Research on the Construction Strategy of MOOC Online Learning Platform Based on OBE Concept

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Abstract. With the development of technology and society, online education represented by MOOC had risen rapidly and was warmly welcomed by learners around the world. The drawbacks of the low rate of MOOC certificate acquisition had also been exposed, which was contrary to the OBE philosophy of learning outcomes. Therefore, this paper analyzed the data information on the MOOC platform and proposes an improved strategy to effectively improve the learning effect of students and the rate of certificate acquisition.

1. Introduction

1.1. MOOC

MOOC is a massive open online course. It is a new online learning network platform jointly launched by Harvard University and Massachusetts Institute of Technology in 2012. In May 2014, the iCourse of China and NetEase cooperated to launch our country's independent MOOC platform-"China University MOOC".

It can be seen from the full name of MOOC that it contains three characteristics: large-scale, open, and online\cite{1}. This made the MOOC platform gathered hundreds of high-quality courses from major universities around the world. Anyone can find and learn these high-quality courses on the MOOC website without being restricted by time and place, and realize open sharing. Therefore, MOOCs had been warmly welcomed by learners all over the world. With the continuous promotion of MOOCs, the drawbacks of online learning had also been exposed. MOOC was an online learning method, which mainly relies on the self-consciousness of the learner. Putting the course on the Internet depending on the learner's learning motivation. The main basis for judging whether the learner had completed the course is based on some online data to determine whether the learner was qualified to obtain a certificate, that is, whether the course was "pass"\cite{2}. For a certain 15 courses offered on MOOC, the survey results of the course's certificate acquisition were shown in Figure 1.
As could be seen from the above figure, the number of learners registered for each course on MOOC was large, but the certificate acquisition rate was very low. This was inconsistent with the outcome-oriented OBE concept proposed by the current global education and teaching reform.

1.2. OBE Philosophy

In June 2013, our country joined the "Washington Agreement", which marked the official start of the professional certification of engineering education in our country[3]. The engineering education professional certification follows the three basic concepts of "result-oriented", "student-centered" and "sustainable development", among which the "result-oriented" is the mainstream education reform concept in developed countries[4,5].

Outcomes-based education refers to the educational model based on learning output (Outcomes-based Education) abbreviated as OBE. This educational concept first appeared in the United States and Australia and was widely welcomed by the education community. In his book "Output-Based Education: Justice and Answers", the scholar Spatty defined OBE as "clearly focusing and organizing the education system to ensure that students gain the experience of substantive success in future life."

To sum up, in this general environment where the OBE concept in the direction of education and teaching reform, the course learning strategy of MOOC, a new online learning method, must be optimized to improve the phenomenon of low certificate acquisition rates. Therefore, this article analyzed and summarized the relevant information data of the courses and learners stored on the MOOC online platform to find the main factors that affect the learner's certificate acquisition, and proposed relevant teaching strategies to improve the learning efficiency of the learners. In order to increase the certificate acquisition rate of MOOC learners, the OBE concept is integrated into MOOC learning to meet the needs of educational reforms of the times.

2. MOOC Data Analyzed

This part mainly analyzed the data obtained from the MOOC platform to find the main factors that affected the rate of learner certificate acquisition. In this part, it was mainly divided into two categories: the first category is to analyze the information on the course; the second category is to analyze the information of the learners.
2.1. Course Data Information

The basic information for the course includes the institution that opened the course, the time of the course, the name of the course, the lecturer, etc.; the data related to the learner mainly includes the number of course participants, the number of certificate holders, and the number of learners who completed the course is 50%, the percentage of people who played audio and video of the course, and the percentage of people who posted in the course forum, etc. Next, this article analyzed the above indicators one by one.

First of all, the following figure 2 was the basic statistics of the institutions that offered courses on MOOC. Most of the institutions on this platform were world-renowned institutions, which could guarantee the quality of the course content.

![Figure 2. Course offering institutions.](image)

Taking a certain fifteen courses on MOOC as an example, compared the four indicators of the number of participants, the number of students who completed 50% of the course, the number of people who watched the video, and the number of posted on the forum with the number of people who had obtained certificates, as shown in Figure 3. It could be seen from the figure below that watched the course video, posted on the forum, and completed 50% of the course had a certain impact on whether to obtain the certificate, but the completion of 50% of the course had a greater impact on whether or not to obtain the certificate. It was a proportional trend. From this, it could also be seen that, relative to the information on some courses, the self-learning awareness of learners would take a dominant position on whether they would obtain certificates and passed the exam. Therefore, the MOOC platform would take some measures to promote learners to learn independently.
2.2. Basic Learner Information

Figure 5 below shows the basic information distribution of learners in a certain ten courses in MOOC. The first five of these ten courses were natural science courses and the last five literature courses. The basic information about the learners included the average age of the learners of each course, the ratio of male to female, and the distribution of educational backgrounds.

In Figure 5, it could be seen that the proportion of men in natural science courses was significantly higher than the proportion of women. Female learners were better at learning literature courses than in natural science courses. On the whole, men compared with women, they preferred to learn through online learning platforms; while the age of learners doing online learning was mostly between 20-30 years old, the age of the learners of literature courses was a bit older than that of natural sciences. On the one hand, a large proportion of learners with a bachelor’s degree or above. It could be seen that with this new type of online learning, young people and highly educated people were more inclined to choose this method for learning, and men account for a larger proportion than women.

From an overall point of view, the personal information about comprehensive learners combined with the certificate acquisition rate of the course was shown in Figure 5. It could be found that the
acquisition of the course and the proportion of female learners in the course was basically positively correlated, although there were a large number of male students taking courses, the proportion of obtaining certificates was relatively low; secondly, the second factor in the basic information about learners that affected obtaining certificates was the distribution of learners’ academic qualifications. From this, we could find courses with a large proportion of highly educated learners, Its certificate acquisition rate was relatively high.

3. Measures

Through the above analysis, the MOOC online learning platform can be improved from the following three aspects when building courses to effectively prevent the phenomenon of the low certificate acquisition rate.

First, by analyzing the distribution of learners' basic information, it is found that male learners are more inclined to choose online learning than female learners, and this new learning method is more popular for young and highly educated learners. Therefore, when learners log on to the MOOC platform website, learners’ basic information is used to intelligently recommend course modules that learners will be interested in. For example, female learners can recommend more courses related to literature and art; while for male learners, natural science courses can be recommended.

In terms of curriculum, the quality of the courses on the MOOC platform is very high, but the main reason for the low certificate acquisition rate of learners depends on the learners’ autonomous learning awareness. Therefore, based on the OBE educational philosophy, MOOC can not only set up some interactive modules in terms of boring video playback, forum postings, etc., to attract learners in a more flexible way with rewards and punishments. Learning interest, improve learning initiative.

Finally, although the courses on the MOOC are all from world-renowned institutions, the learners’ attention is easily distracted without the presence of teachers, which also affects the learning effect of the final learners. Therefore, in terms of course content, some interesting small interactions can be set up to attract the attention of learners, avoid the accumulation of boring theoretical knowledge, so as to make learners feel afraid of difficulties, and eventually drop out and fail the course.
4. Conclusion

In the ever-evolving society, the promotion of “Internet + education” is an impact on traditional education, and it is also a challenge to online education. How to effectively motivate learners to study without teacher supervision is still a problem. Taking the OBE concept as the guiding ideology of the online learning platform and integrating the result-oriented and student-centered new teaching ideas into the online education construction process is destined to open a new door for online education. The study will also provide a new way of thinking for future research.

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