

MOOCs in Higher Education: Opportunities, Challenges and Innovations

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Abstract

In the modern era of Information Age, higher education has been gradually transferred from the activities based on individual experiences to a systemic and complicated project with the large amount of information and its own team. MOOCs are the outcome of the current times, which have injected new vitality to higher education and driven its reform. Compared with the traditional teaching, MOOCs bear the outstanding features of free and open registration, an open curriculum, and open-ended outcomes, which make its wide popularity around the world. MOOCs have brought in golden opportunities for learners to access high quality courses more easily and for instructors to present their teaching capability on a larger platform. At the same time, MOOCs are faced with challenges such as the high rate of dropout compared with the high rate of enrollment, and the lack of effective evaluation system. The further development of MOOCs lies in the blended teaching combining the traditional classroom teaching and online teaching, the relationship between which is complementary.

Keywords: Massive online open courses (MOOCs), online education, Higher education, Big Data, Traditional Teaching.

Introduction

MOOCs (Massive Online Open Courses) are a new trend of education development pushed forward by digital media and internet technologies. The term of MOOC was coined and employed by David Cormier and Bryan Alexander in 2008 in order to introduce the course of Connectives and Connective Knowledge developed by Stephen Downes and George Siemens . The presence of MOOC is the transmission and development of the open-minded teaching concept rather than an accidental event. It was firstly referred to as cMOOCs, where the individual is regarded as the knowledge knot. Functioning both as students and as teachers, learners work together to form a connecting network and the course is like a learning community. While MOOCs reflect a teaching ideal which is open, connective and learner-oriented, the courses with MOOCs as the blueprint are presented by the well-known universities around the world and lead to huge influence.

Wikipedia defines MOOC as “an online course aimed at unlimited participation and open access via the web.” This definition tells that with the online media MOOCs can help as many learners as possible learn

the quality courses from famous teachers in famous universities, offer the certificates to show the learners have finished the course, and passed the test. They embody the prominent features of large scale of participation, openness and distributed learning . These basic features of MOOCs derive from the teaching idea of the sharing of resources, which emphasizes that the gaining of knowledge should not be restricted by population, ethnic groups, economy, districts or other factors. MOOCs have challenged the credit system and the degree program mode in traditional universities, which distinguish them from other open educational resources.

Opportunities brought in by MOOCs

The traditional mode of talent cultivation is often teacher- and textbook-oriented, that is, students learn knowledge under the instruction of teachers who take textbooks as the guide. In the information age, it is impossible for higher education to avoid the huge wave of this era, which is the background of teaching innovation in today's universities. The fast spreading of MOOCs since the year of 2012 has been causing historical changes to higher education and bringing in golden opportunities for its development.

Features of MOOCs

The extensive application of MOOCs in the field of education is the realization of the cooperation between the upgrading of the educational resources and other fields outside education in its broad sense and the realization of the teaching aims by employing the internet technology. As a modern teaching mode, MOOCs bear the following features.

Firstly, the diversity of courses is the most outstanding feature of MOOCs. In the aspect of teaching languages, the large quantities of quality courses cover the languages of English, Chinese, French, Japanese, Korean, etc. In the aspect of disciplines, they include not only the theoretical subjects in the fields of humanities and social sciences, science and engineering, medicine, arts, etc. but also the operating courses such as techniques for photography, the statistics tool of SPSS. In the aspects of learners, there are students in universities, employers in enterprises and public institutions, teachers hoping to communicate with their peers.

Secondly, autonomy is one of the features which runs through the MOOC teaching. When students enroll the MOOCs, they choose the online courses according to their own interest, which gets rid of the limits of the traditional curriculum schedule. In the learning process, students are not restricted by time and place. They can learn the courses anytime and anywhere, which ensures the enough learning time on the one hand and improves students' learning efficiency on the other hand. At the end of the courses, students can choose to take part in the examinations to finish the course and get the course-completion certificate..

After finishing the required courses, students can get the graduation certificate or vocational certificate in a relevant field.

Thirdly, the sharing feature of MOOCs is also called the openness, which is presented in the the spreading of courses. Courses in MOOCs are posted on the internet platforms and learners can make their choice at their own will. Most courses are free of charge, and learners across the world can get them from the internet. The positive consequences of these shared courses are that students and scholars from every corner of the world can gather together via internet and discuss a certain topic. They can put forward questions and exchange their views by using the internet communication tools such as Facebook, Twitter, WeChat, etc..

The last feature of MOOCs discussed here is the accessibility, which means that you can get the existing quality courses if you want. Different from the traditional teaching mode which costs plenty of time and money, courses on the MOOCs platform can be gained in a much easier way.

Opportunities for higher education

The traditional teaching mode and talent cultivation pattern can no longer meet the requirement of higher education in the modern era with the information technology as the outstanding feature. Today, the aim of teaching in universities is to construct the “community”, where both teachers’ and students’ innovation is highly valued and the harmonious development of teaching, research, application and social service is stimulated. In this very way, the sticky contradiction between teaching and researching finds an effective way-out.

With the integrated system of homework, exams and discussion, these courses spread quickly and attract more and more students and universities. The presidents and teaching leaders in universities begin to realize that the rise of MOOCs will definitely drive the reform in university teaching. The wave of curriculum innovation introduced by MOOCs is still playing a considerable role in higher education. Teaching is the everlasting theme of higher education. Nowadays, under the background of the deepening teaching reform of higher education and the imbalanced distribution of quality education, the fast development of information technology has become the strong impetus to improve higher education and the integration of technology and education provides a new way to solve the existing problems. As a typical representative of this integration, MOOCs have successfully opened the running mode of “internet + education” and highlighted the implied question of the quality of teaching in the international competition of higher education, which has stirred the higher education pattern and realized the share and spreading of the top higher education around the world. This has satisfied people’s strong desire for

knowledge and brought in the opportunity for universities to reform in their teaching content, teaching method, teaching mode and teaching organization.

Challenges MOOCs are faced with

In recent years, MOOCs have been extensively applied in higher education and benefited a lot of learners and teachers. Meanwhile, they are faced with some challenges.

One of the distinct challenges lies in the high rate of dropout compared with the high rate of enrollment, which requires the reflection from the curriculum designers and researchers to find out the reasons behind it. One possible reason is that the courses cannot meet students' personalized learning needs. In the design of the current MOOCs, courses are not updated according to students' instant needs. As a result, it is necessary to improve students' online learning experience by predicting their learning needs on the basis of their learning behaviour data. The openness and the sharing features of MOOCs are a double-edged sword, which offers both convenience for learners and instructors and becomes a challenge for the teaching management in MOOCs. The lack of positive motivation, self-stimulation and effective interaction are some of the reasons for students' dropout from MOOCs. Other reasons include the low coverage of credit certificate, the differences of learners' knowledge background and learning needs. What the open online courses need to do is to start from the perspective of "curriculum", establish the new cultural concept, construct the new ways to organize the courses and combine the online education in mind and in reality. The relevant institutions, universities and platform operators should provide support for MOOCs, pay special attention to learners' needs, enhance the acceptability of the courses and stimulate MOOCs' combination with classroom teaching.

Another challenge comes from the evaluation system. The traditional one mainly focuses on whether students have mastered the knowledge in textbooks or provided by teachers via comparing students' homework or examination papers with the standard answers. This kind of evaluation pattern is similar to the production of goods in assembly line in factories. Its major shortcoming is students' passive role as "being evaluated" and teachers' boring and repetitive work. When it comes to MOOCs, students are much more flexible than the ones in traditional classes for the freedom from the restriction of time and place, which makes it impossible for teachers to supervise their learning process. Besides, MOOC learners are various in both learning manners and learning purposes. The differences and complexity among the learner groups makes the evaluation of their learning consequences a hard job. It is urgent to introduce the modern technologies such as artificial intelligence, cloud computing and big data into the evaluation system of online courses, which requires the blending of the new generation technology and the evaluation pattern. The difficulty lies in the innovation of evaluation, which puts forward the following

questions. How to classify learning aims and define on which level learners are? How to realize the inherent combination of the two? Which data should be collected on the learning platform? How to store the collected data in a proper way? How to extract the most important evaluative data from the various courses and learners? How to present the collected data to the online learners or instructors? Answers to these questions are needed to supply support to the extremely complicated learning evaluation system, which will definitely go through a long-term exploring process.

Besides the challenges mentioned above, MOOCs in the era of the sharing of educational resources are faced with the problems of their sustainable development and their intellectual property. Specifically speaking, the unsatisfactory problems with MOOCs are as follows. Many courses are not finished, the teaching modes of some courses do not match the requirements from the online open courses; the contradiction between the fragmentation of online courses and the integrity of the discipline has not been solved yet; the structured design of curriculum cannot attract the personalized needs from individual learners, which causes the unsatisfactory experiences of the learners; the excessive focus on technology often neglects the needs from the interaction in teaching at the deeper level; the obvious presupposition of the online courses pays little attention to the diversity and variation of the teaching process. The list of these challenges is barrier to MOOCs' development and

Innovations of MOOCs:

Creativity and Innovation in Education – European Perspective

In the final report of the project: 'Creativity and Innovation in Education and Training in the EU27 (ICEAC)', carried out by the institute for prospective technological studies (IPTS) in collaboration with DG Education and Culture, it is highlighted that "there is a growing need for action in both national and European level to bring about the necessary changes required for an open and innovative European education culture based on the creative and innovative potential of its future generations".

The report outlines the "importance of the creativity and innovation in addressing the economic, environmental and social crises" and brings evidence that EU policies call for the "...strengthening of Europe's innovative capacity and the development of a creative and knowledge-intensive economy and society through reinforcing the role of education and training in the knowledge triangle and focusing on creativity, innovation and entrepreneurship...".

The Potential of MOOCs for Innovation and Creativity Centred Education

According to Norvig (2012), MOOCs have had a remarkable ability to attract large numbers of learners to a vigorous online learning community. The constant availability makes MOOCs an excellent resource not

only for students, but also for all life-long learners and modern professionals striving for on-going career development and personal improvement. MOOCs have always been a great format to exchange ideas among participants, to study and develop creative processes and foster innovation. This is due to several factors, including the fact that participants in Massive Open Online Courses are usually very diverse. The fact that these courses are provided for free or at low prices (which is their other big advantage) enables both people with no formal education and those with a degree from a higher education institution to be able to embrace the opportunities. Unlike the traditional classroom setting at a university, participants from all over the world, at any age and with different interests, abilities and background can enrol in an online course. Furthermore, studying in a MOOC is a combination of synchronous and asynchronous activities in the online format. This gives participants the ability to receive input from the teacher in the course, reflect on the topic at different places and times and interact with the course community subsequently. Depending on the pedagogical design of the online course and the platform features, one can substantially increase participant' innovation and creative outputs by simply enabling them to unleash their creative potential.

Some of the most important factors are the format and pedagogical base which make MOOCs very suitable for teaching and learning concepts, methods and theories, for obtaining practical skills and competences, as well as for boosting the sense of innovation and the creativity of the learners. The online format allows learners to explore dozens, yet hundreds of contributions by other course participants, which often leads to further inspiration for their own work in creative assignments. Taking all the above into consideration, we can conclude that MOOCs could play a learning and in their working lives.

Determinants of successful MOOCs on Creativity and Innovation

Course Community

A vital course community that enables social learning is a key for MOOCs on creativity and innovation. Successful MOOCs in this field have engaged and socially active communities of students/learners that pose problems, solve questions, add additional material to the class, and support other students' learning. MOOCs are designed to allow users to learn by themselves. A focus is put on interactive assignments, e.g. a peer evaluation process of essays, projects or other contributions. Scalability and the creation of an engaging and interesting learning experience is also key. An engaged community with a pool of creative minds can stimulate learners and high-quality peer-to-peer feedback can motivate them to contribute creative assignments themselves. Especially since creative assignments rarely have a "right vs. wrong" answer, well-structured peer feedback is often as good as expert feedback.

It must be noted that the quality of the discourse is very important to the learner experience. An active community does not equal a good community and low quality peer feedback and discussions can lead to frustration and disengagement of the learners.

Conclusion

MOOCs have brought in both opportunities and challenges to learners and teachers around the world. There are certain problems deserving the reflections from the instructors and researchers, such as how to keep MOOCs' sustainable development and how to get out of the current difficulties in higher education innovation. On the one hand, with the multiple research perspectives, most studies on the theory and practice of MOOCs are still at the preliminary stage and there is a lack of systematized research theme. In the future studies, researchers should focus more on MOOCs' educational value and switch their research from the individual course to the comparison among different learning situations, from the after-event analysis to more more effective teaching design. On the other hand, studies on MOOCs' application and practical pattern are not sufficient. Most current research on MOOCs mainly focuses on the theoretical discussion, management evaluation and investigation on learners' acceptability and satisfaction. As an important drive in higher education reform, MOOCs help to reconstruct the education service pattern, realize the talent cultivation aim and improve learners' spirit of innovation.

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