SPOC-based "database technology and application" flip classroom teaching reform and practice

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Abstract

Database technology and application courses have practical characteristics. Analyze SPOC-based classroom teaching, post-class self-study teaching practice and teaching feedback requirements, implement flipping classroom through SPOC, and summarize application in database technology and application in SPOC course. effect.

Keywords

SPOC; Teaching Reform; Flipping classroom.

1. Introduction

"Several Opinions of the Ministry of Education on Improving the Quality of Higher Education in an All-round Way" and "Twelfth Five-Year Plan for Higher Education in Zhejiang Province" point out that the current higher education must adhere to the connotative development path centered on quality improvement and deepen the reform of education and teaching. In order to reform the classroom teaching, it is necessary to renew the classroom teaching concept, innovate the classroom teaching method, and reform the curriculum evaluation method as the main line, in order to achieve a comprehensive improvement of the teacher's classroom teaching ability, and improve students' self-learning, engineering practice application ability and application innovation ability. It can be seen that it is extremely urgent to change the current lack of innovation awareness of college students through the effective measures of "classroom transformation" and to improve the ability to think independently and solve practical problems.

The Database Technology and Application course is a major professional course in the fields of Internet of Things, electrical engineering, automation, and automation. Today's society is an information-based society, and information storage and management are inseparable from various databases. The "Database Technology and Application" course has fewer hours and more content, and it has both rigorous and profound theories and strong practicality. The "Database Technology and Application" course plays an important role in improving the overall quality of college students and cultivating complex and applied engineering and technical personnel. The existing "Database Technology and Application" classroom teaching still adopts the traditional teaching mode, which causes students to not move their minds in class, do not do anything under the class, and finally lose interest in the course.

Therefore, in response to the characteristics of the "Database Technology and Application" course, classroom teaching reform, scientific and reasonable construction of SPOC-based classroom teaching, the book knowledge and the actual case are closely linked to mobilize students' interest and enthusiasm for learning, will be It is of positive significance to improve the effectiveness of classroom teaching, improve students' ability to analyze and solve problems, and cultivate innovative ability. Provide protection for students to go to the society, develop themselves, and achieve zero-distance employment.

2. The content of classroom teaching is "re-theory, light expansion", it is difficult to learn to use

The content of the course is mostly some basic concepts of the database, database design methods, and lack of scalability. In addition, the content of the course is large and the class time is small. In order to complete the requirements and progress of the syllabus, the teacher can only instill instill the students, ignoring the role of the student's subject status, thus causing a series of trainings even after theoretical teaching and practical experiments. I also feel awkward about the knowledge and skills I have learned, know what it is, don't know how it should be used, and let alone innovation.

3. Classroom teaching methods are "re-delivering and lightly inspiring", which is difficult to stimulate student initiative.

Most of the classroom teaching of "Database Technology and Application" stays at the stage of traditional "teacher speaking, student listening". The method of classroom teaching is single, which leads to the lack of communication and communication, inspiration and discussion among teachers and students in the classroom. The ability to analyze and solve problems and self-learning ability cannot combine theory with experiment. Without designing a corresponding engineering environment, it is difficult to train students' independent innovation and practical engineering application ability. As a result, the phenomenon of "student taking notes in class, taking notes in class, taking notes in exams, and forgetting all after the test" has led to the employment of graduates, and employers have to train graduates from the beginning.

4. Poor classroom discipline "remaining, light guidance", it is difficult to guarantee the effectiveness of classroom teaching

In the stage of popular education, class students have strong personality, distinctive characteristics, large individual differences, difficult thinking, and difficult classroom discipline. The "Database Technology and Application" course is profound in theory, engineering, difficult to learn, and new. The digital equipment of the students of the era makes the control of the classroom difficult. The more energy the teacher spends on discipline, the less time and energy the actual teaching is. The poor discipline of the class not only affects the realization of the classroom teaching objectives, but also affects the students. The equal relationship and communication between teachers and students weaken the relationship between students, which is not conducive to fostering team spirit and cooperation consciousness, inhibiting students' desire for expression and innovative thinking, and is unfavorable to the cultivation of students' innovative spirit and innovative ability. , reducing the effectiveness of teaching.

5. The evaluation of the teaching effect of the course "heavy results, light process", it is difficult to reflect the evaluation of classroom teaching quality

Throughout the domestic "database technology and application" teaching evaluation methods, the vast majority of the traditional evaluation methods: the usual homework + mid-term + experiment + the end of the period, the ratio of different majors, different schools will be different, but they all have a Common features: too standardized. The characteristics and disadvantages of this evaluation method make students form the following learning modes: normal homework, experimental report plagiarism, mid-term exams are not valued, and the final stage of the exam is madly attacking the key points. This kind of learning mode makes students feel that learning is to get scores, not to understand knowledge, apply knowledge, improve ability and quality, and the students who are trained generally lack practical ability and creative spirit.

6. Flip classroom and SPOC introduction

Flipping classroom teaching usually requires teachers to make the most basic and core knowledge elements of the teaching content into modular and thematic digital resources (mainly in the form of video), and publish them on the network platform. Self-learning, teachers spend more time and energy in the classroom to explain doubts, in-depth discussions, organize team learning or other teaching activities, to achieve teaching in accordance with their aptitude, and improve classroom teaching effectiveness. Through "flip", the focus of classroom teaching has changed, from shallow knowledge transfer to the absorption, internalization, thinking and re-creation of students in receiving information. Through "flip", the role of the teacher has also changed, from the transfer of knowledge to the integrator of learning resources and the facilitator of knowledge and ability of students.

"MOOC" has the characteristics of large-scale, open-minded, in-line teaching, and SPOC is a new development of MOOC in colleges and universities. SPOC's Small and Private are relative to MOOC's Massive and Open. Small refers to the size of students from tens to hundreds of people. Private refers to the applicants who set restrictive access conditions to meet the requirements. Can participate in the SPOC course. SPOC is an online course specially designed for students in school. It adopts a mixed teaching mode combining classroom teaching and online teaching. It uses online video and online interaction to implement the research and reform of flip classroom teaching. Therefore, the SPOC is essentially a hybrid teaching model that combines online and offline teaching to guide the students to conduct more in-depth and in-depth discussions, flip students' study habits, increase discussion and practice, and then train students to solve problems. Comprehensive ability to express problems and express opinions, stimulate academic interest, and enhance students' initiative in learning.

7. Lessons change ideas

After in-depth understanding of the flipping classroom and SPOC, combined with the characteristics of the "Database Technology and Application" course, the basic ideas of the SPOC-based "Database Technology and Application" flipping classroom teaching reform are proposed, which are as follows:

Selecting appropriate course chapters to carry out SPOC-based flip classroom teaching reform pilot SPOC-based "database technology and application" flip classroom teaching research is an exploratory teaching research, exploring SPOC-based "database technology and application" flip classroom The teaching reform program should not directly carry out the teaching reform of the whole course, but should first select the appropriate course chapters to carry out the teaching reform pilot. After selecting the course chapters for the pilot reform of teaching, an important task is to properly divide the online teaching content and offline teaching content for the selected chapters, so that the two can be closely and naturally connected. The teacher and student can naturally transition from online teaching to offline teaching during the teaching process.

Adjusting the syllabus according to the teaching characteristics of "SPOC-based flip classroom" The SPOC-based flipping classroom adopts a hybrid teaching mode combining online and offline. Students pre-learn the core content of the teaching in advance, and the teacher will More time and energy are used to explain doubts, in-depth discussions, organize team learning and other teaching activities, which determines that the syllabus is quite different from the traditional syllabus, in teaching purposes, teaching requirements, teaching content, Adjustments are needed in terms of teaching hours allocation.

Design a teaching plan based on the teaching characteristics of "SPOC-based flip classroom". The SPOC-based flipping classroom adopts a hybrid teaching mode combining online and offline. The design of the specific knowledge unit should be re-designed, the arrangement of online teaching content, and the organization of the online teaching process. The control, the arrangement of the offline teaching content, the organization of the offline teaching process, the control of the quality of the offline teaching, and the connection of the online and offline teaching processes should all be embodied in the teaching plan. Effective measures should be taken to control the quality of students'

online self-learning, improve the enthusiasm and initiative of students to participate in offline teaching, improve the depth of offline teaching, and improve the teaching effect of flipping classrooms.

Adjusting the course assessment method according to the teaching characteristics of the SPOC-based flipping classroom. The SPOC-based flipping classroom adopts a hybrid teaching mode combining online and offline, which determines that the assessment method and the traditional assessment method for students should have Different, we should design a flexible and diversified evaluation system, which fully reflects the students' online self-learning performance in the flipping classroom mode, the offline classroom teaching participation level and the comprehensive learning effect, so that students' performance in online and offline teaching is obtained. Comprehensive evaluation.

Develop SPOC curriculum resources, build a SPOC curriculum platform, establish a teaching content knowledge unit system according to the new syllabus and teaching plan, fragment and redesign the knowledge according to the characteristics of SPOC teaching, and shoot with basic knowledge points as the unit. Course instructional videos, supplemented by the collection and integration of relevant video resources from existing online and international online course resources. According to the characteristics of the course and the teaching needs, we produce rich digital resources, such as teaching documents, rich media teaching courseware, problem solving library, and operation library. Use the existing cyberspace and video website platform to build a simple and practical SPOC course platform, upload course resources, and establish an effective course access mechanism to ensure the small-scale and restrictive features of the SPOC course.

Carry out the practice of SPOC-based flip classroom teaching, evaluate the teaching effect, improve the teaching reform program based on the SPOC course platform, and carry out the "inverted classroom teaching of "database technology and application" combined with online teaching and offline teaching to evaluate the teaching effect. And adjust and improve the teaching reform program. It is an important and meaningful work to carry out SPOC-based "Database Technology and Application" to turn over classroom teaching reform. It is necessary to study how to adjust teaching based on the characteristics of "Database Technology and Application" and the characteristics of flipping classroom and SPOC. Outline, design teaching programs, adjust course assessment methods, develop SPOC curriculum resources, and carry out teaching practice based on the online teaching platform of Zhangzhou College. The author will carry out the above-mentioned teaching reform research and teaching practice work in a deeper and more specific way.

8. Conclusion

The enthusiasm and initiative of students' learning is strengthened. Through the online education platform, students pre-learn the core content of the teaching independently. Teachers will spend more time and energy in the classroom to explain doubts, in-depth discussions, organize team learning or other teaching activities, realize teaching according to their aptitude, and improve classroom teaching effect. . Realize the transformation from "I want to learn" to "I want to learn", highlight the main status of students, and improve students' practical ability and innovative ability.

Teachers' teaching ability is improved, teaching methods are diversified, and online teaching resources are more abundant.

The research results of this project can be extended to the teaching of other professional courses, and the expansion is strong, and the typical teaching situation can be set according to the teaching needs.

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