MASSIVE OPEN ONLINE COURSES AND DISTANCE LEARNING EDUCATIONAL TOOLS FOR HIGHER, DEVELOPMENT AND CONTINUING EDUCATION IN DIGITAL INFORMATION SOCIETIES

Khalil Alsaadat[i]
Department of Educational Policies,
College of Education,
King Saud University,
Riyadh, Kingdom of Saudi Arabia

Abstract:

The continuing maturity of online learning is one of the major educational advancements of the 21st century. Massive Open Online Courses (MOOCs) represent one of the most recent evolutions within this domain, in which courses from a range of institutions, including elite universities, are made open and freely accessible to the world. These courses are designed to engage large numbers of participants who commonly self-organize their involvement according to their skills, objectives, previous knowledge and shared interests (Liyanagunawardena et al, 2019). This paper is an integrated theoretical review about Massive Open Online Courses and distance learning.

Keywords: massive online learning, massive open online courses, distance learning

1. Introduction

Today, digital information is everywhere and available to almost everyone. In this era of information technology. Although some forms of information technology have already been utilized to assist instruction, traditional teaching methods required that teaching and learning should take place at the same time and place. Online learning, also called internet-based learning or web-based learning, does not have the time and space limitations, and therefore, makes teaching and learning separable via internet-based information delivery systems. Both online and offline teaching have been widely used in higher education. The use of online learning has vastly increased since 2012, as evidenced by the thriving of massive open online courses (MOOCs). However,

---

[i] Correspondence: email alsaadat@gmail.com

evaluating the effectiveness of online and offline teaching remains difficult. Evaluations have failed to reach consistent conclusions (Pei, Wu, 2019).

The term MOOC was coined in 2008 by Cormier ,2008, to describe the mode of delivery of a course: CCK08 – Connectivism & Connective Knowledge. Since then, the nature and impact of MOOCs has been widely studied in the academic literature and beyond. Daniel (2012) identified the term MOOC as *the educational buzzword of 2012*" (Liyanagunawardena et al., 2019).

2. Prior Research

Barbera and Clara (2013) discussed the connectivist conception of learning in Web 2.0 environments, which underpins the pedagogy of what are known as cMOOCs (connectivist massive open online courses). They argue that this conception of learning is inadequate and problematic, and they propose that cultural psychology is best suited to address the explanatory challenges that Web 2.0 poses on learning, and therefore, it is also best suited to provide massive open online courses with more adequate and less problematic pedagogy. They suggested two initial and general pedagogical principles based on cultural psychology upon which to begin building this new pedagogy for massive open online courses (Barbera and Clara, 2013).

Reeves, et al. (2017) investigated the distribution of incentives (e.g., certificates, badges) for massive open online course (MOOC) completion, and relationships between incentives and MOOC outcomes. Participants were 779 MOOC students internationally who participated in at least 303 different MOOCs offered by at least 12 providers. MOOC participants most commonly intended to receive, and in actuality received, free and paid course certificates of completion; other incentives (e.g., digital badges, postsecondary credits) were far less common. In addition, MOOC participants' intentions to receive both free and paid certificates were consistently and positively related to perceived learning and course completion, net other factors (Reeves et al, 2017).

Olsson (2019) suggests that the conditions for higher education teachers operating in a technology-enhanced education setting and an open educational context – such as Massive Open Online Courses (MOOCs) – are different when compared to traditional teaching methods (e.g. in a lecture hall). This study investigates the grounds for 20 teachers at Swedish Higher education institutions to be involved in MOOC development projects. Six categories are found and described; including curiosity, merits, teaching development, flexibility, as well as the possibility to disseminate their research and expand their professional networks. Interviewees believed that the work was a viable way to strengthen their research portfolio, while also making a limited effort for teaching, enhancing the dissemination possibilities and strengthening their research networks (Olsson, 2019).

Tobias, et al. (2020) emphasizes the fact that the relationship between pricing and learning behavior is an important topic in research on massive open online courses (MOOCs). They report on two case studies where cohorts of learners were offered

coupons for free certificates to explore how price reductions might influence behavior in MOOC-based online learning settings. In Case Study 1, they compare participation and certification rates between courses with and without free-certificate coupons. In the courses with a free-certificate track, participants signed up for the verified-certificate track at higher rates, and completion rates among verified students were higher than in the paid-certificate track courses. In Case Study 2, we compare learner behavior within the same courses by whether they received access to a free-certificate track. Access to free certificates was associated with lower certification rates, but overall, certification rates remained high, particularly among those who viewed the courses. These findings suggest that some incentives, other than simply the cost of paying for a verified-certificate track, may motivate learners to complete MOOCs (Tobias, et al., 2020).

Gloria and Uttal (2020) affirms that proposing cumulative and integrative processes for an online course development, this paper addresses six core considerations when shifting from a face-to-face to a blended to an online class in three academic semesters. Considerations address real-time face-to-face interaction, lecture structure, instructor presence, learning objectives, course assessment, and transforming the Learning Management System into a teaching tool. The paper concludes with a discussion of lessons learned which include managing unrealistic expectations, remembering that students are technologically diverse, consulting with instructional designers and other online faculty, and planning forward for a three semester process for the design and development of an online course (Gloria and Utall, 2020).

Prior research showed as Olsson (2019) mentioned that the combination of digital content and globalization of higher education is influencing the teachers' work. This influence is argued to have profound implications for all aspects of higher education. Teaching has become interrelated both internationally due to globalisation, and internally due to technological infrastructure and increased professional involvement in the production of course material. The learning content has to some degree been separated from the teacher and, at the same time, has generated questions about ownership of the teaching material. The global trend to develop and provide open courses has increased. All these changes have influenced the teaching profession and many teachers' daily work (Olsson, 2019).

3. Theoretical Review

The related concepts are E learning and M learning. E learning can be broadly defined as content designed for access through electronic communication, such as the Internet, intranets, digital versatile discs, and synchronous, and asynchronous modules. M-learning carries the idea of e-learning a step further by adapting its content to handheld devices such as iPods (a digital audio and storage device from Apple Corporation), personal digital assistants, and smartphones. The main objective of m-learning is to provide the learner the ability to assimilate learning anywhere and at any time. In the 90s, mobile learning was part of what defined eLearning. Electronic devices supported

the instruction. As technology becomes more sophisticated, smaller, and increasingly portable, and learners increasingly adept at mastering it, the relevancy of m-learning in the world of education has increased. M Learning has now evolved into a discipline of its own. Corporations and educational facilities have recognized the need for this emerging method of instruction, (Crescent, Lee (2016) in Alsaadat, (2017)).

Distance learning is a structured set of means and procedures which provide the appropriate methodology so that students can define the place, time and pace of their study by themselves (Lionarakis & Lykourgiotis, 1999). The teleconference is used as a distance learning tool, in secondary and mainly in higher education and in adult education training as well, in the framework of educational applications and connection programmes between educational organizations (Armakolas, et al., 2018).

Higher education teaching has evolved into new forms of teaching, characterized by the use of information technology (IT) and various degrees of openness. Generally speaking, all current teaching methods have some sort of IT element, and many MOOCs have been developed by higher education institutions (HEIs) in the last ten years. The conditions for the teachers operating in this technology-enhanced education, and open educational context, are different when compared to traditional teaching (i.e. in a lecture hall). Teachers are required to embrace IT and allow their teaching to be more open, which requires the ability to be scrutinized by colleagues and society outside of the campus. The teachers' engagement in this area cannot be taken for granted (Olsson, 2019).

Since 2012, there has been a huge growth in the number of MOOCs worldwide, stimulated largely by the emergence of the popular MOOC platforms edX, Coursera, Udacity and FutureLearn (Yuan & Powell, 2013). The courses themselves are developed by institutions, organisations and individuals, and cover a broad range of disciplines and levels. There are many MOOC providers and several aggregator services that bring together courses from several providers in one place. This gives prospective participants the ability to find courses offered by providers in one place with several search options to find courses via the various categories generated by these aggregator service (Liyanagunawardena, et al, 2019).

In Blackmon (2018) study, Massive open online courses (MOOCs) have been described as purposeful educational resources for teaching, open educational initiatives, competency-based learning, and the like. They have also been described as an agent of higher education's deterioration. Although MOOCs are often discussed in terms of their current and future usefulness, or lack thereof, in higher education contexts, very little data exists on professors' experiences creating and teaching these courses. Therefore, Blackmon (2018) conducted a qualitative study, more specifically a phenomenography, to examine professors' experiences with developing and teaching a MOOC. Data include their thoughts on why they decided to teach a MOOC and the benefits and challenges associated with making and teaching a MOOC (Blackmon, 2018).

Noroozi et al (2018) thought that with the advancement of educational technologies, online learning environments can be designed for the realization of peer

feedback which has both informational value for supporting writing and learning, and motivational value for stimulating students' efforts. The benefit of online peer feedback over traditional peer feedback is that students are able to present and submit their contributions and also re-review learning partners' submissions in a more structured way, without restriction. Online peer feedback settings allow for the implementation of various types of scripts and scaffolding peer feedback processes that can guide learners towards a desirable mode of and argumentation interaction. Furthermore, it provides students with the flexibility to modify their feedback through the learning processes against face to- face and paper-based feedback settings that offer less opportunities for the validity and reliability of peer feedback (Noroozi, et al, 2018).

Distance education, a flexible educational method with specific demands, motivates the learner (pupil and/or student) to exert control over his/her own learning (Andrade & Bunker, 2009; Lionarakis, 2001). On this basis, learner's autonomy is not only required, but also facilitated by the very nature of a distance education environment; consequently, it reveals itself as a main factor for a successful learning process (Furnborough, 2012; Peters, 2000; Santos & Camara, 2010). This led many of the theoreticians of education to study and critically analyse the notion of learner. autonomy in the context of distance education Moore (1993), while developing the theory of transactional distance, defined autonomy as a perceived, experiential learner situation, during which learners take the responsibility of their own learning exerting control over all the phases of the educational process. On the other hand, Peters notes that for learners to be autonomous they have to be *"meta-cognitively, motivationally and behaviorally active participants in their own learning"* (Bei, 2019).

Batsila (2019) said it is often argued that research needs to connect policy with practice, in order to improve the results of educational processes. In his research aimed at comparing both dimensions, the European Union, EU, policy with learners' views on the actual educational processes. The focus was on distance web-based initial and continuing vocational education and training, VET, which refers to courses or whole programs of study offered, exclusively or not, online. The basic characteristic of the field is that it offers skills necessary for a certain profession (Rogers, 2002).

Distance web-based education (or e-learning) takes place online, with the help of virtual classes and digital media. An example of distance web-based VET is MOOCs and CPD courses. The innovative online learning processes enable anyone to train and re-train anytime anywhere, fulfilling this way the growing need for VET (Batsila, 2019).

Open and distance learning has evolved through different eras of educational, social, and psychological development, which most likely due to the advance of technological developments, particularly information communication technologies that have reshaped teaching and learning with a revolutionary feature provided by the internet technologies. Especially social-constructivist pedagogy, which founds on the personal construction of knowledge through social interaction has drawn attention as an approach that emphasizes the collaborative nature of learning, the importance of the social context, the integration of learners into the information communities and their

inclusion in collaborative processes (Taskiran, 2019). Jonassen (1994) summarizes some characteristics of constructivist learning environments as follows: authentic tasks in a meaningful context, real-world settings or case-based learning, environments that encourage reflective thinking, environments that enhance collaborative construction of knowledge through social negotiation (Taskiran, 2019).

One such area of developing practice for social change interventions is in massive open online courses, MOOCs. MOOCs are very large open access online courses. They are open to anyone who wishes to study them, and openness also relates to the use of open-course platforms, curricula, information and assessment processes. MOOCs can be used to characterize social experiences using participant information and contributions (Robertshaw, 2019). The majority of MOOCs are developed by academic institutions and presented to the public via a MOOC provider platform, for example Cousera, edX and Udacity. Hollands and Tirthali (2014) describe MOOCs as online courses that: "*allow hundreds of thousands of students to participate simultaneously in a course and are free and open to any interested participant*" (Liyanagunawardena, et al., 2019).

4. Conclusion

MOOCs (Massive Open Online Courses) were introduced already in 2008, but gain on importance in 2012, (Siemens, 2012, as) a new educational revolution that also put business models in reconsideration, because of the question of openness. Despite that their name suggests the main goal is to be free or at least cheap knowledge, providers use them for various aims. Studies showed that universities mainly use them in marketing purposes for spreading programmes abroad (Puhek, Strmsek, 2019).

The rapid rise in massive open online courses (MOOCs) has led to a series of different approaches to their delivery, pedagogy, functionalities and support mechanisms. Some of these have been successful and others not so successful, for example, we have witnessed high variability in the documented retention rates across different MOOC offerings. The expansion in the MOOC literature space has reflected the appetite of academics and commenters in interrogating the nature and form of the MOOC phenomenon, with both positive and negative debate evident (Warburton, Mor, 2015).

References

Alberta M. Gloria, Lynet Uttal (2020). Conceptual Considerations in Moving from Face-to-Face to Online Teaching, International Journal on E-Learning. v19, i2.

Anastasia Batsila (2019). Inter-Learner Communication and Collaborative Learning as Quality Criteria of Distance Vocational Education and Training, *European Journal of Distance and e Learning*. v22i2 https://doi.org/10.2478/eurodl-2019-0013.

Ayse Taskiran (2019). Telecollaboration: Fostering Foreign Language Learning at a Distance, *European journal of distance and e learning*. v22i2 https://doi.org/10.2478/eurodl-2019-0012.

David Robertshaw, Yasuhiro Kotera, Kedleston Road (2019). Changing Attitudes with a MOOC on Dementia, European Journal of Distance and e Learning. v22i2 https://doi.org/10.2478/eurodl-2019-0008.

Evanthia Bei, Ilias Mavroidsis, Yiannis Giossos (2019). Development of a Scale for Measuring the Learner Autonomy of Distance Education Students, *European Journal of Distance and e Learning*. v22i2 https://doi.org/10.2478/eurodl-2019-0015.

Khalil Alsaadat, Mobile Learning – An Alternative Approach in Higher Education, *European Journal of Alternative Education Studies,*v2, i1.

Leisi Pei & Wu Hongbin (2019). Does online learning work better than offline learning in undergraduate medical education? A systematic review and meta-analysis, *Medical Education Online,* v24, i1.

Littenberg-Tobias, J., Ruipérez-Valiente, J. A., & Reich, J. (2020). Studying Learner Behavior in Online Courses With Free-Certificate Coupons: Results From Two Case Studies. *The International Review of Research in Open and Distributed Learning*, *21*(1), 1-22. https://doi.org/10.19173/irrodl.v20i5.4564.

Marc Clara, Elena Barbera (2013). Learning online: massive open online courses (MOOCs), connectivism, and cultural psychology, *Distance Education*,v34,n1.

Miro Puhek, Zvezdana Strmsek (2019). MOOCs as Tool for Development of 21st Century Skill, *European Journal of Distance and e Learning.* v22i1 Retrieved from https://www.eurodl.org/materials/briefs/2019/Puhek_Strmsek.htm.

Saeed Latifi, Omid Noroozi, Javad Hatami, Harm J.A. Biemans. (2019) How does online peer feedback improve argumentative essay writing and learning?. *Innovations* in *Education* and *Teaching International* 0:0, pages 1-12.

Stefanos Armakolas, Christos Panagiotakopoulos, Anthi Karatrantou (2018). Teleconference in Support of Autonomous Learning, *European Journal of Distance and e Learning.* v22i2 https://doi.org/10.2478/eurodl-2018-0005.

Stephanie J. Blackmon (2018). MOOC Makers: Professors' Experiences with Developing and Delivering MOOCs, *International Review of Research in Open and Distributed Learning*, v19n4.

Steven Warburton, Yishay Mor (2015) A set of patterns for the structured design of MOOCs, *Open learning, The Journal of Distance and e Learning*, v30,i3. https://doi.org/10.1080/02680513.2015.1100070.

Tharindu R. Liyanagunawardena et al. (2019). A MOOC Taxonomy Based on Classification Schemes of MOOCs, *European Journal of Distance and e Learning.* v22i1 https://doi.org/10.2478/eurodl-2019-0006.

Todd Reeves, Andrew A. Tawfic, Fortunata Msilu & Irfan Simsek (2017). What's in It for Me? Incentives, Learning, and Completion in Massive Open Online Courses, *Journal of Research on Technology of Education,*v49,n3-4.

Ulf Olsson (2019). The Grounds for Higher Education Teachers to Engage in MOOC Development Projects, *European Journal of Distance and e Learning*. V22i2 https://doi.org/10.2478/eurodl-2019-0016.