AN OVERVIEW OF MASSIVE OPEN ONLINE COURSES (MOOCs): SOME REFLECTIONS

Anjali Gulati

Senior Assistant Professor & Head

Isabella Thoburn College

Lucknow

Abstract

In this paper, the author has introduced the evolving concept of free online education, that is, MOOC; its history has also been outlined. The paper also discussed the know-how of the MOOC and its structure such as course syllabus, readings, assignments, discussion forums, and multiple choice quizzes. It has further traced down major players of MOOC, for example, coursera, edX, UDACITY, FutureLearn, and Khan Academy. In addition, it has also provided the list of MOOCs offered in Library and Information Science. The paper concluded by highlighting the future of MOOC, such as, offering Masters degree in computer science(Georgia Tech University) through series of massive open online courses and starting MOOC.org web site.

Key words: *MOOCs, online learning, free learning, online courses, Coursera, UDACITY, edX, Future learn, Khan Academy, Georgia Tech University, MOOC.org*

INTRODUCTION

A massive open online course (MOOC) is a model for delivering and learning content online to any person who wants to take a course, with no limit on attendance. Traditional online courses charge tuition, carry credit and limit enrollment to a few dozen to ensure interaction with instructors. The MOOC, on the other hand, is usually free, credit-less and massive too. MOOCs have been around for a few years as collaborative techie learning events, but the year 2012 was the year when "everyone wants in" (Pappano, 2012).

The history of the MOOC can be traced back to a Proto-MOOC which was created at Utah State University in 2007 by David Wiley, but it was not until 2008 that Dave Cormier of the

University of Prince Edward Island coined the term MOOC. Cormier used the term to describe an open course created by George Siemens and Steven Downes offered to 25 students at the University of Manitoba that was also open for public enrollment. The first MOOC offered by edX (established by MIT and Harvard) attracted an amazing 155,000 students. MOOCs began to gain popularity with the creation of the PLENK2010 and DS 106 courses that were taught by Jim Groom and Michael Branson, and reached the pinnacle of its popularity when, in 2011, two courses taught by Stanford University professors, Sebastian Thrun and Peter Norvig, the founders of Udacity, enrolled 90,000 and 160,000 students, respectively (Creed-Dikeogu & Clark, 2013, p. 10).

KNOW HOW OF MOOC

A MOOC is a lot like a college class and there are umpteen MOOCs in every subject. Millions of people who have a desire to learn and grow would just dive into MOOC. MOOCs are taught by top professors at some of the world's best-known universities and supported by teaching assistants. These courses do not have any entry requirements - all courses can be taken by anyone from anywhere online and run two three times each year. A student would typically require 1-2 hours of study each week for around 5 weeks. Further, these courses are self-directed, meaning you follow the course materials, complete the readings and assessments, and get help from a large community of fellow learners through online forums. Moreover, these courses meet high academic standards and are subject to internal quality assurance processes.

MOOC is defined as an online phenomenon gathering momentum over the past two years or so, a MOOC integrates the connectivity of social networking, the facilitation of an acknowledged expert in a field of study, and a collection of freely accessible online resources. Perhaps most importantly, however, a MOOC builds on the active engagement of several hundred to several thousand "students" who self-organize their participation according to learning goals, prior knowledge and skills, and common interests. Although it may share in some of the conventions of an ordinary course, such as a predefined timeline and weekly topics for consideration, a MOOC generally carries no fees, no prerequisites other than Internet access and interest, no

predefined expectations for participation, and no formal accreditation (McAuley, Stewart, Siemens, & Cormier, 2010, p. 4).

STRUCTURE OF MOOC

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 (Chronicle of Higher Education, 2013). Precisely, anyone with internet connection can enroll in a MOOC; it is exclusive to those who earn college admission and pay tuition. The course is structured around a set of learning goals in a defined area of study and structured similar to traditional online higher education courses. It has a syllabus and the course content typically consists of readings, assignments, and video lectures, which are often short (6-12 minutes); these short videos would be interspersed or associated with multiple–choice quizzes. The short videos enable the students to control the pace, pause, rewind, explore and return to the video content.   Students would watch the video lectures (including some talking heads, some "worked examples" and some experiments), read assigned material (online reading lists), and participate in online discussions and forums; they would also complete online quizzes, assignments and tests on the course material (ELI Publication, 2013). The online discussion forums create a space for exploring the subject matter, forming relationships and collaborating for project work and other assignments. These also play a vital role in online courses as they help establish a learning community through which learners generate knowledge (David, Forsey & Riley, 2013). The online activities can be augmented by face-to-face meet-ups of MOOC participants who live close to one another (ELI Publication, 2013). Moreover, it is widely noted that students who spend more time contributing to course discussion forums end up performing better.

Further, MOOC student should be a self-motivated and proactive learner; student should be non-procrastinator and loves to work ahead of time. MOOCs usually run between four and 12 weeks. Some start and stop on a fixed schedule, while others are self-paced. Students who pass a MOOC

might get a certificate that says they completed the course. Students don't need to apply to take a MOOC; they just have to register in the MOOC of their interest.

MAJOR PLAYERS OF MOOC

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. MOOCs are typically provided by higher education institutions, often in partnership with "organizers" such as Coursera, edX, Udacity, Khan Academy, futurelearn and Udemy.

Coursera – It is 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. Coursera offers courses in a wide range of topics spanning Humanities, Medicine, Biology, Social Sciences, Mathematics, Business, Computer Science and many others. Additionally, it also offers courses in several languages including English, Chinese, French etc. The total number of MOOCs (including forthcoming and current) offered by Coursera equals to 538 (figure as on Nov 10, 2013). These courses are designed to help you master the material. When you take courses, you will watch lectures taught by world-class professors, learn at your own pace, test your knowledge, and reinforce concepts through interactive exercises. Most courses have start and end dates, though it is possible to join a course after it has begun, as long as it is before the registration cutoff date. The assessment methods of the course are: graded quizzes, homework, and problem sets. Many instructors allow quizzes to be taken multiple times, with highest grade counting (a different quiz each time) (Newyork Times, 2012). See a few images of the coursera's MOOC on "Metadata" by Dr. Jeffrey Pomerantz (University of North Carolina, USA). [Fig 1, 2, 3]

Fig 1: Syllabus of the "Metadata" [The MOOC recently conducted by coursera]
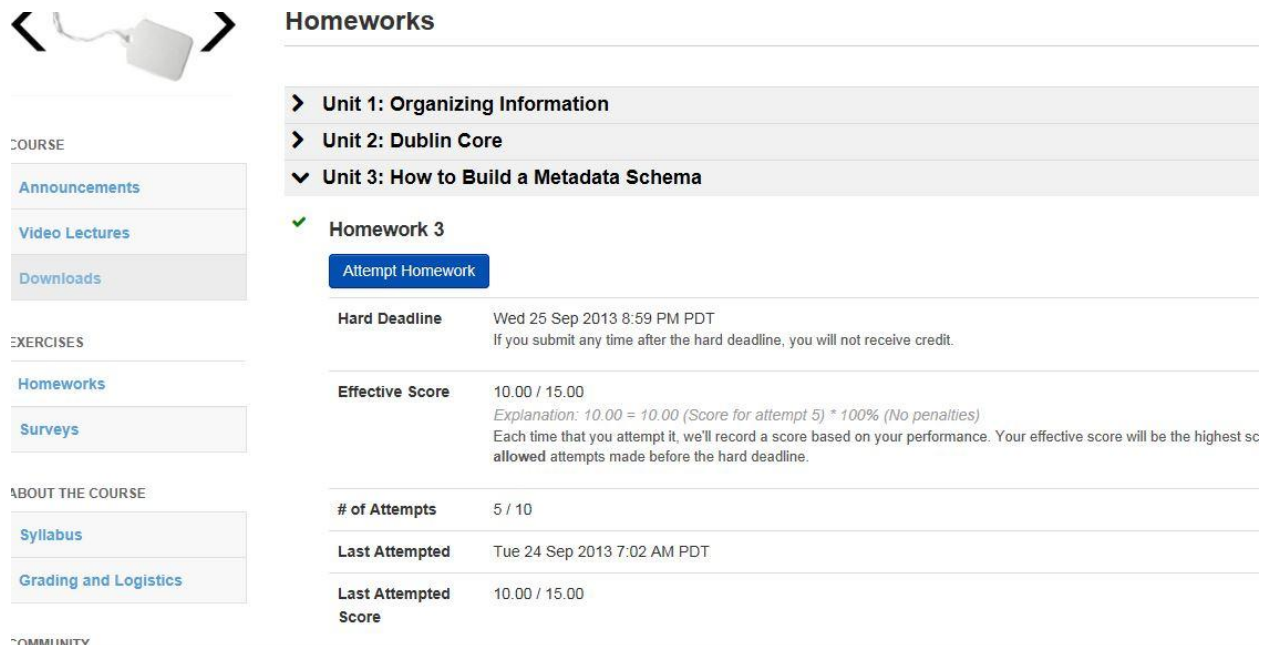
Figure 2: Video Lectures of "Metadata" [The MOOC recently conducted by coursera]

Fig 3: Homework of the "Metadata" [The MOOC recently conducted by coursera]

edX - It is a nonprofit effort run jointly by Massachusetts Institute of Technology, Harvard University, University of California at Berkeley, and University of Texas. It offers the best MOOC courses, from the best professors and the best schools, spanning dozens of subjects. Some edX courses now offer ID verified certificates of achievement. It is a new way to demonstrate your achievement and showcase your knowledge. The total number of MOOCs (including new, current and past) offered by edX equals to 91 (figure as on Nov 10, 2013). The courses have start and end dates. Registration closes two weeks after start date. Students may miss a week but lose points if they don't make a deadline for turning in an assignment. The assessment methods of the course are: graded tests and homework (Newyork Times, 2012).

UDACITY – It is 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 focused all of its courses on computer science, business design, Mathematics and Science; it provides courses at Beginner,

intermediate and advanced level. The courses can be taken at own speed, these have no start and end dates. The assessment methods of the course are: graded tests, problem sets and programming assignments (Newyork Times, 2012).

FutureLearn – It is a private company which offers a diverse selection of free, high quality online courses from some of the world's leading universities and other outstanding cultural institutions. Its partners include over 20 of the best UK and international universities, as well as institutions with a huge archive of cultural and educational material, including the British Council, the British Library, and the British Museum. It has courses in a diverse range of subjects and will be adding many more over the coming months. Courses vary in length. Most are six to ten weeks long but some short- two and three week courses are also available. The courses have start and end dates. The assessment methods of the course are: quizzes and tests.

Khan Academy – It is a nonprofit organization founded by the MIT and Harvard graduate Salman Khan. All of the site's resources are available to anyone. It doesn't matter if you are a student, teacher, home-schooler, principal, adult returning to the classroom after 20 years, or a friendly alien just trying to get a leg up in earthly biology. Khan Academy's materials and resources are available to you completely free of charge. 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 (Chronicle of Higher Education, 2013). Primarily, Khan Academy deals with several subjects, such as, Math (3rd, 4th, 5th, 6th, 7th, 8th grade, arithmetic, algebra, geometry, calculus, probability, and recreational math), Science (Biology, chemistry, Healthcare etc), Economics (Microeconomics, macroeconomics, finance etc), Humanities (World history, Art history etc).

MOOCs IN LIBRARY AND INFORMATION SCIENCE

Here is an indicative list, though not exhaustive, of MOOCs in library and Information Science:

1. **MOOC on New Librarianship - Master class (http://ischool.syr.edu/future/grad/newlibopencourse.aspx)** has been offered by School of Information Studies – Syracuse University (USA), during July 8-August 4, 2013
2. **Hyperlinked library MOOC (http://slisweb.sjsu.edu/programs/moocs/hyperlinked-library-mooc)** has been offered by school of library and information science, San Jose State University during September 3- November 23, 2013.
3. **MOOC on Information theory (https://www.coursera.org/course/informationtheory)** is being offered by Chinese University of Hong Kong, during Jan 6- April 27, 2013.
4. **MOOC on Social Network Analysis (https://www.coursera.org/course/sna)** has been offered by University of Michigan, during Oct 7-Dec 14, 2013.

FUTURE OF MOOC

Despite many exciting developments and applications, free online courses do still have many limitations – meaning MOOCs are a long way from being able to replace traditional university degrees. The true value of MOOCs lies in their capacity to open up access to knowledge that was previously the preserve of small elite. MOOCs are not for all – they serve a particular segment of students who are seeking learning opportunities from premier brands at no cost and convenience of time. It is not for students seeking full-time educational credential. However, MOOCs would democratize education, transform lives worldwide and reinvent education. For example, Georgia Institute of Technology is about to take a step that could set off a broad disruption in higher education; it's offering a new master's degree in computer science. It would be delivered through a series of massive open online courses, or MOOCs for $6,600 from January 2014. The school's traditional on-campus computer science master's degree costs about $45,000 in tuition alone for out-of-state students (the majority) and $21,000 for Georgia residents (Basulto, 2013).

Further, Google is also aiming to create an open-source education; it has partnered with Harward and MIT to expand the edX educational initiative to create a broad educational platform for free online courses. In addition, Google and edX have planned to team on another Web site called MOOC.org to host free courses from universities, businesses, governments and not-for-profit

providers. That means, instead of signing up for four years of courses at a single university, you could conceivably mix-and-match your course offerings from any of the world's best universities. Or, if you don't think a university's math, science and engineering classes are preparing you for the workplace after graduation, you could add in courses from local businesses or nonprofits (Basulto, 2013). MOOC.org would go live in the first half of 2014.

CONCLUSION

After reviewing massive literature on MOOC, it has been observed that there is an urgent need for targeting degree-seeking students in a more aggressive manner than the current "MOOC's open for all" approach. There is also dire need to find more immediate methods for allowing MOOC students to earn academic credit. Further, the academic credit for MOOCs should be allowed only if the actual course designs and assessment would be able to satisfy accrediting bodies and the credits should be accepted by degree-granting institutions. It has also been noticed that until top institutions begin putting a diploma behind their MOOCs, the students would believe that this is a second class form of education suitable only for the unwashed masses. In order to succeed, the students have to prepare themselves better for MOOC learning. Finally, online learning does not work for all students; blended classes may well be the future of MOOCs.

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