Chapter 11

Improving the Educational Effectiveness of MOOCs by Using Web-Based Information and Communication Technology

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ABSTRACT

Massive Open Online Courses (MOOCs) have proved their cost effectiveness in extending the reach of the traditional classroom education to thousands of learners across the globe. However, many questions have been raised regarding the educational effectiveness of these MOOC models. In particular, the lack of personalization, social interactions, and credibility have been cited as some of the most important factors that create uncertainties regarding the viability of the MOOC based educational models. In the last couple of decades, Web-based businesses including online retailers, electronic marketplaces and online portals have successfully integrated information and communication technology (ICT) led initiatives and evolved to become viable business models. The focus of this chapter is to analyze the challenges of the current MOOC based educational models and suggest how they can adopt ICT tools to transform into MOOC 2.0 - the next generation of MOOCs.

INTRODUCTION

The Internet-led digitization of information-centric goods and services has revolutionized many industries including music, movies, media, communication, and publication. The higher education is one such information dominant sector. The primary mission of the higher education institutions is to create and disseminate knowledge. The core processes through which such mission is accomplished are teaching and research, both of which heavily rely on information. The last couple of decades have witnessed a
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growing trend towards the digitization of the higher education. It consists of a range of initiatives including the digitization of the course content, course websites, learning management systems (LMS) such as Blackboard, online classes and degree programs, online tutoring services, and even micro lectures of Khan Academy. However, none of these initiatives were considered to be the disruptive technology that can alter the way the higher education institutions function. The emergence of massively open online courses (MOOCs) is regarded as one of the most influential developments in the digitization of the higher education which has a potential to transform the higher-education institutes worldwide.

MOOCs are defined as free and open access courses that are easily available, without any spatial or temporal barriers, through the Internet to potentially unlimited number of participants. It is widely believed that the first MOOC was developed by Sebastian Thrun and Peter Norvig of Stanford University in 2011, when they offered an artificial intelligence course to more than 150,000 online registrants (Pappano, 2012). The inherent characteristics of MOOCs, i.e. open access, free, easy online availability, and unrestricted reach, have made many higher education stakeholders believe that MOOCs can solve the prevailing problems of the education system including high costs and low efficiencies. The appealing promise of MOOCs has attracted both for-profit and not-for-profit entities to offer MOOC-based education and expand into a multi-billion dollar global higher education market. Top three MOOC providers include nonprofit eDX, founded by Masschusetts Institute of Technology (MIT) and Harvard University and for-profit Coursera and Udacity. These MOOC providers have partnered with the higher education institutions, instructors, and corporates to offer thousands of different courses in different fields. As per the latest information available from MOOC tracker class-central.com, more than 500 universities around the world have cumulatively offered or are scheduled to offer 3,530 courses. More than half of these courses are offered through the top three MOOC providers. The interest in MOOCs is quite high among students too. According to the news release by John Hopkins University, the enrollment in its school of public health’s 24 MOOC courses through Coursera has crossed the 2 million mark last year and the enrollees were from 185 countries.

The experimentation with MOOCs has clearly demonstrated the scalability of the educational technology and advantages in cost effectiveness as well as overall efficiency. However, it has yet to show its promise on transformative learning. Indeed, contemporary academic research is still inconclusive about which format of education, online or face-to-face, is more effective for learning. Some of the emerging trends suggest that in its existing form MOOCs may not be suitable for the entire student population. The co-founder of Udacity, Sebastian Thrun, has famously said that ‘the basic MOOC is a great thing for the top 5 percent of the student body, but not a great thing for the bottom 95 percent.’ (Selingo, 2014). Indeed, the current implementation of MOOCs is quite generalized and does not offer personalized solutions to match the learning requirements of individuals. Likewise, given the online format of MOOCs, the lack of social interactions is considered as another major limitation. MOOCs have not yet met the standards by which the traditional higher education is usually evaluated. The effectiveness of the traditional education is evaluated by the graduation rate and MOOCs with an estimated dropout rate of 90 percent (Rivard, 2013) has yet to prove itself as a sustainable business model. MOOCs have also been criticized for the lack of academic integrity and market credibility.

In order to address the challenges of lack of personalization, social interactions, and credibility, MOOCs have to evolve into the MOOC 2.0, the next generation of MOOCs. MOOC 2.0 should be able to provide one-to-one personalized learning solutions, facilitate social interactions, and evolve into a structured program by offering value added educational services to establish broader market acceptance. In the last couple of decades, online business models such as electronic commerce and marketplaces