give teachers materials that they can use in their class, and enhance everyone's class. Not just by taking my class, but by taking my ideas and bringing them into your classroom. So, I really care a lot abouthow many teachers, and how many teachers are thinking about using the materials, and so that's exciting. So, I really want people to use these videos and borrow my slides.....my slides are creative commons. You can do whatever you like".
(Severance, Internet History, Technology and Security Grand Finale Lecture, 2012)

This type of sharing represents big changes for academia and has made some members of the scholarly community nervous. There has been some fear that MOOCs will replace and standardize university courses, and silence local voices (Altbach, 2013). In a recent Ted Talk including Sebastian Thrun of Udacity, and Salman Khan of Khan Academy, Thrun explains that MOOC's were never meant to replace higher education, any more than Khan Academy was meant to replace K-12 education. They were meant to augment it

(Walters, 2014).

Rather than silencing local voices, MOOCs are allowing even more people to contribute and be heard. The structure and pace of open online education is removing barriers that prevent people from being able to explore new interests and work toward their own goals. It is creating vibrant learning communities where lifelong learners can interact on multiple levels, and is starting to harness the possibilities of crowdsourcing for research.

Although there are still many obstacles for massive open online courses to overcome (particularly uneven access to high speed internet), they represent a major change in the way that universities convey knowledge and to whom they convey it. What was once restricted to a geographically limited, select group of degree seekers has now been opened up to people of all nationalities ages and education levels. They are changing the idea of what it is to be a student by opening up a dialog with the world and asking others to join in.

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