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Chinese Higher Education Reform Under the Wave of MOOC

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Abstract

The upsurge of MOOC is exerting a huge impact on traditional higher education. It is regarded as a revolutionary power and may subvert or replace the traditional way of teaching and learning. This article gives a comprehensive analysis of MOOC by examining the pros and cons of MOOC and puts forward a new model—blended teaching and learning based on SPOC to reform Chinese higher education under the wave of MOOC.

Key words: Chinese higher education; MOOC; Blended teaching and learning; SPOC

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INTRODUCTION

The pervasive influence of internet is felt everywhere and the application of information technology into higher education is in urgent need. Just as William C. Powers, the president of the University of Texas at Austin announced on August 13, 2013,

> Rapidly advancing technology is changing virtually every aspect of our lives, and education is no exception. The changing landscape presents challenges, but it also gives us great opportunities. We need to lead change in higher education, both for ourselves and for the future.

China, a most populous country with so many college students, especially calls for reform in college teaching and learning. Both the *Outline of China's National Plan for Medium and Long-term Education Reform and Development (2010-2020)* and *Ten Years Development Plan (2011-2020) of Education Informatization* highlight the significant role of information technology in promoting education modernization, and education informatization is regarded as a new way to realize high-quality education resources sharing and fairness in higher education.

MOOC (Massive Online Open Courses) is a deep integration of information technology and education and has triggered education frenzy in recent years. Adhering to the concept "to spread the best educational resources in the world to the most remote corners of the earth", MOOC has opened up the channel for the public to accept the high quality education. It has become an important way to expand education, promote education fairness and realize the lifelong learning of the learners. As Chen Ji-ning, the president of Tsinghua University, said: this reform (brought by MOOC) is like a tsunami; it is to subvert the traditional concept of education and it also can bring a great opportunity for higher education.

This study is going to address the following questions: What is the advantage of MOOC and why does its arrival exert such a huge impact? Will MOOC replace the traditional education model? What kind of reform higher education will face in MOOC era?

1. A BRIEF REVIEW ON THE HISTORY AND DEVELOPMENT OF MOOC

The concept of MOOC(Massive Open Online Courses) was first put forward by Canadian professors Stephen Downes and George Simens in 2008. Sebastian Thrun, a professor of Stanford university uploaded the course *Introduction to Artificial Intelligence* online in 2011 and

attracted more than 160,000 students from above 190 countries to attend his online class, with 20,000 students completing the learning of the whole course. This ushered in the new era of MOOC.

In 2012, three pillar MOOC platforms: Udacity, Coursera and edX were developed and launched one by one by some first class universities like Stanford university, Harvard university and MIT. MOOC quickly gained popularity and in a very short period of time, more than 1 million learners joined the three MOOC course platforms, learning free online courses (New York Times, 2012).

When MOOC is developing continuously in the United States, the United Kingdom and European Union catch up quickly. In December 2012, MOOC platform "Learn Future" was established with the joint effort of 12 UK universities with Open university, UK taking the lead. In April 25, 2013, MOOC website Openup ED was formally launched by the European Union.

China's universities have also stepped up the MOOC process. In January 2013, the Chinese University of Hong Kong officially joined Coursera, and promised to provide at least 5 courses from September to the platform. In May 2013, Tsinghua University announced to have officially joined edX and launched the online course platform xuetangx.com; in July 2013, Fudan University and Shanghai Jiao Tong University signed to join MOOC platform Coursera. In the same year, the largest Chinese MOOC Learning Community Mooc. Guokr. com was launched and more than 1500 MOOC courses were included. In May 2014, Chinese University MOOC Project was formally launched online.

2. WHY MOOC MAKES A HIT?

MOOC has been popular in the world in a short time because of its own advantages, compared with the traditional classroom teaching, traditional network teaching and the online top quality courses.

2.1 Openness

One of the biggest characteristics of MOOC is its openness. On the one hand, MOOC has no entity of existence and all courses are carried out through an open network platform. Udacity, Coursera and edX not only provide online courses for the developer colleges and universities, and universities from all over the world can upload courses, truly realizing the internationalization of the platform.

On the other hand, the traditional classroom courses have great restrictions on physical classroom, student qualifications, classroom capacity and so on. MOOC courses make a breakthrough in time and space constraints (Yu, 2015) because it is open 24 hours a day and for all. People all over the world can be free to register at any time, regardless of age, region, whether or not being students. As long as there is a network, anyone can learn from the world's top universities by using a cell phone or computer, which is like a university with no walls (Xu, 2015) and no barriers on the web.

2.2 Mobility

In the Internet age, people's learning habits and learning methods are constantly changing. "Fragmented" and "ubiquitous" learning is popular; people want to learn anytime anywhere. Traditional classroom teaching needs to be fixed in the classroom and the traditional network courses sometimes need to be confined to the network classroom, while the MOOC course study can be done in any mobile terminal (eg.. smart phones, iPad, iPhone, computer, etc.), truly realizing the flexibility of learning. Learning mobility has liberated the learning time, space and scene, so that teaching and learning goes from plane to stereoscopic .

2.3 Economy

The biggest advantage of MOOC is that all courses are free of charge. A credit certification after the completion of the course only asks for a few dollars. In view of the growing tuition fee of well-known colleges and universities at home and abroad, the arrival of MOOC, undoubtedly brings blessing for learners with economic pressure. MOOC did the best for the learners to accept the most advanced education at the lowest price.

2.4 Individualization

MOOC makes it possible for learners to learn in an individualistic way. Twenty-four hours free opening of the MOOC program enables learners to manage their time, and they can choose when to learn by themselves. Besides, quality courses from major colleges and universities of the whole world in MOOC offer learners a wide range of choices to learn what and which course according to their own interests and needs. At the same time, in the course of learning, learners can set their own learning objective and evaluate whether the objective is realized by themselves. More conveniently, the learner can play back the content that is not understood in the process of learning.

Feinleib (2014) wrote that "the most interesting role of big data in education lies in that many different educational methods can be tested for students in the adaptive learning system". Because big data analysis can really realize the accurate, personalized understanding of the learning situation of each learner so as to realize the "learner-centered" education.

3. WILL MOOC REPLACE THE TRADITIONAL UNIVERSITY CLASSROOM?: COOL THINKING ABOUT MOOC

It is a commonly recognized pattern: A new technology appears and is massively hyped on the one hand, and cynically dismissed on the other. MOOCs have been

no exception (Field, 2014, p.30). On the one hand, many scholars are enthusiastically advocating MOOC and claiming that MOOC will revolutionize and even replace the traditional way of higher education in the near future. In October 2012, Time magazine published an article entitled "College is dead, long live college!" (the former college refers to the traditional college, while the latter refers to virtual college based on network). Clayton Christensen professor of Harvard Business School forecasted "within the next 15 years, half of the 4,500 universities in the United States will disappear". American scholar Nathan Harden also wrote on *American Interest* that "network technology and a new mode of education will lead to the collapse of the traditional higher education system, a considerable part of the university will disappear. "

While some fervently favor MOOC, quite a few scholars have issued critical voice and pointed out that there are too much hype and myth in MOOC heat and in fact the real implementation of MOOC is full of paradoxes and contradictions (Gao, 2014). So a rational and cool view of MOOC is suggested, which is helpful to fully understand and implement MOOC in practical pedagogy. When realizing the series of convenience brought by MOOC, we should be clear about the drawbacks that may come along in the practice.

3.1 High Autonomy vs. High Dropout Rate

Professor Agarwal Anant, chairman of edX, said in an interview with the Guangming Daily reporter, MOOC requires a strong learning initiative for learners (Deng, 2013). Learning in a MOOC environment is more flexible, mobile, autonomous, but due to the space-time separation of learners and educators online, if there is no strong motivation of learning in learners, MOOC environment in the absence of regulatory measures, can easily lead to learners' failure to finish the course. MOOC's high dropout rate has become a recognized fact in the academic community. Some survey revealed that the completion rate of large open online courses is only 7.2% (Ho etc., 2014). A new study from the Alliance for Higher Education & Democracy at University of Pennsylvania Graduate School of Education reveals MOOC course completion rates average 4% across all courses and ranging from 2% to 14% depending on the course and measurement of completion (Techlearning, 2014).

The high dropout rate of MOOC learning on the one hand can be attributed to the lack of supervision for online learning especially for the learners without the ability of self management and self control. On the other hand, learners are not adaptive to the informal and uncertain cooperative communication in MOOC.

3.2 Fragmentation vs. Systematicity

Based on the experience in micro course construction of Khan Academy, lectures of MOOC courses are mainly delivered in video. Small is regarded as the key in content design and "microchunking" of learning material into tiny, easily digestible pieces is deed as strategic in designing a successful and engaging MOOC (Swink, 2014). So the duration of MOOC courses we can see ranges between a few minutes to several tens of minutes. In order to be tiny, some of the courses have to split, compress, cut, or even delete some content. Some courses are highly systematic and complicated in themselves, so splitting or dividing them into tiny micro lectures may result in the incompleteness and incoherence of the knowledge system. Besides, it is difficult for some courses like experiment or practice to achieve online learning. Further more, the free choice of courses by students themselves without the instruction from teachers has the risk leading to the incompleteness and insystematicity of learners' knowledge structure in certain field.

3.3 Virtuality vs. Humanity

Dewey (1938) presents the purpose of education is to help learners to develop knowledge, skills and attitudes, so that they become effective problem solvers, independent and critical thinkers and responsible members of society. And in this process, experience is essential. MOOC simulates the real environment through the network, realizing the virtual nature of the course teaching. But in this kind of virtual environment, the lack of face to face communication between teachers and students and between students and students will inevitably lead to the lack of the learning experience of the learners.

The teaching process should benefit teachers as well as students. Each in-depth interaction between teachers and students or between students themselves, such as each questioning of the students, each of their involvement in class discussion, will produce the collision of ideas, stimulate inspiration of teaching or/and learning, and encourage teachers and students to think, discover and even find new perspective to interpret a problem. MOOC online video, however, seems to emphasize the teaching of knowledge and skills to students, but weaken the influence of teachers on students' personality, and ignore students' reaction to the teacher and the interaction between students and students.

At the same time, the school atmosphere, campus culture and other software facilities can only be experienced when you step into it. Michael Ross, President of the University of Wesley, said that the human environment provided by the university campus is not replicated in the network teaching (Shen, 2013). The nature of the university education lies in the subtle interaction between teachers and students, and machine can not simulate this interaction, no matter how complex it is. To summarize with what Spence Michael, President of the University of Sydney said in an interview with reporters: The teacher's role, the communication between students and classroom atmosphere can not be and will not be replaced.

3.4 Large-Scale vs. Personalized Learning

Individualization is a big advantage of MOOC. Learners can choose courses according to their needs and interests and the learning process can be self-paced according to their own ability. However, the "massive" feature of MOOC means MOOC courses are accessible to a large number of people. That means learners of the same course can range from the olds with rich experience and knowledge background to the young, inexperienced and poor in the knowledge structure. Video course instructor, unfortunately, is completely unable to take care of these differences. Students can only passively adapt to the teacher, and the teacher can't teach according to the characteristics of each student, or adjust the teaching content according to each student's response.

"Large scale" also means that teachers can not communicate with students in the MOOC environment. Feedback can only be provided through the design of some interactive links, such as multiple choice questions.

Besides, formative assessment is required in teaching .Although the MOOC videos have designed some interactions in the course, most of them are multiple-choice questions, which are rather superficial and can not inspire students to apply what they learn to solve real problems. The summative assessment of MOOC is in the form of certain certificate, which can only show that the students have completed the course of study, but what each learner has achieved and how competent they are in this course is still open to question because there is still not an objective evaluation criterion.

In view of the drawbacks of MOOC, John Field (2014) rationalized that for the next few years, people are likely to see MOOCs largely as a way of supplementing face-to-face provision rather than replacing it. I agree with that.

4. HIGHER EDUCATION REFORM UNDER THE MOOC WAVE---BLENDED TEACHING AND LEARNING BASED ON SPOC

In order to make up for the shortcomings of MOOC, improve the flexibility of education and the degree of participation of students, scholars put forward some models, like blended learning, flipped classroom, SPOC and so on. Blended learning is a broad concept, which means the combination of MOOC mode with some other mode; the flipped classroom emphasizes the adjustment of both inside and outside of class time, watching lectures by students after class and consolidating online learning through projects, presentations, plays and other tasks in class; SPOC (Small Private Online Course), either regarded as a competition of MOOC in the dictionary of Financial Times or a branch of MOOC by Tim (2013), endeavors to overcome the shortcomings of MOOC and provides courses more suitable for certain group of students or learners,

4.1 What is SPOC?

The full form of SPOC is Small Private Online Course, of which "small" refers to the number of students taking the course and "private" means there is restrictions for registering a course and only those reaching the requirement can be accepted. "Small" and "private" in SPOC are set in contrast with "massive" and "open" in MOOC. By limiting the number of students and setting requirements for taking the course, the course design can be more suitable for certain group of students and add more chances for students to complete the learning of the whole course.

SPOC can be 100% online or combine with flipped classroom for different groups of learners. For learners who asks for more flexibility of learning, SPOC offers 100% online learning. Besides the application requirements, they should ensure enough learning time and strong motivation, participate online discussion actively, finish assignments and pass the online tests before receiving their certificate in this course. For learners in school who lack strong ability of self control and asks for more face to face interaction with teachers, SPOC usually blend classroom learning with online learning and flip the classroom teaching with the help of MOOC videos.

4.2 How to Blend?

For school learners, we mainly cover the latter form. The blended teaching and learning is mainly realized through the flipped classroom teaching. The process is mainly like this: teachers assign students to finish the video course after class, and help learners consolidate and apply what they have learned online in class by asking students questions and answering students' questions, and finishing other assignments and learning tasks with students. As the number of students is not so big, teachers can take the students' interests and needs into account in choosing teaching content, and can freely set and adjust the teaching process and pace and the evaluation system.

4.3 Advantages of the New Model

Rather than worrying whether MOOC-based learning will replace the traditional higher education, we can ask and experimentally answer how online learning can supplement the traditional teaching. Online learning relieves teaching staff of drudgery and repetitive toil, allowing instructors to focus their scarce time on higher-value interactions such as tutoring and design reviews.

Besides, SPOC enables teachers to be the real masters of the class. Before class, they can learn and collect online and offline teaching resources for students according to their interests and needs. In class, teachers become facilitators and instructors, organizing students to discuss, offering individualized instructions and solving problems together with students.

Lastly, SPOC emphasizes the complete and in-depth learning experience of learners and enhances the learning

motivation of students, which effectively help avoid the dropout problem and make it easier for learners to get the certificate of the course.

CONCLUSION

No one can deny that MOOC exists and proliferate quickly in recent years. It is none wise to completely accept or thoroughly reject MOOC. A better way is to weigh the pros and cons of MOOC and seek for its combination with the traditional teaching. SPOC, a new branch of MOOC, offers more appropriate learning for school learners and can help teachers successfully flip their class and improve the quality of higher education.

The recommendation for higher education in the future is: for lessons that can be "MOOCable", blended teaching and learning based on SPOC is suggested and learning activities that do not appear to be "MOOCable", such as discussion-based learning, open-ended design projects, and so on, can just be omitted from the MOOC but covered in the classroom setting.

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