Informal Learning:

Massive Open Online Courses

Veronica O'Neill

New Jersey City University

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Massive Open Online Courses, or MOOCs, have become an important topic in education in just a few years. They are an example of lifelong learning, where interested parties can explore almost any topic with noted professors in faraway universities. The barriers of time and space are non-existent, and many thousands of participants from all over the world study and learn together. This paper will provide a brief overview of the history and current state of the MOOC movement. It will also consider the future, the MOOC 3.0 era, and to how this technology might be used to improve the educational and economic status of the world.

History

The earliest MOOC was developed in 2008 by Siemens and Downes in Manitoba, Canada. It was called "Connectivism and Connective Knowledge," and it had over 2,000 free participants, despite a lack of advertising. The MOOC concept entered the United States in 2011, with a course called "Online Learning Today and Tomorrow," offered by the University of Illinois in Springfield. This course enrolled over 2,500 participants (Sandeen, 2013).

2012 is often dubbed "The Year of the MOOC", as the three major MOOC platforms were launched that year. Faculty from Stanford University started Coursera and Udacity, while edX is a joint project of Harvard and MIT. That year, over 100,000 students enrolled in courses on the three platforms (Sandeen, 2013).

MOOCs are generally categorized as cMOOCs, which are focused on learning through interactions between participants, or as xMOOCs, which follow a more traditional, teacher to student transmission of knowledge (Kovanovic, 2015). Most modern-day MOOCs would be classified at xMOOCs.

Theory

The primary theory associated with cMOOCs is connectivism, which was originated by George Siemens and Steven Downes. Under this theory, learning takes place in networks, not from interaction with an instructor. It uses the power of the Internet, to share knowledge. Learners choose what they wish to learn, they can study many disciplines in a lifetime. Connectivism focuses on diversity, currency and decision-making as examples of key concepts (Siemens, 2004).

xMOOCs are most often associated with traditional theories, such as behaviorism. In the theory, learning is transmitted from an instructor to passive students, with very little interaction between participants. Most modern MOOCs fall into the category of xMOOCs, despite efforts to incorporate discussion boards and social media into their courses (Kesim & Altinpulluk, 2015).

Why Do Universities Offer MOOCs?

Stansbury (2014) reported that universities have six primary reasons that they offer MOOCs. The most cited reason is to extend the reach of the university, especially to a global audience. Other reasons include to build a brand, reduce costs or enhance revenue, improve educational outcomes, innovate in teaching and learning, and research teaching and learning (Stansbury, 2014).

Negrea (2013) reported that one of the great benefits universities reap from offering MOOCs is a large amount of data that can be used to improve teaching throughout the university. Harvard and MIT conducted a major study of MOOCs in 2015 which found that approximately 39% of MOOC participants were teachers, which could indicate a far-reaching impact on teaching practices beyond the MOOC itself (Harvard Gazette, 2015).

Why Do Students Participate in MOOCs?

There are many motivations for students to enroll in a MOOC, and understanding this is necessary to evaluate the effectiveness of MOOCs. Sometimes, the motive is mere curiosity about a topic, or a desire to view a single lecture on the topic. These participants, who never intended to complete the entire course, may partially explain why MOOCs have a low completion rate, estimated at about 10%. Some students are looking to experience learning at a prestigious university, others want to try online learning for the first time. Some students enroll in a MOOC that is like an in-person course they are taking at the same time to gain a different perspective and assist in understanding the material (Wang & Baker, 2015).

Harvard and MIT studied participants in their MOOCs, and found that only 57% identified that they planned to complete the course and earn a certificate. Of that 57%, about a quarter did complete the requirements for a certificate, which is significantly higher than the completion rate over all participants (Harvard Gazette, 2015).

Liyanagunawardena (2013) wrote of her own attempts to complete three different MOOCs to understand them first-hand. In the first instance, she experienced an overload of information on the discussion boards, and abandoned the course. She registered for another course, and experienced a similar time pressure. However, rather than abandon the course, she selected topics that she was interested in and focused on those. She enrolled in a third course, and despite starting four weeks late, she successfully met the requirements for the badges offered within the course. The author concluded that some students find value in the MOOC as an Open Education Resource, while others value it as a complete course. That distinction has a great impact on completion rates, and may demand that additional measures of success be developed for MOOCs.

Success Stories

There have been many success stories in the MOOC realm over the past few years. For example, in 2014 the Irish Times reported that 14,000 individuals enrolled for the first course offered by Trinity College in Dublin, "Irish Lives in War and Revolution: Exploring Ireland's History 1912-1923". This course took participants inside Ireland during the Uprising, and allowed students to examine and review primary documents which were imaged for the course. Students watched newsreel footage and read first-hand accounts of the realities of life in that period. Approximately one-half of the participants in the course came from outside Ireland (Kenny, 2015).

Another popular MOOC is Harvard's introductory "Computer Science 50" course, better known as CS50. This course is offered annually, and features live lectures featuring Harvard professor David Malan and guests such as Mark Zuckerberg and Steve Balmer. Over 100,000 students have participated in this course since it was first presented on the edX platform (Collins, 2016) . The course features a unique mix of modes of participation, from full paying undergraduate students at both Harvard and Yale, to credit-bearing courses at Harvard Extension, to the free MOOC format on edX and iTunes. Each of these modes features the same lectures and assignments, the principle variable is the level of support available to students. The course is engaging and challenging, and has become a brand of its own (Collins, 2016).

Arguably the most popular MOOC of all time is "Learning How to Learn: Powerful mental tools to help you master tough subjects" offered by the University of California San Diego. Professors in this course simplify brain science into simple techniques that one can use to remember information and improve learning. Since its inception, over 1 million students have enrolled in this course (Online Course Report, 2017).

Criticism

Completion statistics for MOOCs show that most participants who begin a course do not finish it. This may be due to several factors, including the ease of enrollment, lack of financial investment by the student, and no penalty for dropping courses. MOOC provider Coursera points out that MOOC participants are not bound to their choices, they are permitted to visit a course without penalty, and drop the courses that do not meet their immediate needs (Wilson, 2014).

It is often suggested that MOOCs bring higher education to economically disadvantaged students at no cost. Emanuel (2013) studied active MOOC users in 200 countries and found that 83% of the students who were surveyed already held a two- or four-year college degree, and 44% holding a higher degree. He also found that even in developing countries, 80% of the MOOC students are among the wealthiest and best educated 6% of the population (Emanuel, 2013).

A major point of concern for today's MOOCs is that the current business model is not sustainable. A professional MOOC costs many thousands of dollars to develop, requiring the services of video crews, post-production crews and others. In addition, a top tier MOOC will have support staff available to assist students with technical problems and moderate discussion forums. Since most MOOCs are free, there is no place to recover these costs. Even with an added charge for a certificate to help defray the expenses, completion rates are so low the extra revenue is not significant. It will be essential that this issue be addressed in future iterations of the MOOC concept, or the MOOC as we know it could become extinct (Burd, Smith & Reisman, 2015).

Potential in Developing Countries

MOOCs have the potential to deliver low or no cost education to students in developing countries. This type of opportunity could open many doors for citizens of these countries, and

help lift them out of poverty. However, "the inconvenient truth is that MOOCs have yet to deliver on the promise of radically opening access to higher education, especially in developing nations" (Brown, Costello, Donlon & Giolla-Mhichil, 2015, p 99). It is important to note that all scholars are not in agreement with the introduction of MOOCs into developing countries. For example, Barlow (2014) suggested that by deploying xMOOCs, which were developed far from the learner, we were engaging in a form of neo-colonization. He notes that even well-meaning colonization has a better outcome for the colonial power than the colonized, and that MOOCs could have fewer benefits to indigenous populations than expected.

India is the second-largest market for MOOCs, after the United States. This may be because India is an English-speaking country, and no translation is needed to participate in American MOOCs. India also has the largest population of college-age citizens in the world, but the number of seats in universities is inadequate to serve this population. Even without a recognized credential, young Indians seek to learn on MOOCs, which suggests that credit-bearing MOOCs would be very successful in this market (Khemka, 2013).

MOOCs are also a potential solution to education in Africa. To be effective, the governments of African nations would have to agree on curriculum standards, training and access hubs throughout the land. Additionally, bandwidth availability in the region would need to be improved. This solution eliminates the need for physical university buildings, travel and boarding for students (Oyo & Kalema, 2014).

MOOCs of the Future

It should be expected that MOOCs will continue to evolve and find new ways to transform learning. Sandeen (2013) discussed the MOOC 3.0 era, which moves away from the free and open history of MOOCs toward a more sustainable business model. One trend that is

beginning now is the opportunity to earn college credits, or even an entire degree, by completing MOOC courses. This initiative dramatically changes the cost of earning a degree. For example, Georgia Institute of Technology offers an entire master's degree in Computer Science under the Udacity platform. The tuition for the program totals about $7,000, compared to $120,000 out of state tuition for the same degree offered on their campus (Rybard, 2013).

Arizona State University has created Global Freshman Academy on edX. This program offers a huge discount on a full freshman year of General Education courses. The MOOC based program is $200 per credit, as opposed to $480 to $543 per credit on campus (Straumsheim, 2015a).

Even MIT is participating in this new trend. They are offering the first half of their Master of Engineering in Logistics on the Coursera platform. Successful participants can move on to complete the masters on campus, or may opt to receive a "Micro-Masters" as a credential of completion of the MOOC coursework (Straumsheim, 2015b).

The success of these initiatives will depend on several factors. Universities will have to devise robust methods to ensure that the person enrolled for the courses is the party doing the work. These methods may include proctored examination centers, video authentication during exams, and even using a student's typing patterns to confirm their identity. Success will also depend the number of successful participants, as well as acceptance of the MOOC-based credits in the world inside and outside academia (Billsberry, 2013).

Conclusion

There is no doubt that MOOCs have changed the face of education, even if they have fallen short of some of the targets they set at the onset. It is also clear that the potential of MOOCs to bring quality education to underserved populations, especially in developing

countries, will require modifications of the concept and great investment, but could make a

significant difference in quality of life in these areas. Provision of content in many languages,

local control of content and the agreement to accept coursework for a credential, would go far to

help MOOCs reach their potential to revolutionize education for all.

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