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THE PLATFORM OF MOOC (MASSIVE OPEN ONLINE COURSE) ON OPEN LEARNING: ISSUES AND CHALLENGES

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Abstract: *Naturally, MOOC or Massive Open Online Course is a course design for a distance learner. The platform which is provided by Open Learning is a course that's open anywhere as learner connected with all the equipment needed and of course the Internet speed is a major concern. The growth of the Internet and all sorts of devices such as computers, notebook, and tab has made learning more effective and fun for everyone. Thus, MOOC becomes a popular method of e-learning as it can provide the material of the course accessible by everybody, not only for a distance learner, but most of higher educational institution has taken for granted the benefit of these platforms. This paper attempted to discuss the definition and a brief history of MOOCs and observes it from various dimensions of issues: pedagogical, technological implementations and challenges in the digital era. Therefore, literature reviews on MOOCs model and characteristics, a timeline of its development and a practical concern with the involvement of well-known MOOCs providers are presented.*

Keywords: *MOOC, E-Learning, Higher Educational Institution*

Introduction

Nowadays, MOOC or Massive Open Online Courses is a trending phenomenon in online education. As general, MOOC are a popular method of learning where most of the learner is away from the real building or classes. Nonetheless, these platform quite famous, especially at higher education institution. Due to this reason, a number of participants in a MOOC and the number of MOOCs of platforms and courses are appearing to be increasing at a tremendous level. The MOOC methodology is generally known in that it can achieve a wide group of learners (Sadhasivam & Babu 2017) . But yet, a study on MOOC phenomenon is still new and keep on moving. MOOCs or Massive Open Online Courses are courses made available by MOOC providers on internet for learners who can study the learning content on a self-paced way. Normally the learner whom can complete the readings and assessments and may get help from a large community of learners through discussion forums, blog or any other resources online whether provided from the platform or outside. The MOOCs are developed under the concept of Open Learning or Open Education, where it is expected to resume the academic characteristic of interaction, access to the debate, trading of knowledge and transparency beyond only the provision of contents, which can approach the democratization of knowledge (Quiliano Terreros et al. 2009). Moreover the MOOC acronym highlights the key components; i.e. that they are online courses which tie together the potential for learning in a large-scale, distributed community of peers and through open practices (Conole 2016). Thus, the objective of this paper is attempting to identify and discuss the issues and challenges facing by MOOC on open learning.

Literature Review

he MOOCs are developed under the concept of Open Learning or Open Education, where it is expected to resume the academic characteristic of interaction, access to the debate, trading of knowledge and transparency beyond only the provision of contents, which can approach the democratization of knowledge (Quiliano Terreros et al. 2009). With the use of technology, knowledge can be disseminated and shared in an easy manner. Technologies also can offer many ways in which these may be realised. MOOCs are a recent development in Distance Education, which began to emerge in 2012 (Canbek 2015) . Because of MOOC become a trending phenomenon in teaching and learning alternative due to its fast growth, some studies shown that the quality and effectiveness of MOOC are under criticism (Gamage et al. 2015). According to Gamage et al. (2015), to identify the quality metrics which need to assess any MOOC is not easy due to difficulties arise with the increase number of MOOCs with different platforms and the perceptions, satisfaction and pass rates depend on the quality provided by MOOC courses. The quality factor and effectiveness of online learning platform supposed to be done with empirical evidence which involves the MOOC participant.

MOOC Model

MOOC can be categorized into two models. The first model is cMOOCs and secondly is xMOOCs. 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 (Altinpulluk & Kesim 2016). The first generation of MOOC were non-linear, student-driven and chaotic. Learners need to learn everything on their own called individualized learning. However, the second category of MOOC which is cosmic are online versions of traditional learning formats, applying a knowledge transmission model using video recordings of classroom lectures or custom-produced mini-lectures (Kocdar et al. 2017). The method is linear and straightforward. They are online versions of traditional learning formats

for example video lecture followed by short quizzes and tests, instruction, discussion and interactions are mostly done through peer review and others (Haron, Hussin, Samad, et al. 2019).

Moreover, the model was the popular discussion on MOOC learning and technologies. In this category, the instructor will provide the content and material in the forms of lecture notes, quizzes, assignment and assessment. MOOC provide an opportunity which is a course that being offered for free or at lower cost widely and globally. Basically, the courses in MOOC which is conducted at Higher Learning institution were in the category of xMOOC (Haron, Hussin, Rizal, et al. 2019). Thus, the freeness of courses is significant features that interpret the wide spread of MOOCs. The low cost, is not just for participants or learners, but for educators, it's a free tool to establish MOOCs are available. This makes MOOCs more convenient for learners to pick what knowledge or skill is suitable for them without committing to a certain context, time, and resources (Abu-Shanab & Musleh 2018).

MOOC Characteristics

In general, the structure of MOOC is conceived to promote autonomous learning with a number of resources in the form of videos, links, documents, and a space for debate and communication or we call it a forum. The characteristics of MOOC are massive, online, openness and free (sometimes and most of the time). Briefly, massive means it should allow access to a very large number of students, much larger than a face-to-face class, or a traditional online course. Online mean the course is done remotely via the Internet and does not require physical attendance like in a classroom. This feature is essential for anyone from anywhere in the world with an Internet connection which is anybody can participate in these courses. Meanwhile openness means the course should be open to everyone and should not require any prerequisites such as possession of a qualification or a level of performance in earlier studies. Even though openness could have several meanings, but in this paper, it is quite enough if the author could explain as it is mentioned earlier.

Material and Methods

A qualitative methodology was used in this study where the author search and identify the most relevant papers to review, which is regarding issues and challenging of MOOC platform. One of the technique used in these qualitative methods is to identify the papers related which is searching from databases or search engines and choose only the relevant one. It is a crucial step because too many papers and articles that related to MOOC and challenging to identify what the issues as we must go through the papers related. However, there are several research papers were located through a series of such attempts. The relevancy of the paper was determined by examining their primary focus whether it identifies on MOOC issues; pedagogical, technological implementations and challenges in the digital era. The search terms used were "MOOC", "MOOC Model" and "MOOC issues and challenges" and the period narrowed to 2014 to 2019. We used the search terms in a selected number of educational journals such as International Journal of Web-Based Learning and Teaching Technologies, Journal of Interactive Online Learning and International Review of Education. At the same time, we expand our coverage of journals by searching from academic and bibliographic databases such as Wiley Online library, SpringerLink, Elsevier's ScienceDirect and IEEE Explore. Table 1 illustrate the search sources and the number of papers that relevant to the review. The source of searching can be categorized into two which is from Education Specific Journal and from Publisher/Research Databases.

Table 1: Search Sources and Number of Papers Related

Sources	Number of Papers/Searching	Relevant to the review
Education Specific Journal;	29	18
Publisher/Research Databases;	21	7
Total	50	25

Result and Analysis

As a result, the paper that relevant to review regarding issues and challenges of MOOC has been analyse. The MOOCs, as already said, have a huge potential to provide free education on a global scale, with the opportunity of democratizing access to higher education of good quality (Bezerra & da Silva 2015). Although MOOC considered as new technology, especially in an e - learning environment, there are various challenges that MOOC community is coming across. The discussion of MOOC issues in this research provides us as global view and scenario of online learning platform which a further research is needed on it.

MOOC Design and Engagement

As MOOC provide a virtual platform of learning, there is no live instructor there and the engagement of learners to the material provided could be the biggest issues. How learner could adapt to the online material as they must in different capabilities'. What would the best interface design and learning content that can be applied at MOOC? Some author such as Brusilovsky applied the concept of an intelligent and adaptive in a web-based educational application to personalize the experience of distance learning students (Alzaghoul & Tovar 2016). The Intelligent Adaptive Learning (IAL) is a method that serves to individualize and to some extent can personalize learning for each student. Thus, this improvement which is seeing the rise of new technology at the beginning of the 21st century. According to Malach et al. (2018), Intelligent adaptive learning is defined as digital learning that immerses students in modular learning environments where every decision a student makes is captured, considered in the context of the sound learning theory, and then used to guide the students' learning experiences, to adjust the student's path and pace within and between lessons, and to provide formative and summative data to the student's teacher. The method of adaptive learning has a potential to keep student interest on learning at MOOC as it possibly may be increase the drop-out rate and completion rates as long as learner engagement to their learning path. Moreover, this type of learning analytics tailors instruction to each student's unique needs, current understandings and interests.

Pedagogical Model and Infrastructure

Other issues are pedagogical model and infrastructure which provider of MOOC needs to be considered effectively. Yes, it is true that MOOC is openness and massiveness, but nevertheless not all can adopt the technology as we provide. The concerns regarding the relevance of content offered, languages of instruction, diversity of learning needs, and cultural differences in pedagogy are pervasive (Castillo et al. 2015). The pedagogical concern must take into consideration when involve with the massive audience. Due to one key concern of MOOCs is

a high earner drop-out rate, with several sources indicating that about 5% to 15% of the participants finish the courses on average. Moreover, several authors have researched problematic aspects in the design and management of the courses, such as, for example, the pedagogical model and the quality of MOOCs. By the way, recent developments of MOOCs seem to be driven by commercial interests rather than by pedagogical concerns (Buhl & Andreasen 2018). According to Buhl and Andreasen (2018), MOOC providers are creating new business models which are gradually connecting the educational activities of MOOCs with various degrees of payment. Dhawal Shah (2017)[1], summaries different business models of four big players on the MOOC market. In his examination of Edx, Coursera, Future Learn and Udacity respectively, he depicts the MOOC phenomenon as becoming more and more based on market mechanisms, where visions about education for everybody are replaced by different payment systems. His ranking of the four providers, Edx represents the most open provider, which still offers some free accessibility, while Udacity was the first to offer a new mode of certification.

Quality and High Dropout Rates

Another concern is the quality. Quality in the MOOCs is related to the problem of high drop-out rates in this type of course. Dropout rates can be defining as the percentage of students failing to complete a particular school or college course. Meanwhile completion rate is defined by as "the percentage of enrolled students who satisfied the courses' criteria in order to earn a certificate (Abu-Shanab & Musleh 2018). The completion rates have been reported also as a disturbing topic in MOOC due to high dropout rates in the literature. How can MOOCs managers declare quality learning in their courses, if students are failing to complete the same? The MOOCs should follow the same quality principles applied in traditional courses because, to a great extent, they derive from undergraduate disciplines, being produced by the same faculty, with the same material, however, adapted to the new environment (Bezerra & da Silva 2015). According to Bezerra and da Silva (2015) offering or participating in a MOOC has benefits to each party, however, concerns are arising on the real value behind MOOCs and the consequences of it. It is mainly because there are higher dropouts in MOOC, which means only 7-13% of pass rate or sometimes less than that complete the courses (Gamage et al. 2015).

Validation and Plagiarism

The open electronic learning environment is also open for plagiarism and dishonesty (Abu-Shanab & Musleh 2018). According to Abu-Shanab & Musleh (2018), to prevent this and ensure credibility, assessment methodologies and techniques must be studied and analyzed extensively. Same as MOOC, a fundamental aspect and a great challenge for MOOCs is to ensure that the works are original and valid. To do so, a system to prevent and detect plagiarism of the activities generated by the students is necessary (Bezerra and da Silva 2015). Still, according to the same authors, the platform coursers studies to deploy a software for detecting plagiarism, just as Udacity and Edx which formed a partnership with Pearson VUE, a test centre provider, to validate the tests in supervised form. However, it is important to highlight that this practice involves generating cost to students.

Shah, D. (2017). MOOCs started out completely free. Where are they now? EdSurge [blog post 20 April]. Retrieved 8 January 2018 from https://www.edsurge.com/news/2017-04-20-moocs-started-out-completely-free-where-are-they-now.

Discussion

This section is dedicated to the presentation of the relations between the issues and challenges face by MOOC with the Khan Dimensional Framework. The Khan Dimensional Framework is a framework or numerous factors help to create a meaningful learning environment, and many of these factors are systemically interrelated and interdependent (Khan 2010). Figure 1 illustrated the diagram of E-Learning-MOOC framework by Badrul Khan. The purpose of this framework is to help people such as MOOC provider, instructor and policy maker think through every aspect of what need to be done during the steps of the e-learning design process. Khan stated that a systemic understanding of these factors can help designers create meaningful learning environments.

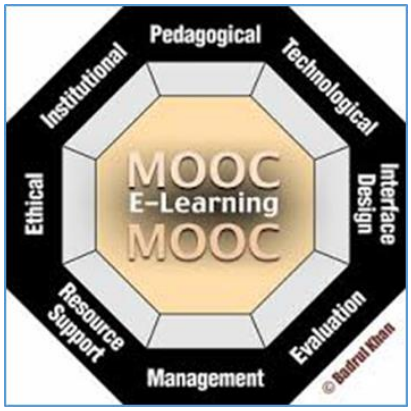

Figure 1: The E-Learning-MOOC Framework

The E-Learning -MOOC Framework discuss the Khan eight-dimensional framework embraces various online learning issues, including: pedagogical, technological, institutional, interface design, evaluation, management, resource support and ethical. Table 2 below illustrate the eight-dimensional framework of e-learning in the context of MOOC.

Table 2: Khan Eight-Dimensional Framework

Dimension	Description
Pedagogical	refers to teaching and learning where addresses issues concerning content analysis, audience analysis, goal analysis, media analysis, design approach
Technological	examines issues of MOOCs' technology infrastructure, hardware, and software.
Institutional	concerned with issues of administrative affairs, academic affairs, and student services related to e-learning.
Management	refers to the maintenance of the learning environment and its global large-scale distribution.

Resource Support	examines the online support and resources required to foster meaningful learning environments.
Ethical	relate to social and political influence, cultural diversity, bias, geographical diversity, learner diversity, information accessibility, etiquette, and legal issues.
Interface Design	encompasses page and site design, content design, navigation, and usability testing
Evaluation	refers to both assessments of learners and evaluation of MOOC environments.

Source: Chapter 5, The Global E-learning Framework by Badrul Khan (2010)

In this part, Figure 3 shows the relationship of MOOC issues with the Khan Framework as below:

MOOC Issues	Khan Framework Factor
MOOC Design and Engagement	*Technological and Interface design*
Pedagogical Model and Infrastructure	*Pedagogical and Institutional*
Quality and high dropout rates	*Management and Resource Support*
Validation and plagiarism	*Ethical and Evaluation*

Figure 3: E-Learning/MOOC Issues associated with Khan Eight-Dimensional Framework

From the author's point of view, the first issue which is regarded MOOC design and engagement is related to the technological and interface design factor from the framework. Second issue which is pedagogical model and infrastructure are factors concerning pedagogical and institutional. Meanwhile, the quality issue of MOOC and high dropout rates is associated with the management and resource support. Lastly the issue on validation and plagiarism concerning the ethical and evaluation factors of Khan framework. Even though, the framework explains the broad element and factors associated with the success of e-learning method, especially on MOOC, it is truly a real guideline and procedure to follow with. This framework could give a broad picture in order the stakeholder for example learner, instructor and support staff through the implementation of MOOC learning. Moreover, the E-Learning Framework can be used to ensure that no important factor is omitted from the design of e-learning, whatever its scope or complexity (Khan 2010). Khan also stated that various issues within the eight dimensions of the framework were found to be useful in several studies that were conducted to review e-learning programs, resources and tools.

Conclusion and Future Enhancement

The issues and challenges being discussed in MOOC implementation in this research is the main idea of going through and further examine the future direction in this area. Because of Massive open online courses (MOOCs) are one of the most expanded trends in higher education in recent years, the education providers have to face the challenges as much as concern should be given to these major prominent in the sector. MOOCs s the modern trend in the field of distance education and it seems to go on for some time, which indicate a significant need of research studies, especially on the issues and challenges and the way to overcome it. In future enhancement much detail exploration on the issues could be related to sub-dimension of eight-dimensional framework especially in MOOC phenomena. Last but not least, Khan also stated that designing open, flexible, and distributed e-learning systems for globally diverse learners is challenging; however, as more and more institutions offer e-learning to students worldwide, we will become more knowledgeable about what works and what does not work.

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