Research on Mixed Teaching Method of Computer Basic Course Based on MOOC

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Abstract—"MOOC" is a new teaching mode. Due to its openness and large scale, most colleges and universities have successfully introduced MOOC teaching mode into practical teaching. It is widely used in college teaching and has become a new mode of Education under new media technology. This paper mainly explores how to organically integrate MOOC with traditional classroom teaching, and take the advantages of MOOC to make up for the disadvantages of traditional teaching mode, so as to effectively improve the efficiency of classroom teaching.

Keywords—MOOC, Traditional Classroom Teaching, Integration

I. INTRODUCTION

With the development of science and technology, teaching means such as computer and multimedia have been gradually and comprehensively used in the process of Education [1], which is of great significance to deepen educational reform. At present, the model of the combination of information technology and network resources in teaching is mu class and flipped class. MOOC is the abbreviation of massive open online course, that is, large-scale open online course. As the product of the integration of information technology and education, MOOC is not only a new educational model, but also a new information dissemination model, which effectively promotes the innovation and transformation of modern education.

The emergence of MOOC has broken the framework of traditional classroom teaching, subverted the teaching method dominated by teachers, and shaken the teacher-centered teaching mode.

II. PROBLEMS IN TRADITIONAL OFFLINE COMPUTER CLASSROOM TEACHING MODE

1. There are deviations in students' understanding of computer course

Generally speaking, the computer courses arranged by colleges and universities are relatively simple, and it is relatively easy for students to learn. In today's Internet era, there are almost one computer for each person, and students are the main force to promote the development of the Internet. Some basic software can be operated with ease, resulting in students' incorrect learning attitude. They think that computer courses are optional or even insufficient to be studied as a course; Some non professional students think that they only need to be able to type and use software. These adverse factors hinder the healthy development of computer courses. Most teachers and students have not received professional computer information education, and do not correctly understand the great role of computer curriculum in promoting the development of student education and social informatization.

2. It is difficult to realize the seamless connection between theoretical knowledge and practical experience

Emphasizing theory over practice is a common problem in many colleges and universities. In fact, theoretical knowledge and practical experience are independent and complementary. Without the support of theoretical basis, it is impossible to make a further breakthrough in practice; Without the test of practice, it is not enough to prove the authenticity of the theory, so the two must be combined and unified to achieve the best learning state. But in fact, more college teachers spend more time on theoretical explanation and analysis in the process of teaching, thus ignoring the students' practice of computer operation, which leads to the phenomenon that students have high eyes and low hands in learning computer courses; At the same time, too much theoretical explanation will lead to the overall teaching content is too empty and boring, and make students have resistance. The teaching ideas reflected by these problems are not conducive to students' innovation and development.

3. The curriculum form is single and the interaction between teachers and students is low

Most practical courses of computer courses are mainly taught in the computer room in combination with traditional theories. Teachers generally use multimedia courseware, multimedia video or real-time operation by teachers, so that students can practice independently after watching the teacher's specific steps, but students can't grasp the computer operation methods in a short time, Moreover, this single traditional teaching model is difficult to mobilize students' enthusiasm. As a result, students' learning purpose is not clear. In addition, in the practical teaching of computer course, the teaching hours have certain limitations. Some teachers have to focus on theoretical explanation, while students can only passively and mechanically remember, and cannot think, analyze and operate in real time. On the other hand, the specific computer course operation steps and the difficulties encountered in the learning process cannot be discussed, which makes many technical problems encountered by students in practical operation cannot be effectively solved; In addition, the traditional offline teaching mode is one to many teaching dominated by teachers. Students with obvious individual differences cannot be taught according to their aptitude, and two-way interactive transmission between teachers and students cannot be realized, which will lead to students' inability to understand the key and difficult points in teaching; For teachers, they cannot achieve the preset teaching objectives and teaching requirements. Teachers can only see students' performance in mastering students' learning state, and cannot grasp students' dynamics in real time, which seriously leads to the lack of obvious teaching feedback.

III. CHARACTERISTICS AND ADVANTAGES OF MOOC

First, fragmentation. MOOC is an online learning method. Compared with the traditional classroom, MOOC learning method is flexible and is not restricted by the teaching time and

place. Students choose their own learning content and time according to their own time. Through the Internet, we can communicate with teachers and students about the problems encountered in learning at any time, which reduces the constraints of the classroom on students and enhances the freedom of students' learning. In such learning, students experience the sense of existence and happiness in the learning process, the passion and happiness in the process of seeking knowledge, and the student-centered educational thought has been fully highlighted.

Second, high-quality products.The instructors of MOOC are basically famous teachers. They can be called first-class in education, teaching and theoretical research. The resources placed in MOOC have been carefully deliberated and refined, and the teaching resources are truly high-quality.

Third, interactivity. In the traditional classroom, teachers face different individual students with a single teaching plan and promotion strategy. Even if some students don't understand the content taught by teachers, they can't stop or tell it again. On the MOOC platform, students can stop the teacher anywhere to digest the teaching content, or play it repeatedly until they master the learned content. They can also choose to skip the understood part to truly realize the personalization of the teaching process.

In short, because MOOC teaching is basically completed through short and concise videos, students do not need to occupy too much time in learning. Students can also learn and listen to the excellent courses of the world's top computer teachers more conveniently and quickly, so as to obtain learning resources more conveniently, It further improves the learning efficiency and learning quality [2].

IV. MIXED TEACHING STRATEGY OF COMPUTER BASIC COURSE BASED ON MOOC

1. Improve teaching resources

In the process of teaching, teaching resources are the basic guarantee for teachers to teach normally, such as teaching videos, courseware and so on. Improving teaching resources can ensure the high quality and effectiveness of curriculum teaching. In the basic computer teaching in Colleges and universities, the traditional teaching method is classroom theory explanation and computer room practice, which makes it difficult to stimulate students' learning interest and enthusiasm, and it is difficult to achieve the expected teaching effect. Therefore, when carrying out basic computer teaching, college computer teachers can learn from the MOOC teaching mode and carry out effective modular design for the knowledge points in the course. Specifically, all the knowledge points are made into micro video. The time control of the video is within 10 ~ 15 minutes. When students are learning, they can watch the video Online Q & A links and classroom interaction links carry out experiential and autonomous learning, so as to further improve the teaching quality of basic computer knowledge.

2. Constructing teaching system

College teachers can carry out secondary development through MOOC platform, effectively combine with campus network teaching platform, take curriculum as the unit, and then construct the school network teaching space, so that computer teachers can realize hybrid teaching. Teachers can select and sort out MOOC resources involved in computer basic courses and share them with students through network teaching platform; Students can use the network teaching platform to

learn advanced computer application knowledge, and query, download and view relevant teaching resources. As a product of the integration of Internet technology and education, MOOC fully inherits the open spirit and characteristics of the Internet and creates a broad and free interactive space for students.

3. MOOC + flipped classroom mixed teaching activities

How the flipped learning process plays a role in the bottom-up learning process. Bloom's classification of teaching objectives believes that the learning of basic objectives should be carried out before class, while the learning of advanced objectives should be carried out in class. We might as well learn from Bloom's classification of teaching objectives [3] (see Figure 1) to enable students to spend their main classroom time on analysis, innovation and evaluation. When they encounter learning obstacles, they can carry out activities of pyramid basic objectives (such as memorization, understanding and application), obtain the required information, and then return to the top of the pyramid to continue learning.
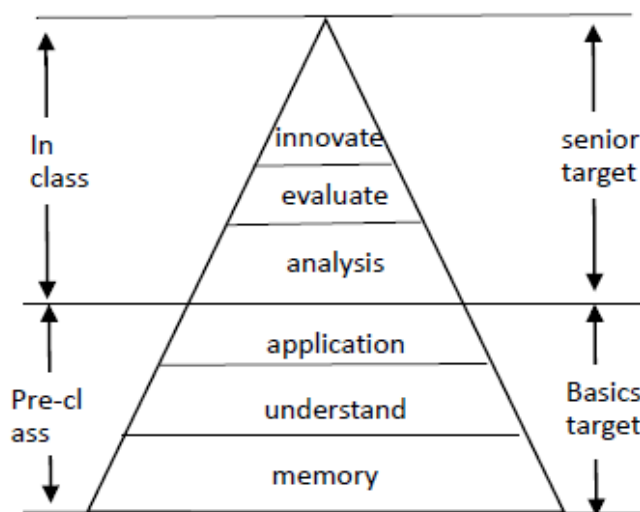

Figure 1 Bloom's classification of teaching objectives

(1) Assign teaching tasks. Before class, the teacher requires students to watch MOOC, upload the pre class test questions of this chapter to the online teaching platform for students' pre class preview, and give the self-study assignment of the corresponding chapter to enable students to understand the logical relationship between the knowledge points of each class, and then require students to watch MOOC video before class and complete the pre class test on the online teaching platform. The amount of pre class test questions does not need to be too much. The content of the questions belongs to the basic cognitive type. The purpose is to test students' mastery of knowledge points. Teachers can view students' learning records through the online teaching platform, including the viewing time of students' videos, the completion of cognitive self-test questions, etc.

(2) Classroom learning. In class, teachers lead the development of the classroom, and the teaching content is presented in the form of problems and generated in problem solving. According to the feedback of students' answers before class, this course adopts a semi flipped mode, that is, some knowledge points need to be repeated in class. During face-to-face teaching, teachers summarize and explain the common problems in students' learning process according to the feedback content of the online teaching platform. For students with more mistakes in knowledge points, they use the method of questioning and spot checking to answer questions and solve doubts on the spot. Compared with the time arrangement of the traditional classroom, the flipped classroom initially needs to achieve

"warm-up", that is, teachers need to answer questions and solve doubts about the pre class test questions to activate students' memory. Next, extend and expand the knowledge points in the pre class MOOC video. Teachers organize students to discuss the cases in the resource case base of the online teaching platform, and publish the case analysis results in the discussion area. After extending and expanding the knowledge points of relevant courses, conduct case analysis according to the groups assigned before class, run through the knowledge points of the whole section, create more communication and interaction for students and deepen their understanding of the knowledge points. Compared with the traditional classroom, the flipped classroom is a step-by-step model. The role of teachers in the classroom has changed and handed over the initiative of learning to students.

(3) Consolidate and preview after class. Students' ability to ask questions is to prove that knowledge is being internalized and higher-level cognitive involvement [4]. Therefore, teachers will assign a fixed time every week to answer online questions after class and communicate with students in real time. At the same time, teachers need to release after-school test questions on the online teaching platform. These questions are test questions to deepen understanding and application, so as to judge whether the teaching has achieved the expected effect. After learning each unit, there are tasks such as stage self-test.

4. Rational design of course assessment methods

Analyzing students' learning data on the "MOOC" platform can find problems in students' learning process, and then adjust the teaching process in time. The performance assessment of computer-based hybrid teaching can be divided into two parts, one is the formative assessment at ordinary times, accounting for 50%, and the other is the final assessment at the end of the term, accounting for 50%. By improving the proportion of formative assessment in the final score, students are encouraged to carry out online learning and autonomous learning, so as to break the habit of students not studying at ordinary times and rushing before the exam, Put the learning of computer basic courses into the usual autonomous learning process, rather than relying on the assault before the examination, we can only obtain the short-term memory of the course content. The final assessment is the final assessment of students' learning effect at the end of the semester. The closed book examination is adopted. The test paper passes the proposition of computer basic question bank, and the teachers do not participate in the proposition work.

CONCLUSION

The rise of MOOC has had a great impact on the traditional teaching mode and teaching content. It does have a certain impact, but it is mostly used by teachers, actively absorb new teaching ideas, and combine with the traditional face-to-face classroom explanation mode, strive to restructure the teaching structure of computer basic courses, so as to drive teachers to constantly innovate teaching modes and means, Meet students' more diversified learning needs of computer courses and promote the all-round and diversified application of MOOC in computer teaching.

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