

Research and Implementation of MOOC-based Online Non-real-time Discussion-based Teaching Mode

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Abstract. In order to compare with the traditional teaching mode, the discussion-based teaching mode is student-centered and has strong advantages in teaching form, objective, content and teacher-student relationship. With the continuous development of Internet technology and modern education technology, the superiority of MOOC applied in the mode of discussion teaching has been fully demonstrated. The study is aimed to put forward a discussion teaching mode based on MOOC. Firstly the work analyzed MOOC and discussion-based teaching mode, then discussed the construction of innovative teaching mode and the specific implementation plan in the database technology course, and finally, it put forward provide reference for related teaching reform research.

1. Introduction

With the development of higher education in China, discussion-based teaching has always been a hot spot in teaching reform in colleges and universities[1]. The common methods used in discussion-based teaching include classroom group discussion, flipped classroom, class presentation, etc. At present, most of the courses in our university are taught by lecture-style teaching methods, and some courses have adopted discussion-based teaching, but the discussion work is completed within limited class time. In addition, courses in our university are mostly taught in medium class (70-80 students) and large class (above 100 students), which have large numbers of students and poor student participation, so the current discussion-based teaching method cannot achieve a satisfactory teaching effect.

2. Existing Problems

Through surveys, most teachers generally believe that it is urgent to reconstruct the current discussion-based teaching mode to solve the following problems:

2.1. Balance the teaching of theoretical knowledge and the promotion of discussion-based teaching effect

For the study of a course, the teaching of theoretical knowledge is certainly important, but the active participation of students is also critical, so it is crucial that how to allocate the time for these two in the limited class time. Currently, the discussion contents of the courses adopting the discussion-based teaching method are mostly completed in the class. Classroom teaching time is very precious, and in almost every theory course, there shall be corresponding teaching tasks to be completed. In this case, the time for students to participate in the discussion is extremely limited, and discussion-based teaching exists in name only and cannot enable students to actively participate in teaching, which greatly affects the desired effect of discussion-based teaching mode[2].

2.2. Large number of students and poor participation in discussion

At present, the number of students is large in classes of our university, and teachers usually adopt the grouping method to implement discussion-based teaching. Practices have proven that the actual participation of students is not high, as some students with a poor self-discipline in the group

do not take the discussion activity seriously, reap other students' results, or even give up the discussion directly[3]. In addition, the effect of students' participation in discussion is limited. Before the discussion course, some students cannot correctly understand what to prepare and what to answer as required by teachers, which makes these students an onlooker of the performance of a few well-prepared students. If things continue this way, outstanding students will be more interested in and benefit a lot from the discussion course, while those students who fail to keep up with the pace of discussion at the beginning will lose their confidence in learning. In the limited class time, teachers cannot consider and guide every student in groups, or the discussion course will be a mere formality and poor in teaching effect.

2.3. Some students are introverted and ashamed of expressing their discussion points

At present, the discussion-based teaching mode in the class is not ideal for students with introverted personalities. In the real classroom, students have a fear of teachers, and they are afraid of being criticized by teachers for an incorrect answer. Besides, the students around also cause certain psychological stress. Although some students have made a lot of preparations, they finally waive to freely express their opinions, and even avoid speaking. These students are psychologically unwilling to accept such teaching mode, which greatly affects the teaching effect.

3. Proposed Objectives

With the continuous progress of "Internet + Education" under the context of big data, we rely on the existing MOOC course -- MySQL Database Programming led by Kunming University of Science and Technology (as one of the lecturers of this MOOC course, the study leader participated in the course construction and teaching) and reasonably use the discussion board of this platform to implement online non-real-time discussion course for students in the course of Technique of Database of 2018 Grade Data Science and Big Data Technology Major. The course is characterized by "online" being after-class and no restriction on class time, and combines MOOC resources and discussion-based teaching method. Through reasonable design, we intend to discover an online non-real-time discussion-based teaching mode under the context of "Internet + Education". The specific research objectives are as follows:

- ① Research and implement a MOOC-based online non-real-time discussion-based teaching mode;
- ② Construct a set of effective teaching plans and improve students' independent learning capability;
- ③ Incorporate discussion-based teaching into the final assessment, and establish a brand new assessment system;
- ④ Study of the teaching evaluation system in this teaching mode.

4. Way to Implement the Teaching Model

This teaching reform is carried out in a point-to-area way, we rely on the existing MOOC course -- MySQL Database Programming led by Kunming University of Science and Technology and reasonably use the discussion board of this platform to implement online non-real-time discussion course for students in the course of Technique of Database of 2018 Grade Data Science and Big Data Technology Major.

The specific implementation plan of this subject research is divided into five stages:

Stage I: teachers formulate and publish discussion questions based on syllabus contents, and open the discussion permission and duration;

In stage I, teachers publish discussion questions that are suitable for students' ability based on syllabus contents, and then give students adequate time to make preparation according to the difficulty of questions and open the discussion permission. The discussion duration shall be subject to the duration of the popularity of general discussion top posts online, and the discussion course shall not be opened for too long and is advisable to be 2-3 days. The discussion requires clear

explanation of requirements so that students can make better preparation before the discussion[4]. In addition to independent completion of the questions, attentions shall be also paid to carry out discussions.

Stage II: teachers organize students to carry out online, non-real-time and free discussions on the discussion board;

At this stage, teachers mainly play the role of guidance and supervision. Teachers organize students to have interaction and discussion online in order, and control the pace and direction of the progress of activities. Thereby, teachers are into teaching organizers, guiders and instructors[5]. Students become the subject of the class, so they take the initiative in the discussion and have more room for self-presentation. However, teachers are also involved in the discussion, and give guidance and comments to stimulate students' divergent thinking, and to discuss together to get new ideas[6]. In addition, teachers timely remind students when they deviate from the topic; give tips to students when they encounter difficulties, and make summaries at the end to ensure that such online discussion teaching has practical values.

Stage III: teachers give fair and reasonable discussion scores and incorporate them into the course evaluation system to form a new assessment system of the course;

In this stage, teachers will close the discussion permission, collect students' discussion and record their discussion opinions; develop and sort out discussion scores: correct score and reward mechanism can better urge students to participate in the discussion. In this research, we plan that the discussion scores account for 20% of the total scores. Teachers should not only attach importance to the online discussion, and record the learning status in the class, but also make a thorough and overall evaluation of students' ability and academic achievements through online and offline comprehensive evaluation, dynamic evaluation and assessment of the learning process, thus promoting the students' all-round development and finally forming a new assessment system of the course.

Stage IV: teachers adjust teaching contents and perfect teaching plans based on the discussion situation;

At this stage, teachers combine the discussion situation and classroom learning performance of students to understand their actual demands and realize the deficiencies in teaching design, thus facilitating teachers to timely adjust the teaching strategy, optimize the teaching method, gradually perfect the teaching plan and lay a theoretical foundation for the topic selection of next discussion.

Stage V: improve the course evaluation system;

At last, the teaching effect of this teaching reform mode is evaluated from multiple levels and dimensions in combination with students' final exam results and ordinary discussion teaching results.

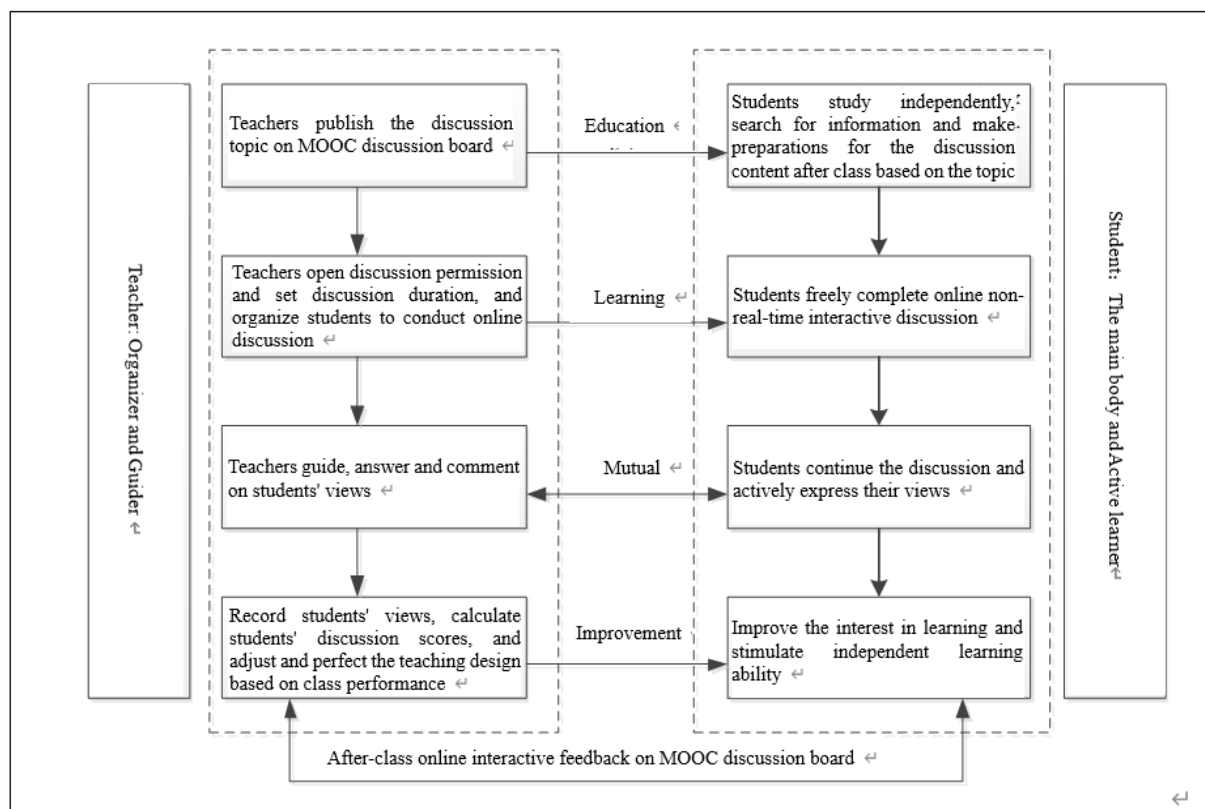


Figure 1. Project Overall Process Framework

5. Practical Significance

This research has the following important theoretical and practical significance:

- ① The most primary feature is "online". Through this discussion mode, students acquire a certain learning degree of freedom, and fully take various advantages brought about by the development of information technology and Internet;
- ② Contemporary college students are fully adaptable to online discussion and can overcome their shyness in real course. It is totally feasible and beneficial to implement discussion courses on MOOC course discussion board, which caters to most students and improves their interest in learning;
- ③ Traditional discussion courses have to be completed within a limited class time, while the discussion of an online top post can last several days. The discussion boards on the platform of MOOC courses are reasonably used to implement non-real-time discussion courses. These courses are not restricted by class time, so every student will have sufficient time to think and prepare, thus promoting their independent learning capability and communication and cooperation ability.

6. Conclusions

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2. The Construction Project of Big Data Intelligence Specialty in Chongqing Undergraduate Universities in 2018 (Yu Jiao Gao Fa (2018) No. 12).
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