



THE EVOLUTION OF MOOCS AND A CLARIFICATION OF TERMINOLOGY THROUGH LITERATURE REVIEW

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Abstract

Massive Open Online Courses (MOOCs), which are based in approach that offers online courses to great masses in an open and free manner, are a recent trend in distance education and are still under debate. MOOCs developed as an extension of the OER movement, changing and transforming in recent years despite retaining certain aspects. This research follows MOOCs, the buzzword of 2012, in an attempt to study the reasoning behind the recent questioning of their effectiveness. Additionally, the evolution of MOOCs is traced, and new MOOCs with new acronyms are portrayed.

Introduction

Advances in information and communication technologies are forcing educators and learners to break the constraints of time, space, and environment (Lin, Lin & Hung, 2015). While traditional classroom education is well-known, learning systems outside the classroom, especially those enhanced through technology, are still being discussed (Brahimi & Sarirete, 2015). As a disruptive technology (Conole, 2013), and as a recent popular buzzword (Chen, 2014), 2012 was selected *The year of the MOOC* (Pappano, 2012) by the New York Times.

MOOCs are web pages that provide free and high quality educational content cleansed of geographical and time limitations to learners regardless of their physical locations and educational backgrounds (Lin, Lin & Hung, 2015). MOOCs represent the final stage in distance education as they offer open educational resources to students all around the world (Zhou, 2016). In this study, the OER approach and MOOCs as an extension of it are introduced. This is followed by a determination of the threats and limitations directed at MOOCs, resulting in the reasoning behind the emergence of new MOOC variants. An observation was made concerning a significant gap in the literature of the field regarding studies concerning new age MOOCs. In an attempt to reduce the terminological clutter of the field, information is provided regarding the most common MOOC variants. Localized projects and research along with case studies were excluded from this study.

From OER to MOOCs: xMOOCs and cMOOCs

Technological developments take place in cumulative processes. The term *MOOC* was also phased through various evolutions before maturing. Ozturk (2015) states that MOOCs gained prominence through the OER movement. In 2001, the Massachusetts Institute of Technology

pioneered OpenCourseWare (OCW) initiative provided open access to course materials on the web to everyone, while the use, modification and redistribution of these materials were licensed (Liyaganawardena, Adams & Williams, 2013). The term OER was first adopted in the 2002 United Nations Educational Scientific and Cultural Organization (UNESCO) forum (Lin, Lin & Hung, 2015). The open access approach played a key role in the development and direction of MOOCs.

Studies exist regarding the relationship between the first cMOOCs and PLE/PLN environments, which spread with the narrative of open access and personalization (Gillet, 2013; Kop, 2011). From open access to open educational resources, and recently when MOOCs are taken into account, the term *openness* has gained momentum in higher education institutions (Yuan & Powell, 2013).

Following OER, the first MOOC was introduced in 2008 (Yuan & Powell, 2013). MOOCs are designed to be scalable to large online masses with free participation and without any formal requirements (Barnes, 2013), and provide millions of individuals around the world the opportunity to learn through hundreds of public and private universities or organizations worldwide (Margaryan, Bianco & Littlejohn, 2015).

The first MOOC was “Connectivism and Connective Knowledge (CCK08)” in 2008 by George Siemens and Stephen Downes at the University of Manitoba, with 2200 participants from around the world, which was designed on the cMOOC model (Margaryan, Bianco & Littlejohn, 2015). First generation MOOCs were connectivist, student-driven, chaotic, and open-ended (Fini, 2009). These kinds of MOOCs are called cMOOCs. cMOOCs have continued throughout the years through examples such as CCK08 (2008), PLENK2010 (2010), MobiMOOC (2011), EduMOOC (2011), Change11 (2011/12), DS106 (2011/2012), and LAK12 (2012) (Rodriguez, 2013). The cMOOC and xMOOC terminology was coined by Stephen Downes to differentiate connectivist MOOCs from others (Rodriguez, 2013). Unlike cMOOCs, xMOOCs or AI-Stanford like courses are based on cognitive-behaviorist and social constructivism approaches, and are web pages in which the instructor provides courses to a large number of learners through video courses (Rodriguez, 2012). Compared to cMOOCs, xMOOCs follow a more traditional understanding, and are less interactive due to the high number of students. The most well-known examples of xMOOCs are Coursera, Edx, Udacity, Futurelearn, Codecademy and Udemy.

The fall of MOOCs and emergence of new MOOC variants

MOOCs represent the final stage in the educational revolution, offering open educational resources to every student around the world (Zhou, 2016). However, since MOOCs became mainstream in 2012, their completion rates remain a highly debated subject. Jordan (2015) states that completion rates range from 0.7% to 52.1%, and the median value is 12.6%. Another source indicates that the completion rate for MOOCs is fewer than 10% (Daniel, 2012). Chen (2014) indicates the reasons behind MOOCs losing popularity are questionable course quality, high dropout rate, unavailable course credits, ineffective assessments, complex

copyright, and limited hardware. Schuwer et al. (2015) determined through their analysis of literature that macro level threats towards MOOCs were lack of recognition and accreditation, worries about quality, missing evidence and data, too much regulation, hindering innovation, lack of institutional strategies for integrating MOOCs, sustainability and costs, and inequality in access. Micro threats were determined to be the high dropout rate and low completion rate.

The reduction in favour for MOOCs and loss of popularity has caused the development of different variants. The literature in the field indicates that the most discussed of these is SPOCs (Small Private Online Courses). Evidence of this trend may be seen in the Horizon Report, which makes predictions regarding trends in educational technologies. The Horizon Report from 2013 which predicted “Massively Open Online Courses” (Johnson et al., 2013) changed into the basic approach of SPOCs – *Flipped Classroom* – in the Horizon Report of 2015 (Johnson et al., 2015).

Many other acronyms for MOOC variations appear in the literature of the field. Despite certain studies attempting to provide a classification in the field for this issue (Balula, 2015; Chauhan, 2014; Hoorn & Schuwer, 2014; Naert, 2015; Sanchez-Gordon & Lujan-Mora, 2014; Souto-Otero & Shields, 2015), they appear to lack detail. This study provides information regarding new age MOOCs and their variants, which have emerged due to the diminishing trend of traditional MOOCs. The in-depth literature review conducted for this study revealed 20 new MOOC variants.

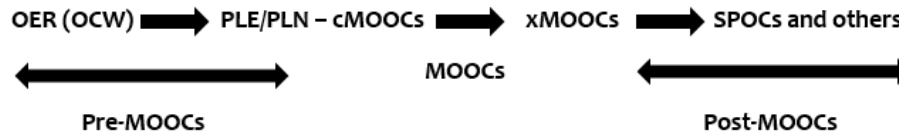


Figure 10. The Continuum of MOOCs

Small Private Online Course (SPOC)

As a result of the increase in student quantity, and the questioning of teaching quality of MOOCs, universities have begun new trends in the post-MOOC age and developed new approaches termed SPOCs (Delgado-Kloos et al., 2015). SPOCs follow the flipped classroom model (Combefis et al., 2014). Through the educational use of SPOCs, students can learn at their own pace, and revisit video courses. They can check on their development through quizzes at the end of videos. Teachers can also evaluate students and measure their skills in a better manner in accordance with the flipped classroom model (Martínez-Muñoz, & Pulido, 2015). Fox (2013) compared MOOCs with the SPOC model and found that enrolment was quadrupled with in SPOCs. Utilizing MOOC material in a SPOC format is a key role in the efficiency of the educational process.

Big Open Online Course (BOOC)

BOOC was first introduced in 2013 by open and free courses initiated with 500 participants at the University of Indiana (Hickey, 2013a). The greatest advantage compared to MOOCs is the possibility for interactive courses by limiting the number of participants to 500 individuals (Sanchez-Gordon & Lujan-Mora, 2014). Hickey (2013b) indicates that the reason for using “big” rather than “massive” in the definition is due to systems not being prepared for the “massive”. Google has provided support for this University of Indiana initiative through Google Course Builder, imbuing further interactive features and providing the opportunity to integrate smaller courses into larger ones. The wikifolio format used in BOOC systems utilize peer-commenting, peer-endorsement, and peer-promotion strategies (Hickey, 2013b). In these courses, the understanding is that the interactive learning environment provided to 25 students may also be applied to 500 students without issue, and as such in addition to wikifolio(s) they utilize peer assessments, formal on-demand assessments, and digital badges (Hickey, 2013a).

Classically Offered Online Classes (COOC)

COOC is a model in which courses are 100% online, which aims to increase quality by focusing on reducing educational costs. In this model the aim is to develop a new model by combining the traditional classroom education model with the strengths of online learning. The fundamental difference between this model and MOOCs is the ambiguity of the concept of openness (Hoom & Shuwer, 2014; Horton, 2013).

Community Open Online Course (COOC)

COOCs are courses focused on group and community work, in which each individual contributes to the course, ensuring that deciding what and how to learn is made easier. COOCs are based on the notion that education cannot be effective if it is limited by universities and other educational institutions, and made rigid by standardization and accreditation, and should instead be based on the concept of personal development wherein learning should be shaped by the curiosity and enthusiasm of individuals (Fraser, 2015).

Digital Open Courses at Scale (DOCS)

Kim (2015) indicates that in DOCS, the terms *open* and *course* remain identical to MOOCs, while *online* is replaced by *digital*, and *massive* is replaced by *scale*. The reasoning behind the use of the word *digital* lies in the fact that courses may be offered through mobile applications rather than through web browsers, and as such the course content may be followed not only via computers, but also using smartphones. The switch from *massive* to *scale* is said to underline the quality of the community and learning process rather than the sheer number of participants.

Distributed Online Collaborative Course (DOCC)

These courses developed in collaboration with FemTechNet (2013) participants are based on feminist pedagogy and networked learning, and have been adopted by many higher education institutions in the U.S.. The model for the course is based on the principles of distributed learning, knowledge building, and networking (Chauhan, 2014). One aspect in which they differ from MOOCs is that the learning process is distributed and collaborative, where knowledge is not passed on through transmission, but rather established through a process of circulation (Juhasz, 2013).

Game-based Massive Open Online Course (gMOOC)

The reason gMOOCs are called next-gen MOOCs (Jones & Singer, 2014) is that they focus on games and game based learning subjects in MOOCs. Using games, gMOOCs cover complex social objects in virtual gaming environments. They solve real problems in a meaningful way through gamification. gMOOCs stand firmly against older educational systems and claim that the true potential of the learner and instructor can be realized through writing and rhetoric based on meaningful, social, and direct knowledge production (Jones & Singer, 2014).

Hybrid Open Online Course (HOOC)

The HOOC model applied by the University of Pittsburgh offers courses both online and onsite simultaneously. Online and onsite students may participate in sessions synchronously, they may tweet, and they may share their ideas through other discussion applications (Brown, 2015). In HOOCs, focus is gathered on interaction by establishing a bridge between on-campus classes and online classes (Negrea, 2014).

iMOOC

In addition to incorporating established MOOC elements, iMOOCs utilize a hybrid learning model in which Moodle and Elgg learning platforms are integrated. The pilot studies for iMOOC were conducted at the Universidade Aberta (UAb), and it was the MOOC with the highest number of participants conducted in Portuguese. The most significant aspect of the iMOOC approach is the ensuring of a high level of transparency throughout the learning process. Registration is only required on an institutional level, and all content other than registration is available for open access. It is based on both xMOOC and cMOOC principles (Rocio et al., 2015).

Little Open Online Course (LOOC)

The University of Maine at Presque Isle endeavoured to offer small scale high touch open courses, and has started offering its first courses through the LOOC approach, also known as the little brother of MOOCs. These courses are anti-massive, based on a high level of feedback from the instructor, and pave the way for formal credits. Unlike MOOCs, these courses offer personalized feedback and are more localized, smaller scale applications (Kolowich, 2012).

Local Access Points (LAPs)

The LAPs approach is defined as a type of post-MOOC that increases interaction by physically connecting learners and instructors from a local presence perspective in addition to incorporating videoconferencing, collaborative learning, virtual learning environments, cloud based learning, and rapid feedback (Dominique, 2013).

Local Open Online Course (LOOC)

LOOCs are courses directed at students and teachers in local universities, along with local industries and communities, which aim to effectively utilize social media. They were derived from the lack of coverage by MOOCs and SPOCs. LOOCs not only offer video courses, but ensure all participants in a region are able to meet each other, share information, and collaboratively design the courses (Qarabash & Olivier, 2014).

Massive Open Online Research (MOOR)

As another MOOC variant, the MOOR model was first applied to the Bioinformatic Algorithms course at the University of California (Chauhan, 2014). It is a new MOOC variant that allows academics from different countries, along with learners from different countries and cultures to conduct research together on a global scale (Haider, 2013). In other words, MOOR is the researched focused variant of MOOC (Hosler, 2014).

Micro Open Online Course (mOOC)

The OER Foundation for the OER University (OERu) in collaboration with the e-Learning Research Lab at the University of Canterbury designed a system named SP4Ed. The key characteristic of this case study is that learners are offered connectivist based courses through a small course prototype (Mackintosh, 2015).

Quality/Qualification Massive Open Online Course (qMOOC)

qMOOCs offer an educational framework based on quality and qualification. Three educational paradigms must be achieved in qMOOCs: deep learning experiences, problem-focused education, and 3D virtual immersive environments. The most prominent example of qMOOCs is the MOOCAgora application. In qMOOCs, formal academic degrees are not a primary concern (Mystakidis & Berki, 2015).

Selective Open Online Course (SOOC)

Shimabukuro (2013) specifically compares SOOCs to SPOCs, and indicates that while SPOCs may not always be private, SOOCs may prove more effective than SPOCs. SOOCs are based on the notion that MOOCs and SPOCs must be different and innovative compared to traditional online courses by being more selective. While everyone should be able to apply to a course and no participant limit should be imposed, enrolment should be limited. SOOCs are thus free, but smaller scaled compared to MOOCs (Shimabukuro, 2013).

Self-Paced Online Course (SPOC)

SPOCs are flexible, open access, online courses allowing the opportunity for independent study in which students may complete lessons whenever they choose and at their own pace (Bogner, Dodd & Rash, 2013).

Social Massive Open Online Course (ECO sMOOC)

The *s* prefix in this MOOC variant refers to *social* in that these types of MOOCs incorporate a greater degree of social interaction and participation; while the prefix is also considered to refer to the term *seamless* in that the courses are accessible from different platforms and may be integrated in real life experiences. Compared to MOOCs, focus is placed on the concepts of equity, social inclusion, quality, diversity, autonomy, and openness. These courses see more frequent application in Europe (Morgado et al., 2014).

Synchronous Massive Open Online Courses (SMOC)

SMOCs aim to achieve the instruction of a high number of student groups with a real time online classroom approach. To this end, SMOCs aim to increase student participation, strengthen the sense of community among students, and establish the classroom sensation through synchronous lessons (UTNews, 2013). The most recent SMOC example from the University of Texas at Austin was conducted with a 10,000-student limit. Instructors offered courses through an xMOOC model by applying techniques such as adaptive learning, group chats, live lectures, online readings, and classroom discussions (Chauhan, 2014). Anyone could attend a lesson conducted on certain days by paying a predefined fee. Learners are not static, but rather in a state of interaction throughout the semester (Straumsheim, 2013).

Vocational Open Online Courses (VOOC)

VOOCs are an approach that is defined by bite-sized training, wherein completion of the course takes approximately 1 hour (Virtual College, 2015). VOOCs differ from MOOCs through different target audiences, different requirements, and different vocational pedagogies. VOOCs aim to provide quick, cheap, easily utilized, scalable, low cost vocational skills (UFI, 2015).

Conclusion

This study analyzed MOOCs and their variant post-MOOCs, derived from the openness movement and OER. Various explanations were provided regarding new acronyms which emerged in the post-MOOC era. The reasoning for this study was the gap in literature regarding a detailed study of this scope. The characteristics of 20 new MOOC variants were portrayed. Despite the literature in the field encompassing other variants and acronyms beyond the 20 examples in this study, such as Regional Open Online Course (ROOC), Massive Open University Course (MOUC), Personalized Open Online Course (POOC), Massive Open Online Discussion (MOOD), the lack of sufficient or reliable sources and detailed information on such acronyms required their exclusion from this study.

Within the scope of this study, it was determined that while certain new age MOOC variants incorporate very similar methods and approaches, they utilize different acronyms. Some examples were portrayed to have new and innovative ideas compared to MOOCs. Additionally, it was determined that some MOOCs have varying degrees of prevalence in different countries and regions.

The key finding of this study is that MOOCs are variable, adaptable and flexible systems, and a continuation of the permutations of names and acronyms is predicted.

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