

## BENEFITS AND CHALLENGES OF MASSIVE OPEN ONLINE COURSES

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### ABSTRACT

*Education trend has changed over the years with easier access, within practical reach to mass learners. Massive Open Online Course or MOOC is one of the most recent innovations in education. It is a form of open source learning system that offers free short online courses to anyone who has accessibility to the Internet. Massive Open Online Courses are available to anyone in the world with a huge number of learners. It offers a lifelong learning opportunity to anyone. This opportunity is made possible by innovation, experimentation and use of technology. This paper outline a brief history of the beginning of the MOOC, different types of MOOC as well as the benefits and challenges derived from offering MOOC from the perspectives of various stakeholders.*

**Keywords:** *Accessibility, Massive Open Online Course, Lifelong Learning, Challenges*

### INTRODUCTION

Massive Open Online Course (MOOC) is a recent development in education scenario. It is defined as a web-based course that is available for free to any participant from any place in the world (McAuley, Stewart, Siemens, & Cornier, 2010; Kop, Fournier, & Mak, 2011). Free access to high-quality learning materials offered by Ivy League universities such as Harvard, MIT, Stanford University, University of California at Berkeley and such other institutions is possible through MOOCs. The European Association of Distance Teaching Universities (EADTU) defines MOOCs as “online courses designed for large numbers of participants, accessible anywhere by the Internet, open to everyone without entry qualifications and offer a full/course experience online for free”.

A distinguishing feature of a MOOC is that there is no course fee imposed on learners (though a fee is often charged when a MOOC is offered with certificates). MOOCs can be offered as courses of study not programs to learners (Muñoz, Punie, Dos Santos, Mitic, & Morais, 2016). Another distinguishing aspect of MOOC is its scalability (Porter & Beale, 2015). Stewart (2010) stated that “a MOOC is an online course with free and open registration, publicly-shared curriculum and open-ended outcomes”. A commonly agreed definition of MOOCs is “online courses designed for large numbers of participants, accessible by anyone anywhere as long as they have an internet connection, are open to everyone without entry qualifications, and offer a full/complete course experience online for free” (Jansen & Schuwer, 2015).

## BRIEF HISTORY AND CONTRIBUTORS OF MOOCs

The first MOOC started in the year 2008 was introduced by George Siemens and Stephen Downes with course title and code: Connectivism and Connective Knowledge (CCK08). This course is recognised as the first MOOC. The movement in offering MOOC spread to Europe where two major autonomous MOOC projects were initiated: OpenupEd and FutureLearn. OpenupEd is an open, non-profit partnership offering MOOCs that contribute to open up education for the benefit of individual learners and the wider society (OpenupEd, 2015). OpenupEd was launched in year 2013 by EADTU in collaboration with the European Commission. This project did not involve the design of a new MOOC platform but rather it aimed to provide accessible and flexible online higher education, specifically for Europe in order to contribute to the modernization of higher education through the provision and services of its partners. Currently, it offers 190 courses in several languages with partners from 11 European Union (EU) countries (France, Italy, Lithuania, the Netherlands, Portugal, Slovakia, Spain and the UK) and 3 countries outside of the EU (Russia, Turkey and Israel) (OpenupEd, 2015).

Futurelearn is a private company owned by the Open University with 90 local and international partners including the British Library, the British Council, the British Museum, the National Film and Television School and 21 of UK's best universities. Futurelearn started their first course in September 2015. FutureLearn offer their courses on mobiles, tablets and desktops (FutureLearn, 2015). According to Jansen and Schuwer (2015), European institutions are more involved in MOOCs as compared to USA counterparts. More importantly, institutions in Europe are increasingly developing a positive attitude towards MOOCs and have positive experiences for the added values of MOOCs. The number of MOOCs has increased significantly in Asia as well; a sign indicating the MOOC scenario has yet to peak.

## DIFFERENT TYPES OF MOOCs

Behaviourism, cognitivism and constructivism are the three broad learning theories most often utilised in the creation of instructional environments (Siemens, 2005). Technology has enriched the learning environment with the use of digital media and its integration into formal learning contexts causing a shift towards personalised learning. Siemens (2005) also highlighted some significant trends in learning. These include: (i) the move into a variety of different and possibly unrelated fields; (ii) increasing significance of informal learning; (iii) recognition of learning as a continuous process; (iv) increasing attention to knowledge management (creating a link between individual and organisational learning); and (v) the understanding of where to find knowledge becoming as important as know-how and know-what. Siemens (2005) introduced a new alternative theory coined as connectivism, an integration of principles explored by complex self-organization theories. As a result, early MOOCs are referred to as cMOOCs are based on the principles of connectivist educational pedagogy which focuses on the power of networking and connecting with other individuals, sharing varied opinions from all around the world as the foundation of learning as its aim. Learners use digital platforms such as blogs, wikis, and social media platforms to make connections with content and learning communities to create and construct knowledge. Chamberlin and Parish (2011), reinforces this idea by stating that usually all the work (readings, discussions, repurposing of materials and more) in a course is shared with everyone else. The more engaged the learner is within the course, the more he will learn. cMOOCs offer networked content whereby participants are encouraged to organize themselves and make progress in a collective constructivist manner (Barcena, Martin-Monje, & Read, 2015). Learners are able to build their own networks via blogs, wikis, Google groups, Twitter, Facebook and other social networking tools outside the learning platform

without any restrictions from the teachers in cMOOCs (Yousef, Chatti, Danoyan, Thús, & Schroeder, 2015). Participants in cMOOCs take dual roles as both facilitator as well as learner as they share views and opinions with each other; hence learning is engaged through experiences and discussions.

A slightly different format of MOOC termed as xMOOC, is based on a more traditional classroom structure where pre-recorded video lectures with quizzes, tests, or other form of assessments are incorporated. xMOOC is centred on the facilitator instead of the learners' community. Pre-recorded video lectures and scalable forms of assessments are provided to learners who can interact in a single platform rather than creating and/or sharing distributed content on the Web outside the platform. Many xMOOCs substitute video lectures for the traditional lecture format and provide automated exercises and quizzes along with opportunities to interact with fellow students and the course instructor using discussion boards or chat functions (Porter & Beale, 2015). xMOOCs are largely offered by MOOC providers such as Coursera and Udacity. These MOOCs are intended for large scale course delivery (Porter & Beale, 2015). Other well-known providers of xMOOCs are Open edX, Open2Study, iversity, Swayam and jMOOC (by Open University of Japan). In Malaysia, a popular MOOC platform provider is OpenLearning. There are also hybrid MOOCs known as project based MOOCs or pMOOCs (Commonwealth of Learning Report, 2015) which the European Union have launched. Canada offers LMOOCs whereby local open online courses aim to attract large number of students to courses structured around locally relevant subjects (Porter & Beale, 2015).

Siemens (2005) stated that cMOOC focuses on creating knowledge, while xMOOC focuses on duplication of knowledge. Therefore, despite cMOOC and xMOOC sharing the goal of providing open and free (or minimal cost) education to the public, both have distinctly different structures and qualities. Both require distinct course designs in order to achieve the learning objectives of MOOCs.

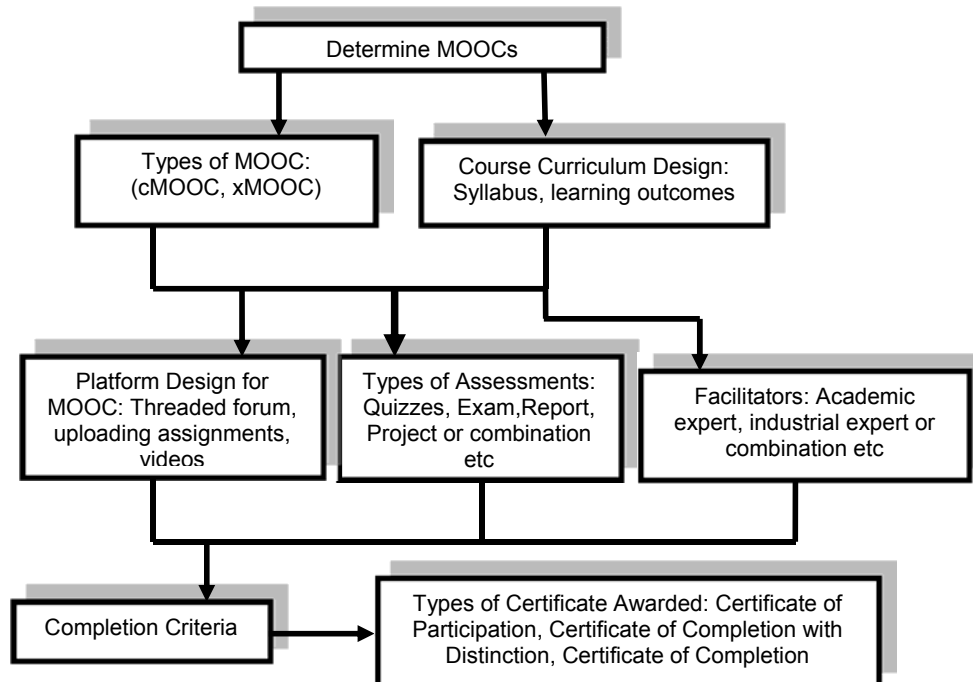


Figure 1: MOOC Design Flowchart

## CURRENT DEBATES ON THE BENEFITS OF MOOCs

There are many benefits that institutions can derive from offering MOOCs. According to Jansen and Schuwer (2015), European institutions offer MOOCs to reach out to new students and creating flexible learning opportunities. This is in contrast for many US institutions that offer MOOCs to increase institutional visibility and drive student recruitment. The media often sees MOOCs as a new trend in education that with such publicity the institutions hope that they not only target alumni but go beyond traditional markets for wider participation and obtain marketing gains (Jenner & Strawbridge, 2015). In line with this, many institutions offers MOOC as an opportunity of learning about online pedagogy (Jansen & Schuwer, 2015). Many institutions see this opportunity as a way of pioneering new platforms (Jenner & Strawbridge, 2015) and offering interdisciplinary courses (Prades, Palau, Granados, deCallataÿ, & Moureau, 2015) to further enhance their reputations. MOOC is an innovation which drives many institutions to create international collaborations (Jenner & Strawbridge, 2015) for capacity building. Thus, strengthening the quality of courses offered by respective institutions (Pscheida, Hoppe, Lißner, Sexauer, Müller, & Koehler, 2015) in the hope to attract promising international applicants for their programmes is vital for MOOCs.

Support for MOOC lies in the possibility of providing access to quality education at which only a limited number of individuals have had access till now (Andone, Mihaeus, Ternauciuc, & VasIU, 2015). Thus, encouraging open education (Jenner & Strawbridge, 2015). For institutions, MOOC also offers a way to create meaning from learning analytics in various aspects such as monitoring, analysis, prediction, intervention, tutoring/mentoring, assessment, feedback, adaptation, personalization, recommendation, awareness and reflection (Yousef et al, 2015). MOOC creates networked communities of practice that encourages the sharing of teaching practices through blogging, tweeting and status updates by teaching staffs (Kilgore, Bartoletti, & Al Freih, 2015). As such it allows reflection among practitioners which is a key ingredient of effective professional development (Kilgore et al., 2015).

MOOC allow practitioners to experiment with pedagogy such as integrating it with an on-campus courses resulting in shared opinions and discussions from different parts of the world and/or by using flipped classrooms (Docq & Ella, 2015). Benefits of MOOC for on-campus students are when such students take up MOOC as an interactive and innovative way of learning (Roland, Uyttebrouck, & Emplit, 2015). Meanwhile off-campus students can pride themselves belonging to the top universities or on continuing lifelong education virtually (Roland et al, 2015). Many students participate in MOOCs to enhance their personal development (Malca, 2015) and develop specific skills. MOOC has been heralded as part of a national agenda in the education policies for many countries.

## CHALLENGES OF MOOC

Although MOOC is a trend in education now, it has its own set of challenges to overcome and to ponder on. Education involves various teaching and learning aspects such as teaching methods, pedagogical theories, relevance of active learning and changing need of face-to-face learning in the digital age. Two main challenges that a MOOC face are the high non-completion rates (high drop-out rate) and the pressure on institutions to reduce costs. MOOCs rely heavily on the use of technologies to ensure the accessibility of information and knowledge. This emphasise the need for facilitators to be competent in the usage of digital instructions and technologies. This causes the courses to be outsourced to external academicians while allowing administration personnel to increase and thus the relative administrative cost to rise (Houston, 2013).

MOOC curriculum design needs high attention in order to meet the learning outcomes of the course and the usage of video lecturers to engage the learners. The video needs to be of cultural sensitive and clear language audio. Learners may face difficulties in following the video lecture especially without any subtitles as facilitators may speak with its own accent (Chiam & Abu Kassim, 2015). Another aspect that MOOC providers are concerned with is the quality of the videos and video players such as downloading speed, modifying and provision of transcripts that are vital in making the videos usable by students (Mihaescu, Andone, & Vasiiu, 2016). Additionally, most MOOCs are in English, which consequently excludes non-English speakers from studying it.

Student dropout is a concern among all MOOC providers. Empirical evidences show that only a small proportion of enrolled participants complete the course (Ho, Chuang, Mitros, & Pritchard, 2015; Koller, Ng, Do, & Chen, 2013). Quantitative indicators such as completion and dropout rates can be argued as just one measure of a course success. Others have argued that the key focus should be on meaningful and substantial learning (Hadi & Rawson, 2016, Hadi & Gagan, 2016). Colman (2013) suggested that peer to peer feedback is a controversial issue in MOOC pedagogy and is found to be one of the reasons students drop out. Studies also show that typical MOOC learners are working full time professionals (Morris, Hotchkiss, & Swinnerton, 2015; Neuböck & Kopp, 2015). Therefore, it is logical to assume that a high drop-out rate from learners in MOOCs is partially attributed to the learners' demanding work schedule and time constraints as finding time to learn is very challenging (Malca, 2015). Participants in an open forum with overwhelming interactions may also find it an extremely noisy and daunting environment (Röthler & Creelman, 2016).

MOOCs have been blooming and most universities are attempting to offer MOOC courses so as to remain relevant. There lies a question whether the university or its stakeholders are ready for MOOCs. More studies and research in the following aspects regarding MOOCs are therefore necessary:

- MOOCs-readiness
- Quality Assurance
- Educational Technology and Engagements
- Learning Cultures
- Instructional Design
- Sustainability and Implementation
- Learning Analytics

Can MOOCs destroy universities? This is a concern raised by many educators. It is best to look closer at how these courses are actually being offered by the universities amidst the pressure to reduce operating cost while generating additional income. MOOC is able to promote universities by creating pathways for completed MOOC learners to gain entry to the university programmes. A well-thought curriculum design in developing a MOOC is therefore necessary. There is a need to emphasise the importance of the course design with appropriate assessment format and load, without compromising the quality of the course. In addition, there is a need for an effective facilitator to be in a threaded forum to ease the tension that tends to rise among participants as the forum can be "noisy with voices".

## CONCLUSION

MOOCs offers several benefits: increase instructor leverage, student throughput, student mastery, student engagement, offer students (especially postgraduate students) opportunity to learn key disciplines, facilitate coaching of concepts and tools, and serve as bridging courses. The concerns are raised as many aspects of traditional classes do not work in a MOOC, such as small-group discussions and face-to-face time with instructors. However,

Instructional design can play an important role in effective online pedagogies involving interactive activities and engaging discussions in MOOCs. Student-centred activities can also lead to a better engagement. Despite the challenges that have been highlighted, MOOC can create opportunities in education for all.

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