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## MOOC and SPOC, Which One is Better?

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### ABSTRACT

The research process has established according to the norms of MOOC and SPOC respectively, set up learning support platform, and arrange two groups of classes of no significant differences in knowledge level and learning styles, based on these two types of platform to start learning respectively. Using data analysis methods to explore the key factors that affect learning effectiveness. The results are that: 1. MOOC and SPOC are not alternative, but parallel. MOOC is fit for non-campus, large-scale education resource sharing, with education fairness as the concept. And SPOC is a special education mode on campus. 2. MOOC well adapts for basic theory education, while SPOC applies to professional skills education. 3. MOOC is more suitable for people with self-learning ability, and SPOC is suitable for students with weak ability to control themselves.

**Keywords:** educational technology, MOOC, SPOC, comparison

### INTRODUCTION

“Internet+” age allows information users to study and communicate on the internet at any time, MOOC (large-scale open network courses) and diversity of new teaching methods and other ways also develops vigorously along with it (Rolf, 2015). Under the continually reform of information environment, teaching of information retrieval course is also exploring its own development continuously (Alraimi, Zo, & Ciganek, 2015). There is no doubt that the beginning of the MOOC development brings the superiority, greatly promoted the reform and development of course teaching in colleges and universities in our country, but also inevitably exposes some problems. The SPOC (small scale restricted online courses) mode, proposed by professor Armando Fox of the university of California, Berkeley starts to attract people’s attention, and the opening of the SPOC mode makes profound changes in the course teaching. MOOC and SPOC which is better? It has become the concern of educational sector.

MOOC (Massive Open Online Courses), refers to the use of the Internet platform sharing, free from time and place restrictions, widely disseminated free curriculum resources. MOOC is based on its large-scale, open, online features, to share the teaching resources of high quality all over the world for the idea (Goldberg et al,2015), combined with educational needs, to provide quality services to learners around the world. MOOC has been widely concerned since its rise (Jordan, 2015). In 2012 MOOC burst development, so the 2012 is also known as the “Mu year”. Three platforms Coursera, edX and Udacity came into being, becoming the most influential MOOC platform. Many universities of the American Ivy cooperated with the three platforms, to participate in the process to export high quality teaching resources to the world.

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#### State of the literature

- MOOCs has achieved great success all over the world, and has brought a great impact on the traditional college teaching.
- But in the teaching practice in universities, the MOOC model does not necessarily have good results. The SPOC model is the revised form of MOOC model in Higher Education.
- In theory research MOOC has begun to cool down, and in universities SPOC is replacing MOOC now.

#### Contribution of this paper to the literature

- By MOOC and SPOC practice teaching, it found that, in higher education, SPOC is better than the MOOC, the student participation rate and completion rate are high.
- The advantages and disadvantages of MOOC and SPOC are analyzed, and it is pointed out that SPOC will not replace MOOC.
- MOOC and SPOC each have their own characteristics. We can't say who is good and who is bad. They tow play different roles in basic theory education, on - the - job learning and continuing education.

In 2013, professor Fox at the University of California Berkeley first proposed a SPOC (small private online course) concept that is small scale private online courses, transliterated as "private broadcast class" (Armando & David, 2014). SPOC is considered as a mixed teaching mode developed in the university classroom application process after the rise of a large scale open online course MOOC (massive open online course) wave (Will, 2013). There are also views that, SPOC = Classroom + MOOC (Armando & Berkeley, 2013). Based on the research results of many scholars, SPOC can be defined as a curriculum education model which applies MOOC teaching resources to the physical campus ("Definition of Small Private Online Course SPOC", 2013). It aims to realize the organic integration of MOOC high-quality curriculum resources and campus traditional classroom teaching in order to give full play to the advantages of MOOC, make up for the shortages of MOOC and traditional teaching, and reverse the teaching process, change the teaching structure, and improve the quality of teaching (Tim, 2014).

SPOC platform as a "school-based" learning platform based on MOOC has been constantly emerging nearly three years (Sean, 2013), such as the Tsinghua University ZhiXue Academy teaching service platform, school online "school cloud" platform, Zhejiang University CNSPOC cloud curriculum platform, love course "school cloud services" platform, superstar PanYa network teaching platform. And in many colleges and universities it plays an important role in the curriculum construction of SPOC.

## METHODOLOGY

The research process has established by the study: first, according to the norms of MOOC and SPOC respectively, set up learning support platform, and arrange two groups of classes of no significant differences in knowledge level and learning styles, based on these two types of platform to start learning respectively. Both of classes have a dedicated class teacher responsible for students' daily management. Then data analysis methods were used to explore the key factors that affect learning effectiveness. Finally, based on the above conclusions of the research, the paper summarized the existing problems and doubts, carried out the second round of teaching practice, in order to verify the conclusions of the research and guarantee the rigor and scientific of the study.

## ANALYSIS

### The Completion Rate in Different Types of Learning

In the courses of 2016, the system set up a maximum of 200 students in the teaching platform to apply for registration, all the applications have been approved by the teachers. At sixth weeks, 176 students withdrew and received 24 students; at the end of the semester, a total of 19 students participated in the final exam, 19 students finished the class. The final completion rate is only 9.5%.

**Table 1.** Comparison of student clicks on video in two learning types

Type	Video Duration (min)	Number of Videos	On-Demand Ratio	Full View Ratio	More than 50 Hours Long Ratio
MOOC	10	124	0.821	0.113	0.377
SPOC	10	124	1.986	0.642	0.165

**Table 2.** Comparison of Effective Interactions between Two Types of Models

Type	Total posting	Subject posts total	Reply total amount	Effective total amount	Effective ratio
MOOC	2154	756	1398	112	5.20%
SPOC	2932	315	2617	2735	93.28%

In the courses of 2016, a total of 80 students registered for this course because of the prior regulations “only the sophomore students should be allowed to take this course”, and the teacher approved 80, to sixth weeks, there were 47 students enrolled in the course. At the end of the semester a total of 47 students participated in the final exam and 47 students have passed this achievement, namely 47 students have finished class. Therefore, in the selected students, the completion rate reached 59%.

After the interview found that many students’ elective enthusiasm is high. But after the registration of the course, you will find that due to lack of prerequisite courses, resulting in their difficulty in course content, and finally only rejected. In addition, some students is very interested in the beginning of the course, the enthusiasm is very high, but because of the ability of individual time management is not strong, leading to insufficient investment in course in its early time. This part of the students’ final rate of withdraw is also very high.

### Video on Demand Rates in Different Types of Learning

MOOC platform in the management of students, the teacher only in the form of announcement requires students to self-on-demand the teaching platform within the micro-video or classroom recording video, and does not put the quality of students’ on-demand video and the end of the comprehensive evaluation linked.

SPOC has limited the selection and qualification of students, and clearly pointed out to students: the length of time that students watch the video, the quality and quantity of students participate in the teaching forum are automatically recorded, and as the sub-index comprehensive evaluation at the end of semester.

In **Table 1**, on-demand ratio, the number of students who are on demand is divided by the number of students selected and the number of videos. The full view ratio is the number of students who have completely watched divided by the number of students and the number of videos. More than 50 hours long ratio is the number of students who watch more than 50 times divided by the number of students selected and the number of videos.

Through the comparison of two types of students’ learning patterns, it is found that all the learning indicators of SPOC are better.

### The Rate of Effective Interactions in Different Types of Learning Patterns

According to the situation of student posting and replies under the type of learning mode, from the side it can reflect from students’ participation in collaborative knowledge construction in level and depth. The topic posts and reply posts related to curriculum content are defined as “effective post”, other types of posts are called “invalid posts.” According to the situation that students participate in online discussion, the main data are obtained as followings.

**Table 2** shows that the number of MOOC students posting although a lot, but the proportion of effective posts is low, only 5.20%. The number of SPOC valid posts has accounted for 93.28% of the total amount of posts, which means that in the forum posting, most posts are effectively related to the curriculum content. In addition,

**Table 3.** Comparison of MOOC and SPOC

Number	Comparison of dimensions	MOOC	SPOC
1	Openness	Completely open	Have access restrictions
2	Learning form	Completely online	Teacher-led, Teaching monitoring
3	Learning costs	Almost free of charge	Course fees
4	Evaluation methods	Online test	Online and offline combination
5	Teacher-led	Teachers are not counseling	The teacher follows the student's learning progress
6	Student feedback	Per capita lower	More per capita, more timely

the number of MOOC theme posts is relatively larger, the content of the discussion is also very scattered. While SPOC post focus is higher, each topic posts have a relatively high response.

## DISCUSSION

Although MOOC and SPOC are not very different in terms of the technical platform, learning resource type and curriculum system structure, but in the teaching design and teaching management idea, teaching process organization, teaching operation method and so on, MOOC and SPOC have their own characteristics, the difference between the two is found, it mainly reflects in the following aspects, such as **Table 3** shows.

Now, let's analyze the Advantages and disadvantages of MOOC and SPOC.

### MOOC's Advantages and Disadvantages

#### *Advantages of MOOC*

##### 1. Share quality resources anytime, anywhere

MOOC provides a large free interactive learning platform for students to facilitate the exchange of students in various colleges and universities to carry out learning and exchange activities (Armando & David, 2014). The network space narrows the distance between people, to meet the needs of students at any time learning exchange. Students' learning is no longer limited by geographical location, class time, classroom space, etc., as long as you have the will to learn, you can join the learning platform, share your learning experience for the course, and put forward your own doubts, get answers in communication. Moreover, MOOC breaks through the traditional teaching process of the number of restrictions (Tapson, 2013), allowing all students with course will to join the classroom, learning together, study together.

##### 2. Active learning

MOOC makes students change from passive to active. Firstly, MOOC relies on the internet platform, save the whole process of the teaching, the students are allowed to review it at any time; The learning model can solve the most of the doubts in student learning process. Secondly, after the completion of the course video viewing, students need to complete a small test, and put forward problems in learning forum according to their own needs, get the answer in the discussion. Online communication discussion effectively helps students change passive acceptance of the learning pattern, the learning results is entirely in their own hands.

##### 3. Multiple evaluation mechanism

The multi evaluation system of MOOC uses to solve the problem of traditional teaching mode "one paper will be life and death", which can fully reflect the students' learning effect. First, complete evaluation of the learning process. Students in the process of watching the video, MOOC background will record the learning behavior, according to the completion of video viewing and small test results, the usual results will be given. Next, it is the comprehensive evaluation of final examination. Students participate in online final test; MOOC background will be the corresponding record. Once again, truthfully reflect the teachers' evaluation. Teachers according to the

performance of students in class, the enthusiasm of the question on forums, the quality of the questions evaluate students, and record in the background of the MOOC.

#### **4. Instant feedback**

If students encounter doubts in the learning process, they can put forward their own problems at any time in the online learning forum. Teachers online, assistants or students who participate in the same period can participate in the discussion, give the answer. In addition, after the students finish their homework, they can carry out mutual correction. Such a model ensures that students encounter problems can be immediately answered, without doubt, ensure the understanding of focus and difficulties courses timely, improve the learning efficiency.

### *Disadvantages of MOOC*

#### **1. The rate of returning classes remains high**

It was found that returning class rate of MOOC compared with the traditional model has been higher. Firstly, learners are inert. At the beginning of the elective course, the number of registrars was large, the learners were interested and have a strong desire to learn; with the passage of time, the enthusiasm of learners involved in the rapid decline, adherence is poor. Secondly, the exit threshold is low and the exit cost is low. Because there is no limit to exit the MOOC class, do not need to pay the price, it will also lead to a certain extent, the reduction of enthusiasm and the lack of persistence.

#### **2. The number of students elect courses is too large**

In addition to students can not adhere to lead to high rate of retreat, MOOC's large scale also bring some problems to the teachers. Because MOOC allows interested students to participate in the course, which may cause the phenomenon of excessive number of students, it brings too heavy burden of the curriculum to teachers. Compared to the traditional teaching model, an elective course can only accommodate about hundreds of people, and some popular MOOC breaks through this limit, the number of students can reach thousands of people, or even more. Although the basic knowledge points have been passed to the students in the form of the video, but Q & A, management forums and other related parts will also bring some the pressure to the teachers.

#### **3. Authority questioned**

After the students completes the MOOC learning, the platform will give students the corresponding credits, and award a certificate, the students' whole learning process will be recognized. However, due to the popularity of MOOC is not enough, some of the students after the completion of the MOOC study, cannot use MOOC credits deduce school elective credits. In addition, some employers do not admit the authority of the MOOC curriculum, and question the learning effect and rating system are, these affect the enthusiasm of the students to learn MOOC. Coupled with the lack of network learning monitoring, resulting in "instead of learning" "cheating" and other behavior in the learning process, it also affects the credibility of MOOC.

### **SPOC's Advantages and Disadvantages**

#### *SPOC advantages*

#### **1. Learning resources is personalized**

SPOC do not emphasize the various and complete of resource, but emphasize on personalized characteristics of resources (Armando & David, 2014). According to the student's age characteristic and the cognitive style, respectively, provide students learning resources with the text type, PPT type, video type of, and organize teaching activities accordingly.

## **2. Strong severability of the division Video resources knowledge**

In the platform based on SPOC concept, should use less big classroom activity type video as far as possible (more common in the platform of MOOC), but the micro video oriented to knowledge. Emphasis on the short, small, fine of the video resources, emphasizes the targeted contents to the case, and learners' adaptability.

## **3. Prevent hidden guest, real-time management**

SPOC request all students use real name, which is helpful prevent the appearance of Implicit guest (students who browse only without reply), for a learning community study BBS. Abound guest existence is not conducive to the communication among students is not conducive to the collision of ideas. And thus, the purpose and meaning of BBS will be lost (Brinton, Rill, & Ha, 2015), so to prompt the communication, and the discussion between students. It is necessary to solve the hidden guest phenomenon. Encourage students to publish their views freely, actively and boldly, enhance interaction and communication among students. The real-time supervision and management to students, can write down every learning steps for each student's, and can feedback the records to students in time, to guide the students' learning process, to give full play to teachers' leading role, and stimulate students' external learning motivation.

### *SPOC disadvantages*

#### **1. Restricted number of students**

SPOC is the network resources enjoyed by part of the people who pay for it, not for other students who could not or unwilling pay for it, which is different from the resource sharing concept of MOOC.

#### **2. The unitary thought of students**

SPOC has limitations to student's qualifications, most of the time the students were differentiated between the liberal arts and science. Although the first-choice rate had very great enhancement benefit from this, but it is bad for some cross major students' learning.

### **CONCLUSIONS**

We could not simply say that MOOC is better than SPOC, or say that SPOC is better than MOOC. While can only say that MOOC or SPOC is more suitable for different teaching content, teaching goals and teaching objects.

1. MOOC and SPOC are not alternative, but parallel. MOOC is fit for non-campus, large-scale education resource sharing, with education fairness as the concept. And SPOC is a special education mode on campus.

2. MOOC well adapts for basic theory education, while SPOC applies to professional skills education. MOOC builds a new platform for large-scale education popularization. Through the carefully designed video in MOOC, learners can quickly understand the theoretical content in books. And the MOOC is beneficial to minimize the rural-urban education divide (Ming, 2017). Professional education requires a great deal of interaction and practice, which cannot be experienced by the learners in person online, so SPOC is more appropriate.

3. MOOC is more suitable for people with self-learning ability, and SPOC is suitable for students with weak abilities to control themselves. Discovered by analyzing the user data in 2012, 10000 students from 113 countries won the MOOC all courses at the universities of California, Berkeley, about three-quarters of the learners have a college degree and have a full-time job. People need a variety of knowledge in their career, but the professional education in university cannot meet all needs. But MOOC's massive sharing remote education can achieve the employees' career target. And on-the-job students and continuing education students generally perceive themselves as sufficient in the curriculum development via distance education (Deniz & Zeynep, 2016). Lots of students in campus don't know what actual needs of knowledge in future career, even if the designed

perfect MOOC course within sight, they will not necessarily go to choose, so that the pattern of SPOC is more appropriate for students who need to guide.

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