Research and Practice on FCM Teaching Model of Computer Application Basic Course Based on SPOC

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Abstract: Taking the computer application basic course resources constructed by the online open course sharing platform of Zhejiang colleges and universities, taking the computer application basic course teaching of Wenzhou Vocational College of Science and Technology as an example, the research practice of FCM teaching mode based on SPOC-based computer application basic course, and exploring SPOC-FCM teaching The mode implementation path solves the shortcomings brought by traditional teaching, improves the teaching effect of the course, and cultivates the comprehensive quality of students.

1. Introduction

In recent years, in order to implement the national education plan, the recruitment channels for higher vocational education are diversified. At present, there are various forms of enrollment, such as the general examination of the general examination, the advanced examination of the high school, the 3+2 of the secondary vocational school, the single examination of the secondary vocational examination, and the expansion of the social candidates. There are many types of students, and the information literacy of students varies widely. It is the same type of students. The subjects of different colleges and universities are not the same. The same provinces also have different levels of students due to different subjects. "Computer Application Foundation" is a public compulsory course offered by most professional freshmen. Due to the large number of new students, there is no condition for layered teaching at this stage. In order to improve the teaching effect of computer application basic courses, Zhejiang University Higher Education Online is used. Open course sharing platform to build curriculum resources, and carry out research and practice of FCM teaching mode based on SPOC-based computer application foundation course.

2. The status quo of the curriculum

"Computer Application Basic Course" is a public basic course offered by most of our majors. There are many types of students in our school, and the information literacy of students is very different. In recent years, the curriculum construction has been constantly improving and optimizing, aiming at the types of students in the class. Using a variety of teaching methods such as problem inquiry, teaching integration, task-driven, case teaching, etc., but still can not comprehensively improve the teaching effect of the course, the teaching content can not meet the different needs of the whole class, the teachers are tired of coping with the needs of students, can not be completed Teaching tasks. The traditional teaching mode is used to teach. Students who learn well will feel too simple. It will be too difficult to learn poorly. If you don't want to learn anyway, it will be too simple and too difficult for students to have ideas that they don't want to learn. Therefore, under the traditional teaching mode, in the process of course teaching, students are prone to four situations: "not enough to eat", "can't keep up", "learning not to be", and "do not want to learn". The traditional teaching mode is obviously It has been unable to meet the needs of students at different

levels and cannot stimulate students' enthusiasm for learning.

3. The connotation of SPOC-FCM teaching mode

What is "SPOC"? SPOC (Small Private Online Course) is a small-scale online course that was first proposed and used by UC Berkeley's Armando Fox. Small and Private are relative to Massive and Open in MOOC. Small refers to students with smaller scale. Generally speaking, there are dozens to hundreds of people. Private means setting restrictions on students. In general, SPOC refers to an online course in which teachers use the curriculum resources to provide specific resources for students, such as students, to use their spare time. SPOC combined with offline classroom teaching can effectively improve the teaching effect of the course. SPOC teaching pilots have been launched in well-known institutions at home and abroad, such as Harvard University, University of California at Berkeley, Massachusetts Institute of Technology, Stanford University, Zhejiang University, Tianjin University, and Tsinghua University. The SPOC teaching pilot has been carried out, and the teaching effect is remarkable.

What is "FCM"? FCM (Flipped Class Model) means that teachers create micro-courses or videos, and students learn at home or in extra-curricular time. After returning to the classroom, teachers and students can exchange learning difficulties and feelings, and the teaching forms of doing homework together. It has become a teaching model of concern to the global education community. [1] FCM classroom attention shifts from teacher to student and learning process, paying more attention to knowledge internalization, migration, self-learning, and comprehensive ability training. The FCM teaching mode requires teachers to invest more time and energy to deal with pre-course preparation, classroom interaction, after-school summarization, and course evaluation.

The SPOC-FCM teaching mode is a hybrid teaching mode that uses the small-scale restrictive online course and the offline physical classroom to carry out the flipping classroom teaching. It is different from the traditional classroom teaching and after-school practice teaching mode. It is self-study before class. The "flip" teaching mode of classroom practice, which uses the online teaching platform and the offline physical classroom to form a mixed teaching mode. In this mode of teaching, students become the protagonists of the classroom, teachers become designers and guides of student learning, and students change from passive learning to active learning, such as self-study, internalizing knowledge, asking questions, and participating in group discussions. , summed up and so on.

4. The practice study of SPOC-FCM teaching mode

The teaching mode of "Computer Application Foundation" in our school is from the original traditional teaching mode to the practical and integrated teaching mode focusing on practical operation ability. In the past two years, with the online open course sharing platform of Zhejiang Higher Education School, "Computer Application" The construction of the Foundation course began to conduct a practical study on the SPOC-FCM teaching model based on the online open course sharing platform of Zhejiang colleges and universities.

4.1 SPOC resource construction

Starting from 2017, the "Computer Application Foundation" course began to build curriculum resources in the online open curriculum sharing platform of Zhejiang colleges and universities. The curriculum construction comprehensively considers the information literacy of students from different students, pays attention to cultivating students' practical operation ability, and highlights students' problem-solving. Ability, problem-oriented, forming 16 teaching tasks, using Camtasia Studio and Gold Wave software, recording course video for 430 minutes, and providing quizzes, Q&A and other functions.

4.2 Analysis of the implementation path of SPOC-FCM teaching mode

The SPOC-FCM teaching mode is divided into three stages: self-study before class, interaction in class, and summary after class.

The self-study stage before class is the preparation stage of SPOC-FCM teaching mode, which is related to whether the interactive stage of the classroom can be carried out smoothly. At this stage, students mainly use the learning content provided by teachers, such as short videos, courseware, supporting materials, homework, etc., to use self-study in their spare time. Each student adjusts his or her own learning progress according to his or her own learning ability and completes this week. assignment. Through self-study, students effectively develop students' self-learning ability and independent thinking ability.

The interactive stage of the classroom is the core stage of the SPOC-FCM teaching model. This stage includes teacher-student interaction, group collaboration, task training, and results presentation. Through the interaction between teachers and students, the knowledge of the course can be quickly taught. The group collaborative learning session is to let the students form a group, ask each other questions, answer questions, consolidate and deepen the self-study content after school, and the group can't solve the problem, let other groups discuss and answer questions, if still Can not be resolved, and then analyzed by teachers, Q & A. The task training link is an important part of knowledge internalization and migration application. Teachers need to carefully design the teaching and training tasks for the knowledge points of this unit. Students can enhance the understanding of knowledge and complete the application of knowledge transfer through task training. If students encounter difficulties during training, they should first complete their own independent thinking. If they cannot complete it alone, they will be discussed by the group. If they are not completed, the teacher will give them practical guidance. The effect display session is that after the students complete the training task, the teacher randomly selects a group of students to display and share, and other students conduct comments. Students can enrich the students' thinking when sharing and commenting, and let the students become the protagonists of the class, and also cultivate Students' verbal ability.

The post-class summarization stage is an indispensable stage of the SPOC-FCM teaching mode. After completing the two stages of self-study and classroom interaction before the class, the students summarize and summarize the content of the course, and clarify what they learn and what they don'
t understand. Go to the course video to learn, you can communicate one-on-one with the teacher, and finally understand the content of the internalization migration course.

The teacher's activity path in the SPOC-FCM teaching mode is curriculum development, classroom design, after-school Q&A, and course evaluation.

According to the curriculum standards, start the course development, including courseware, short video, extended knowledge, homework, quizzes, etc., and the course development materials upload teaching platform (http://www.zjooc.cn) for students to use.

Classroom design is the core stage of SPOC-FCM teaching mode, which should be carefully designed, including pre-course feedback, knowledge explanation, group collaborative learning, teacher-student exchange, training task training, results display, class summary, etc.

Through the students' reflexive homework, online feedback, platform message, etc., the teacher needs to reply to the platform message in time, answer questions online, correct the practice online, and summarize the reflective homework submitted by the students. Effective questions, share these issues in the next classroom interaction, and expand knowledge to achieve the common growth of teachers and students.

Through platform information feedback, teachers need to promptly supervise students to complete the corresponding content, such as video learning, homework assignments, posting questions, answering questions, etc., and then designing unit training assessments and group assignments, all of which constitute important factors in curriculum evaluation.

Students learn the path in the SPOC-FCM teaching mode for self-study, classroom interaction, summary induction, course evaluation.

Students use their own account password to log in to the online open course sharing platform of Zhejiang Higher Education School. The website is http://www.zjooc.cn (http://zjedu.moocollege.com before September 2019), select "Computer Application Foundation" "The course, you can watch video learning online, ask questions, answer questions, turn in homework, test, etc. Students can also install Zhejiang Online University APP on their mobile phones, use mobile app to watch videos, ask questions, answer questions, etc. Students have problems in the learning process, they solve problems through network resources first, can't solve them, record problems, and communicate in classroom interaction.

In the classroom interaction, the teacher explains or asks the course content, and the students recall the course content. Then, enter the group collaborative learning, the team members 3-6 people, 4 people are better, the team members simply exchange self-study before class, and raise questions in the process of self-study, other members answer questions, if the members of the group can not answer, then Consult other teams, other groups still can not answer, and then consult the teacher, the teacher unified explanation. Then, according to the training task requirements issued by the teacher, the students complete the training tasks independently and hand in the platform after completion. After the completion of the training task, the results of the work will be displayed, and other students will comment.

The after-school summary mainly summarizes the students' own learning situation, the knowledge understanding and application situation, and finally forms a reflective homework and feedback to the teachers. It can also use the online course platform to further communicate with the teachers to achieve internalization and integration of knowledge.

In the course of course teaching, the use of online course platforms, training assessments, group assignments, etc. will constitute a course evaluation for each student.

4.3 Course evaluation under SPOC-FCM teaching mode

The curriculum evaluation under the SPOC-FCM teaching mode adopts a process evaluation, and the focus is on student participation, learning process, and learning effects. At present, the evaluation method of the "Computer Application Foundation" course in our school is 20% of video and other courseware, 20% of classroom task training, 5% of questions posted, 5% of questions and answers, 40% of unit training, and teamwork 10% of homework. The online open course sharing platform of Zhejiang colleges and universities can record the learning situation of each student in each class, including video viewing time, assignments and corrections, student postings, etc. In order to more accurately test students' learning effects, in the teaching process In the design unit training assessment, to understand the students' knowledge of the unit. In order to strengthen the teamwork ability of the students, the team work is designed, and the students complete the group work through the team. This kind of course evaluation considers both the learning process and the learning effect of the students. It considers both self-learning and teamwork. It considers both knowledge learning and knowledge application. It considers both online learning and offline learning. The evaluation effectively guarantees the continuous advancement of the SPOC-FCM teaching model.

4.4 Analysis of teaching effects under SPOC-FCM teaching mode

Our school has adopted the SPOC+FCM teaching mode since 2017 and has implemented two rounds in the public general course "Computer Application Foundation". Through the teacher-student conversation, discussion and exchange, questionnaire survey, etc., the teaching effect of SPOC-FCM teaching mode is good, mainly reflected in the following aspects:

(1) Improve students' enthusiasm for learning

In the past, when using the traditional teaching mode, students did not have passion in class, and it was difficult to concentrate on listening to the lesson. From time to time, playing mobile phones or sleeping, through understanding, students reflected that learning content was too simple, too difficult, too useful to learn, and not want to learn. After adopting the SPOC-FCM teaching mode, the students slowly adapt to self-study before class, interactive training in class, and after class, students no longer feel that the learning content is too simple or too difficult, the student participation is obviously

strengthened, and learning is more active. No longer feel that learning is useless or I don't want to learn.

(2) Develop students' thinking and enhance students' self-confidence

Due to reasons such as students, the discipline of higher vocational students is good, but they are generally unwilling to participate in classroom interactions. They are unwilling to answer questions in class. They have ideas and do not express themselves. There is no state of college students' youthfulness. After adopting the SPOC-FCM teaching mode, each student slowly adapts to group collaborative learning, teacher-student interaction, training training, and summary reflection. The students' thinking is obviously active, and they are willing to think and be willing to express their own ideas.

(3) Improve students' comprehensive application ability

Some high-level students have insufficient knowledge internalization, migration application, less oral expression skills, and do not know how to work with others. These skills have been greatly trained in the SPOC-FCM teaching mode, such as self-study before class. Classroom interaction, group collaborative learning, group assignments, summarizing reflections, etc. can effectively develop students' comprehensive abilities.

5. Conclusion

After two rounds of teaching practice, the teaching effect is good. Although the students did not adapt to the teaching mode completely different from the high school, after a period of time, most students recognized the SPOC-FCM teaching mode. We are delighted to see: Students learn more actively, their learning ability is significantly improved, their verbal ability is improved, and their learning is more efficient.

In the process of teaching practice, there are also some shortcomings: for example, video recording is not refined enough, and further study of video recording technology is needed; whether the proportion of indicators for course evaluation is appropriate, further research is needed; platform management is not very convenient. The teacher does not have a mobile portal; the platform is not open enough, the teacher cannot add the student by himself, and the student password cannot be modified, resulting in individual students forgetting the password and failing to follow up.

References

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