An Empirical Study on College English O2O Teaching System Based on MOOC Education

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Abstract

The combination of the Internet technology and education is an impact on the traditional education concept and model, which will lead to the transformation and upgrading of China's higher education. Among the numerous online education platforms, MOOC is impacting the traditional teaching mode with the trend of rapid development. Its emergence has injected new impetus into the reform of China's English education, and learners can have diversified English learning at the MOOC platform, which makes English learning more convenient and fragmented. Therefore, if we want to promote the development of MOOC education, we should analyze and study its current situation and inner mechanism in order to make innovations in it better. Based on the task-based approach in education, in this paper, the author conducts an empirical study on college English O2O teaching system of MOOC education by means of questionnaire survey, the main contents of which are to investigate the level of awareness and satisfaction of learners in MOOC English teaching. Through the analysis of the survey data, we can see that most learners know little about MOOC education, but they are willing to try. Through the exploration of learner's awareness of and behavior differences in learning, the author intends to provide experience for the development of MOOC English education.

Keywords: MOOC Education, College English, Teaching System, Empirical Study.

1. INTRODUCTION

1.1 Background

With the rapid development of information technology, the cause of education has made great strides. The new development model of "Internet + " is a combination of information technology and various traditional industries, including education. In 2012, there are 3 Internet learning platforms internationally, namely, Coursera, Udacity and EDX. Since 2013, many well-known institutions of higher learning in China have also started to develop web-based education platforms. For example, MOOC, xuetangx.com and other online learning websites, which make it diversified and more convenient for students to acquire resources in learning. In this context, MOOC's social status has been raised and becomes one of the teaching service platforms in the national educational resources system (Wang and Yu, 2014). Therefore, although there are increasing researches on the characteristics, development and educational atmosphere of MOOC, there are still few empirical researches on college English O2O teaching system based on MOOC education and how to stimulate students' interest in learning based on MOOC O2O learning platform and adjust the relationship between online and offline learning effectively is the focus of current research.

1.2 Literature Review

There are 4 core factors in MOOC education environment, which are performance expectation, effort expectation, social influence and convenience condition. In the UTAUT model, the performance expectation, effort expectation, social influence and convenience condition become the 4 core factors in MOOC education environment. It exists in the form of a kind of variable in the mobile system and affects students directly with different factors acceptance of new technologies (Li, 2015). Among these 4 core factors, performance expectation means effective parameters of cost for obtaining education; effort expectation is the information cost and output of the students when receiving the mobile learning; social influence refers specifically to the intrinsic mechanism of MOOC English learning; convenience condition refers specifically to the cost-effective measures of receiving distance education (Wang et al., 2015). Through the method of online education, student behavior
can be further studied, and students can make use of the platform to understand the subject knowledge to get the way of understanding of mobile learning. Students want to acquire knowledge information in mobile learning, which contains performance expectation and social influence having a positive impact on behaviors (Huang, 2015).

2. COLLEGE ENGLISH O2O TEACHING SYSTEM OF MOOC EDUCATION

O2O means "online to offline" and O2O teaching model is an online to offline teaching model. O2O teaching model is characterized by the combination of online and offline teaching, which combines the development of the Internet and classroom teaching innovation. According to the research on college English O2O teaching system of MOOC education in recent years, O2O as an online teaching link is in the form of teaching videos, related knowledge and quiz. On the platform of education with Internet technology, the difficulties in English teaching can be in a short and concise video, which can be learned by students before and after class. Offline teaching is not only the main way for students to learn, but also a supplementary way to online teaching. Teachers can adjust the channels in time when there are problems in the teaching of network platform, explain the knowledge in detail and correct the mistakes so as to ensure the quality of students' English learning. In the online teaching system, there are some connection points, which are the combination and support between the courses, forming a complete knowledge network. Therefore, the online college English teaching system of MOOC education will enable students to learn the knowledge closely related with the society, so as to carry out effective learning. In this online learning system, online learning and offline learning complement each other and serve students' English learning. The O2O mixed teaching flow chart is shown as follows:

[Diagram of Online And Offline Mixed Experiment Teaching Flow Chart]

3. ANALYSIS AND PREDICTION OF COLLEGE ENGLISH O2O LEARNING BEHAVIORS IN MOOC EDUCATION

O2O (Online to Offline) learning is a combination of online and offline learning that provides students with a more convenient way to learn (Huang, 2015). To further understand the characteristics of this online learning system, O2O data can be analyzed. For example, due to its characteristics and influence, the traditional analysis of sampling learning behavior is restricted in the feasibility analysis of O2O English learning. Therefore, it is necessary to make use of big data to analyze and predict O2O learning behaviors in MOOC education - select typical characteristics of students' learning behaviors, carry out data training, establish college English O2O learning behavior analysis and prediction model based on big data, and then confirm the effect of college English O2O teaching system of MOOC education. Through the analysis of students' learning behavior data, we can draw learning behaviors with the main characteristics, such as video learning, submitting homework and so on. Divide the learning outcome into 5 grades, namely, excellent, good, medium, pass and fail. Assuming that there are n students in each course and each student has p eigenvalues, then:

\[
X = \{X_{i1}, X_{i2}, ...X_{ip}\} \forall i(1,2,...,n)
\]

(1)
According to the different ways of English learning, the training set, test set and verification set are unified to cross-validate the data set. Select the reference values in the training set, carry out parameter optimum in the validation set, and use the test set for assessment (Wang, 2015). Carry out training, validation and testing by using linear programming analysis, logistic regression, support vector machines and other classification methods, and finally use the integrated classification algorithm to establish a classification model, and finally, after k rounds of training, the classification model sequence is:

\[
\{C_1(x), C_2(x), \ldots, C_k(x)\}
\]

Form a multi-classification model through them, and the final classification result can be expressed by the following formula:

\[
C(x) = \arg \max_y \sum_{i=1}^{k} |(ci(x) = Y)|
\]

Where, \( C(x) \) represents the integrated classification data model, \( ci(x) \) is a single classification model, students' grades in micro-course O2O learning system. Based on the analysis of the college English O2O learning behaviors of MOOC education by using big data, the data value and development trend of this teaching system will be more intuitive (Sun, 2015).

4. DESIGN OF RESEARCH ON COLLEGE ENGLISH O2O TEACHING SYSTEM OF MOOC EDUCATION

4.1 Research Methods

Based on the theoretical support of task-based pedagogy, the author of this paper surveys the students' satisfaction with the English teaching system of MOOC education by means of questionnaires, and explores the students' acceptance of and satisfaction with MOOC English courses.

4.2 Objects of Research

The target group was a group of students who studied English online through MOOC in schools of foreign studies. The average age of students surveyed was 20.2 years old and the sex ratio is 5: 5. First of all, the criteria for selecting interviewees should be broad and detailed data collection should be conducted. Therefore, the age range should be broader to avoid over-concentration of groups which would make the experimental results untruthful. Secondly, the sex ratio should be even to minimize the impact of gender difference on experimental results.

4.3 Research Tools

At present, there is no authoritative teaching system cognitive status scale in China, so after studying and interviewing students from schools of foreign studies, after referring to the relevant standard scale of cognitive psychology and combining with the questionnaire, the data are analyzed and processed, and the "Questionnaire on Satisfaction with the MOOC English Teaching System" is finally developed (Li and Lin, 2016). The questionnaire mainly involves 5 parts, namely, personal information, use, understanding, user experience and comparison with the traditional offline teaching. In the investigation, we should pay attention to protecting the privacy of others and tell the respondents that this questionnaire is for academic research only so as to reduce the psychological burden of them and make the questionnaire to be filled out more efficiently.

In the questionnaire, the itemized rating scale is the main tool, there are a number of related single-choice questions using 5-point scoring method, and the corresponding value is 1-5 points from complete to incomplete. The questionnaire also involves ranking scale, the relative factors of the research are to be ranked, for example: compared with the traditional teaching, what are the benefits of MOOC in English teaching? To sum up, this method has strong rationality and can be used as a tool for studying MOOC in college English O2O teaching system (Chen and Wang, 2016).
4.4 Sample Analysis

In this study, a total of 700 questionnaires were distributed, 681 valid questionnaires were collected, of which 551 are from undergraduates and 130 are from postgraduates. The conditions of the samples of 651 students surveyed are shown in Table 1:

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Gender</th>
<th>Grade</th>
<th>Major</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Graduate Student1</td>
</tr>
<tr>
<td>Number</td>
<td>305</td>
<td>376</td>
<td>293</td>
</tr>
</tbody>
</table>

5. EXPERIMENTAL RESULTS AND ANALYSIS OF COLLEGE ENGLISH O2O TEACHING SYSTEM OF MOOC EDUCATION

5.1 Students Know Little About MOOC

As for the question “Do you know about MOOC?” in the questionnaire, 85% of students said they knew nothing about it and 76% said they had not heard of it. Among the 681 students from schools of foreign studies surveyed, only about 8% learned about MOOC, and only 36 students registered and studied in a MOOC learning system, of whom only 2 completed all courses and earned MOOC certificate. From a gender perspective, female students (M = 1.74) knew more about MOOC than male students (M = 1.81), while the undergraduates and postgraduates had equal values (M = 1.77). As for the comparison between students of liberal arts (M = 1.64) and students of science & engineering (M = 1.83), the former have a better understanding of MOOC (Xu and Liu, 2016). Among the 681 students surveyed, 163 said they had heard of MOOC, but only 66 studied on a MOOC platform and only 36 officially registered. However, only 2 completed all courses and earned MOOC certificate. We can see that students know little about MOOC.

5.2 Students are Relatively Receptive to MOOC

In this survey, only 8% of the students heard about MOOC and they generally had a low understanding of MOOC. At present, students mainly learn by teachers and by themselves. However, of the 681 students, 35% showed a neutral attitude toward MOOC and 67% of students said they would be willing to try MOOC if they had a chance. When comparing MOOC English education and traditional English education, it is found that each of the two teaching methods has half the support ratio.

5.3 Advantages of Empirical Study on Cognition of Mooc Education

In order to know more about students' cognition of and attitudes toward MOOC education, the author of the paper investigates the English learning model, impression on teachers and the classroom atmosphere in traditional classrooms in the questionnaire, including the reasons for their interest and why they fell bad. Among the 681 students, the impression value of teachers was (3.79 ± 0.6). Among them, 55.4% of the students had a good impression on teachers, 44.2% of the students remained neutral and only a very small number of students had a bad impression on the teachers, which was influenced by individual subjective emotions (Zhou, 2016). It is noteworthy that students' attitudes towards teachers become positively correlated with age as they grow older. Students who had studied MOOC had better impressions on teachers than the overall mean (3.67 ± 0.5). The factors that affect the attitude of the students to the teachers are, in order, the teaching methods, personal charisma, academic status, condition at class and the amount of homework arranged. The bad impressions were mainly due to the classroom atmosphere being too depressing and less communication between teachers and students.

It can be seen that MOOC teaching has obvious advantages in some aspects compared with the traditional teaching mode. According to the survey, students who prefer MOOC teaching think it is easier to learn, free from time and space constraints, and is free of charge. 80% of the students said they would not learn the course if they paid for it (Pan, 2016). The two options having the highest degree of acceptance are free class time and
lecturing by well-known teachers. Students believe that free class time is attractive, which saves the time to classroom and has no restrictions. Lecturing by well-known teachers breaks the geographical restrictions, allowing students the freedom to choose what they learn. In addition, the MOOC platform being rich and convenient in information resources and having diversified curriculums and no examination are the advantages attracting students (Zheng et al., 2016). The specific characteristics attracting students are shown in Table 2.

<table>
<thead>
<tr>
<th>Advantages of MOOC</th>
<th>Ranking</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free</td>
<td>1</td>
<td>98</td>
<td>13.0</td>
</tr>
<tr>
<td>Time freedom</td>
<td>2</td>
<td>90</td>
<td>12.7</td>
</tr>
<tr>
<td>Famous teacher</td>
<td>3</td>
<td>85</td>
<td>11.3</td>
</tr>
<tr>
<td>Elective freedom</td>
<td>4</td>
<td>62</td>
<td>9.4</td>
</tr>
<tr>
<td>Convenient interaction</td>
<td>5</td>
<td>57</td>
<td>8.6</td>
</tr>
<tr>
<td>Novel teaching</td>
<td>6</td>
<td>33</td>
<td>5.2</td>
</tr>
<tr>
<td>No test</td>
<td>7</td>
<td>16</td>
<td>2.5</td>
</tr>
</tbody>
</table>

5.4 Empirical Study on Cognition of Mooc Education Development

Through the questionnaire on the study of motivation and learning efficiency issues, we can also see the shortcomings of the MOOC education system, and there is still much room for its development in China.

We should learn from successful experiences of MOOC education in developed countries and develop it with the current situation of education in China (Li, 2017).

For example, among the 3 mainstream MOOC education platforms, namely Coursera, Udacity and EDX, EDX has courses jointly developed and designed by Tsinghua University, Peking University and the University of Hong Kong and other world renowned universities. Coursera, another important platform, is also working with NetEase to develop a Chinese course platform (Gu, 2017). Through the combination of experience and reality, the development of MOOC English education can get back on track as soon as possible in China's education.

6. CONCLUSIONS

As of today, MOOC has developed into a form of education attracting tremendous attention in the society. As the most characteristic mobile learning method, its application in education has also received unanimous praise. MOOC English education advocates that learning can be more convenient, and it respects for situational teaching and sharing of resources. Great progress have been made in both the development of curriculums and the innovation of technology applications. In the college English O2O teaching system of MOOC education, students are transformed into the teaching subject, and learning through the network and the client is not limited by time and space. The characteristic of being able to assess the progress and effectiveness of learning is the key to the students' acceptance of the college English O2O teaching system of MOOC education. It also makes MOOC easier and more exciting and stimulates students' interest in learning, self-efficacy and learning intention, etc. (Bai, 2017). If we want to let MOOC play a bigger role in education English education, we need to step up our efforts to popularize it among more students.

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