The challenges and countermeasures of MOOC to the teaching reform in universities

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Abstract:As an emerging curriculum model, MOOC (Massive Open Online Course) has a grea impact on traditional university teaching by providing free teaching resources, realizing complete learning experience, and timely interaction to students.Through the overview of MOOC, this paper analyze many challenges to the reform of university teaching that MOOC brings. On this basis, it puts forward the strategies that should be taken in the teaching reform in universities.

Key words:MOOC; University Teaching; Teaching Reform

With the advent of the big data era as well as the innovation of network information technology, the MOOC e-learning course has begun to be popular around the world. By using the Internet as the platform and the resources from international well-known universities and their best teachers, Massive Open Online Course (MOOC) has risen rapidly around the world. Also, MOOC is successful to help millions of students from all around the world to learn from international famous universities and share the most advanced educational resources. Some scholars believe that MOOC will gradually change the form of our traditional higher education that problems such as the scarcity of high-quality education resources, the decline of education quality and the increase of education cost in higher education have been solved. Other scholars believe that MOOC is only an upgrade to the earlier online education, and it can barely have a major impact on the reform of higher education teaching[1]. Therefore, it is of great practical significance to expound the development status of MOOC and so as to analyze the influence of MOOC on the teaching reform in universities.

1 The Overview of MOOC

As the English abbreviation of Massive Open Online Courses, MOOC has four letters which represents different meanings separately: The first letter “M” stands for Massive. Unlike traditional courses, which have only a few dozen or a few hundred learners, a MOOC course can involve tens of thousands of people, and it is up to 160,000 people currently; The second letter “O” stands for Open. It respects the creation of sharing agreement and it is interest-oriented that anyone who wants to learn can join in and learn. Regardless of nationality, you only need one email address to register for participation. The third letter “O” stands for Online. Learners learn the course on the Internet in anytime and anywhere. The whole process will be completed online, including lectures, interactions, evaluations, etc. The fourth letter “C” stands for Course that MOOC offers high-quality courses from the world's top universities.

MOOC was put forward by Canadian scholar Dave Cormier and Bryan Alexander in 2008. In 2011, Stanford University professors Sebastian Thrun and Peter Norvig put the video of “Introduction to Artificial Intelligence”

on the Internet, which attracted more than 1.6 million learner learning[2]. In 2012, the top universities and several deep-pocketed investors have taken the lead in setting up the world famous MOOC platform in America that named Udacity, Coursera, edX. In 2012, it was called the “the first year of MOOC” by the New York Times. The MOOC started in China in 2013, and Tsinghua University launched the first Chinese version of the MOOC platform named “School Online” at the same year. Subsequently, Peking University, Shanghai Jiaotong University, Zhejiang University, Fudan University, Tongji University and many other top universities in China established a Chinese MOOC platform hand in hand. The development of Chinese or bilingual MOOC courses in the first-class universities in China is not only conducive to expanding the international influence of local universities, but also to promoting the reform of higher education system as well as the diversification and individuation of higher education with the help of the development of MOOC curriculum[3].

2 MOOC gives challenges to the traditional teaching in universities

MOOC is the result of the application of information technology in teaching, it is different from the traditional teaching behavior system and mode, which brings challenges to traditional teaching.

2.1 The challenge of the teaching model

The “teaching-oriented” teaching mode has long occupied the classroom. In this teaching mode, the “bilateral interaction” between teaching and learning has become the transmission and acceptance of “unilateral”,and using teaching instead of learning, using teaching to control learning and using teaching to evaluate have become the most concentrated representation. The teaching content, teaching process, teaching methods, teaching results and so on are all controlled by the teacher. Monologue replaces the dialogue that ignoring the subjectivity of the learner, and it is difficult for the learner to think deeper. MOOC takes “study” as the center of teaching value orientation, which shaking up the the status of “teaching-oriented” teaching model. It gives the initiative and choice in learning back to the learners to fully explore the initiatives of the learner in the learning process. It will customize personalized learning programs on the demand of learners: learners can select courses and teachers according to their own learning interests and learning needs, and control the progress according to their own ability level; And also, learners can organize multiple interactions in the learning community spontaneously: they can choose appropriate learning methods, think about learning content actively, ask questions from teachers, teaching assistants or other learners, and sharing their opinions and answers in the learning community as well. And during the study of MOOC time and place will not be limited, so learners can learn at anytime and anywhere and it will be more flexible in learning process. In short, the MOOC learning respects the learner's willingness to learn, and give play to the subjectivity of learners in the social construction, which effectively promotes the transformation of individualized teaching methods[4].

2.2 The challenge of the course completion

The data showed that the MOOC course was popular with learners in the early days of its launch, and the number of registration continued to rise, but the number of people who could finish the course was not much. Take the Udacity open class at Stanford University as an example, the completion rate is only 5% to 16% and the pass rate is even lower at current. Shanghai Jiaotong University firstly launched four courses in early 2014, and attracted a total of 60,000 students, including 65 countries and regions with more than 50 students. According to one of the "mathematical journeys", only 3 percent of students who eventually took the exam and got the certificate of completion, these data caused some people to question the effect of MOOC. The most important feature of the MOOC course is that learners have great autonomy, and the learning outcomes and completions depend on the degree of learner autonomy. For those who want to earn credits or a degree through MOOC, they often fail because of lack of self-discipline. In fact, some of the learners in MOOC courses learners are motivated by interest, and others are for practical reasons, they only need to learn a certain chapter of the course, even if they have finished studying, they may not participate in the test to obtain the "Certificate of Course". For these people, this course is meaningful and popular as long as you gain the knowledge you need. Udacity's manager Jonathan said: "A small percentage in large scale is still a large number. For example, the "Getting Started with Programs" course in Udacity has attracted 60,000 learners to enrol in , although there is only 14% pass rate, but the number of completing courses is as much as 23,000, this data is higher than the number of teachers in a traditional teaching team for many years". But in any case, the low course completion rate has become one of the main reasons that many critics blame MOOC.

2.3 The challenge of the teacher's ability

Regardless of the education and teaching reform, teachers are always the core and key to the success of the reform. The MOOC teaching reform is no exception. First, it challenges teachers' ability and level of knowledge dissemination. If the teacher cannot pass it on to the learner effectively, then he fails in teaching. The teaching of the MOOC platform accepts the supervision and evaluation of people from all walks of life, the quality of teacher knowledge dissemination determines the evaluation of learners, and the evaluation of learners determines whether the courses taught by teachers are necessary to be online. A good MOOC course requires teachers to grasp the time of teaching and learning accurately. In this process, we should also pay attention to the interaction between teaching,learning and information feedback in the teaching process. Therefore, teachers need to spend energy and time in producing teaching micro-video, controlling the design of teaching content, improving the knowledge dissemination of the course, and improving their micro-video through feedback of information in time[5]. Second, it challenges teachers' information technology literacy. To get a good MOOC course, teachers should learn to use some basic information technology operations, such as the production of micro-courses, the reading of data on the network interactive platform and so on need teachers to complete on the computer. Although the requirements are not too high, information literacy need to be required in this regard. More importantly, the teacher's information

technology literacy means that better achieve the predetermined educational and teaching objectives and content. Teachers should know when to use information technology, when to use information technology and so on. And the technology, form and strategy of education and teaching all serve the purpose of teaching.

3 The countermeasures of MOOC to the teaching reform in universities

MOOC brings new opportunities and challenges to the teaching in universities. In the face of the new situation, universities should take countermeasures actively to adapt to new technologies and new environments.

3.1 Teachers need to improve teaching methods and teaching skills

MOOC is based on information technology, and the whole course is generated online. It is an informatization course, which is different from traditional classroom teaching. The core of the MOOC concept is “learner-centered”, it breaks the traditional teaching model of “teacher-centered, textbook-centered, classroom-centered”. In terms of teaching methods, MOOC is based on the analysis of big data, which can comprehensively track and grasp the personality characteristics and learning behaviors of learners as well as the learning process to conduct targeted teaching and evaluate learners accurately, so that it can improve learners' learning quality and efficiency as well as improving the quality of personnel training. In terms of teaching concepts, MOOC subverts traditional teaching concepts and encourages teachers to reflect on the process and law of teaching and learning. The social function of the Internet enables learners to have a virtual and convenient learning community so that communication and interaction between teachers,students and learners can be more rapid and effective. The design of teaching content and teaching links can be closer to individuals, and the change of teaching concepts can promote the overall development of education. In the reform of the credit system, it is necessary to make students adapt to the requirements of individualized learning and lifelong education, and to establish online education management system is the highest level of MOOC mode. At present, domestic higher education is in the teaching reform attempt of open online course that actively exploring the reform of management system in terms of student status, credits, academic credentials. Mutual recognition of credits will become a trend in the future, which mainly comes from the essence innovation of the MOOC model. In terms of evaluation way, MOOC uses an objective and automated online assessment system to subvert the traditional one-way teaching paradigm of “teacher teaching and student homework”, which not only helps to promote teachers' online teaching skills but also helps to promote the transformation of the teachers’ roles. The roles of teachers has changed from the lecturer and communicator of knowledge to the motivator and guide of learning[6].

3.2 Emphasis on the development of featured curriculum resources and strengthen the competitiveness of MOOC courses

MOOC has promoted the upgrading and development of a new round of online education and it has become an important mean and channel for various countries to disseminate excellent cultural and educational resources.

In the face of the fast-growing online courses of international elite universities, China's MOOC also stands out. In addition to joining the international MOOC platform and establishing a local MOOC cooperation alliance, we should also develop courses with Chinese cultural characteristics actively. In China, the construction of excellent courses can be regarded as the predecessor of MOOC and the previous large-scale construction of quality courses has laid a firm foundation for the construction and teaching of current MOOC curriculum. Take the “Chinese Architecture History” published by Tsinghua university as an example, the course is taught in the real situation. With the change of knowledge points, the teachers lead the learners to appreciate the historical sites as well as unique classical buildings in China such as the Summer Palace and the Temple of Heaven in Beijing. Teachers are speaking while walking and the beautiful picture is fascinating, which enables learners to acquire more rich and multidimensional related knowledge and greatly enhance the learning interest and learning efficiency of learners[3].

3.3 Establishing curriculum alliances to achieve construction and sharing

With the development of MOOC, many colleges and universities have begun to jointly explore the development path of local MOOC. Under the guidance of the education authorities, the colleges and universities have voluntarily formed a non-profit and open curriculum alliance. By establishing the mixed teaching mode based on online video, university curriculum alliance helps to form a marketization sharing mechanism for quality courses and realize the extensive sharing of quality teaching resources and makes up for the lack of quality unversity courses and teachers , so as to promote the learning way to transform from the traditional teaching way to the modern teaching way. For example, in April 2012, the Shanghai Municipal Education Commission officially issued a document to approve the establishment of the “Shanghai University Curriculum Resource Sharing Center” in order to realize the sharing of courses, majors, and teachers and students resources in various universities in Shanghai; On October 9, 2013, Chongqing University and other universities initiated the council establishment meeting named“the East-West University Curriculum Sharing Alliance”, which is voluntary, non-profit, unincorporated, open, was held in Peking University Zhongguan New Park; Shanghai East China Normal University set up a MOOC center, and the C20 MOOC alliance initiated by 20 famous middle schools in China was established for middle schools; Tsinghua University established a large-scale open online course research center. Through the alliance, the university enhances its popularity and social influence, and uses social capital to deepen and develop its own curriculum to improve the teaching level and to improve the quality and level of its own teaching staff continuously.

3.4 Combine traditional classroom teaching and carry out flipped classroom based on MOOC

MOOC is the product of information age, and its development is unstoppable. To treat MOOC, we should return to rationality, not only see its positive role, but also examine its limitation so that we can correctly handle

the relationship between MOOC and traditional classroom teaching and give play to their respective advantages to promote the transformation of classroom teaching. To carry out the mixed learning of MOOC online learning and offline classroom teaching is an important way to promote the development of MOOC[4].

With the development of information technology, especially the richness of online video, the flipping classroom mode is gradually promoted. The idea is to adopt a teaching mode that is contrary to the traditional way of "learners absorb new knowledge in school during the day and consolidate it by doing homework after school". The learners watch the teaching videos outside the classroom, and then digest, consolidate and integrate in school, if they encounter questions, they will consult and communicate with teachers and classmates. Successful examples such as the American Woodland Park High School and the Khan Academy have proved the application value of the flipped classroom.

MOOC provides a large number of high-quality micro-videos to provide resource support for the application of the flip classroom mode. The flip classroom teaching mode based on MOOC is shown in Figure 1.

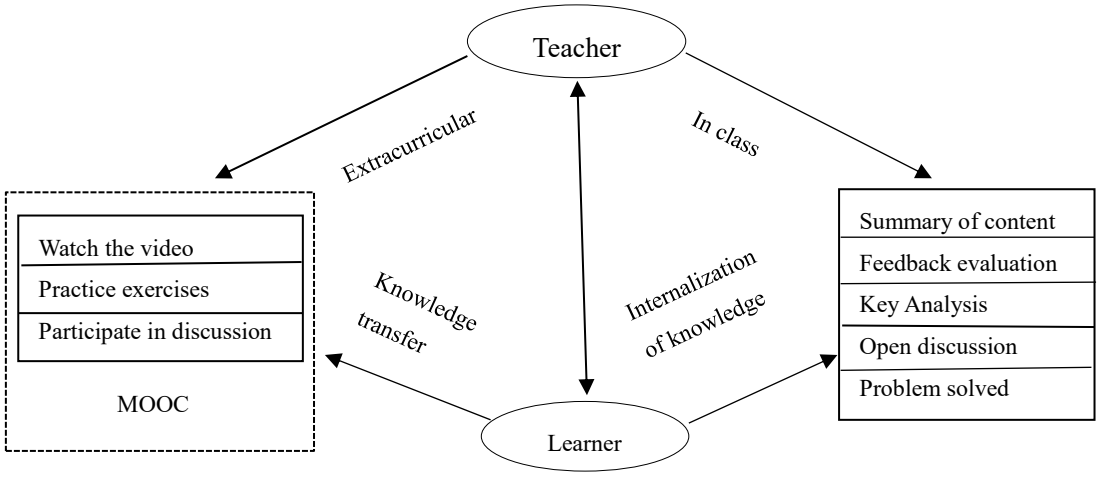

Figure1 Flipping classroom teaching mode based on MOOC

In this model, teachers use the high-quality online resources of MOOC to integrate with their classroom teaching to design mixed learning approach. Under the classroom, learners conduct video content learning, practice exercises and participate in forum exchanges; In the classroom, the teacher conducts key analysis of the learning content, summarizes the knowledge, solves the problems of the learner and conducts feedback evaluation. The flipping classroom mode gives learners more freedom, and the process of imparting knowledge is placed outside the classroom, so that learners can choose their own way to accept new knowledge; The process of internalizing knowledge is placed in the classroom so that more communication between learners and learners as well as communication between learners and teachers appeared. Flipping the classroom changes the traditional teaching method, enhances the interaction between teachers and students, improved individualized

communication, it is conductive to improve learners' interest and effect in learning[7].

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