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Exploration on Curriculum Reform of Operating System Based on Mixed Teaching Mode

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Abstract: Based on Mixed Teaching mode "operating system" to explore the teaching curriculum reform as a new teaching idea, for the operating system course teaching provides a new train of thought, than in the traditional operating system course teaching mode is difficult to promote students to understand the problem of the course content, the hybrid time flexibility of teaching has the advantage, Traditional classroom teaching and online teaching are organically combined to realize the integration of information technology and curriculum. Teaching has been widely applied in various fields such as corporate training, teaching education, etc, in view of the present application status of the investigation and analysis of related and combined with the special properties of the operating system course, design based on the mixed mode of the operating system course teaching mode, not only enriches the teaching activities, improve the students' interest in learning, improve the learning efficiency and quality, It is also conducive to the cultivation of students' comprehensive ability and improves the quality of teaching.

1. Introduction

The rapid development of educational information technology promotes the renewal of classroom teaching means in colleges and universities. Although the traditional classroom teaching mode can make students systematically master some basic concepts and algorithms of the operating system, it cannot be closely linked with the actual operating system, and students cannot acquire knowledge and technology purposefully and targeted. The reason is that the traditional teaching mode is mainly based on teaching materials, reference books, etc., and the available resources are extremely limited, which is no longer suitable for the development of The Times. The emergence of online classroom leads the evolution from traditional classroom to mixed classroom. The Internet provides us with massive learning resources. The effective use of these resources can mobilize students' learning autonomy, improve the teaching mode, and improve the teaching effect. Obviously, traditional classroom will not disappear, and online teaching also has its weaknesses, so the combination of online and offline teaching has become the object of study in various universities. Therefore, in view of the operation system course, the offline and online resources are sorted out and integrated, and the offline and online Mixed Teaching reform scheme is proposed[1].

2. Operating system teaching status

The opening of any course must mean that it carries the requirements of some knowledge, ability and quality in the graduation requirements. As a required course for computer majors, operating system has been highly valued by computer majors at home and abroad. As a link between the hardware and software of the computer system, it contains many core technical points that students can deeply understand the computer system.

Operating system course is a software course closely related to computer hardware technology, which has the characteristics of connecting the preceding and the following in the course design of computer science. This course covers computer composition principle, data structure, and high-level programming language, such as different subjects, its characteristic is concept, more abstract and more wide range, to the students' professional knowledge, independent learning ability and computer operation skills demand is higher, so it's recognized difficult to teach in the computer class, one of the difficult subject.

According to the survey, it is found that in the traditional teaching mode, this course is mainly taught in class theory, and students are passive to accept the learning content in class. Under this teaching mode, the teaching time is strictly limited and the traditional teaching method is continued. Students' learning enthusiasm is not high, the classroom interaction participation rate is low, and it cannot reasonably guide students to think positively, let alone cultivate students' ability of innovation and practice, resulting in low efficiency. At the same time, the traditional teaching mode cannot detect students' knowledge level, and it is difficult for teachers to quantify students' learning effect, to teach students in accordance with their aptitude, and to realize personalized teaching services [2]. Under the background of the current big class teaching in our school, the traditional teaching mode can not effectively monitor the student's learning process, the teacher is very difficult to distinguish between the students' study initiative and enthusiasm, teaching model and restricted by time and space, to provide rich curriculum resources for students to learn anytime and anywhere, classroom teaching time is limited, teaching fast progress, It is difficult for students to keep up with the normal teaching progress. With the gradual deepening of subsequent courses, students will gradually develop from the initial inability to understand to reluctance to listen, forming a vicious circle and finally giving up their interest in learning this course completely. From the feedback of students, it is generally reflected that the course has many knowledge points, abstract concepts, scattered knowledge points and difficult learning, which makes it difficult to systematically master and understand the working principles and methods of the entire operating system, which also poses severe challenges to the teachers. Therefore, it is imperative to reform the teaching mode of traditional operating system.

3. Mixed teaching model

After twenty years of development, "Internet +" education has endowed it with new connotation, and the traditional education model has been gradually broken through. Many valuable learning resources have emerged in the Network, and great changes have taken place in teaching methods, teaching tools and teaching models. Online courses, network courses, micro courses, MOOC and other widely used, students can use a variety of network channels, anytime and anywhere to learn. How to combine online courses with traditional classes, change the existing teaching mode, fully stimulate students' innovative thinking and enhance students' knowledge integration and application ability has become an important content of current teaching reform [3] [4]. This paper will explore the online and offline teaching mode of operating system, and provide new ideas for the teaching reform of other computer courses.

The online and offline mixed teaching mode is an innovative teaching mode that combines

traditional classroom teaching with Internet information technology, including two teaching links, namely online teaching link and offline teaching link.

Online teaching refers to the use of modern information technology and Internet technology, teachers through the network platform, to provide students with teaching resources for students to study independently outside the classroom. In the teaching process, teachers can record the teaching content of the operating system into videos, micro-lessons and other forms, and upload them to the online teaching platform or use the currently mature online course resources [5]. Qualified teachers can also combine the development of disciplines and the frontiers of scientific research and record the recent progress of their own explanations into videos or make PPT forms to share with students. In this way, students can take online courses according to their own needs, regardless of time and place.

Offline teaching is the classroom teaching between teachers and students. Teachers need to complete the assigned teaching tasks at a specified time and specific place. Teachers will explain the key and difficult points of the course in detail according to the requirements of the teaching syllabus [6]. Different from the traditional teaching mode in the past, teachers can pass over the content that students have mastered through the online platform and reserve time to explain the questions raised by students during the online learning process in detail, so as to promote the complete mastery of knowledge. It is necessary to assign preview tasks to students in advance, timely understand students' grasp of learning content through the message area, and then adjust their offline classroom content, targeted explanation, and strive to let students absorb the course content to the maximum extent. The implementation of mixed teaching mode is mainly to establish student-centered autonomous learning mode, which can not only improve the learning effect and efficiency to a certain extent, but also improve students' autonomous learning ability and comprehensive quality.

4. Curriculum design

The teaching object of this course is sophomore students majoring in computer science. The learners have a wide range of students and different learning backgrounds. According to the investigation and research, the main characteristics of this kind of learners are relatively single learning mode, poor learning autonomy and lack of cooperative consciousness. For such learners, it is necessary to carry out strict investigation, analysis and summary in learning needs, learning content, learning objectives, learning strategies and other aspects.

4.1. Focus on knowledge and ability goals

The main characteristics of the operating system course is complex knowledge content system, and has strong abstract and theoretical, curriculum content based on the operating system, the concept of knowledge, around five basic functions of the operating system, combined with the graphics, calculation and design of different ways to make the students more understand the principle of operating system, Practice teaching method is adopted to guide students to complete the management and deployment of simple network operating system to improve the ability of using knowledge to improve operation technology.

Through the study of this course, students can understand the meaning, development and classification of operating system, understand the meaning of system software and the function of operating system, and master the management method of network operating system. The principle is explained around the five basic functions, and a variety of teaching methods are adopted to make students familiar with the combination of theoretical content and WINDOWS system, and try to combine with practical application, so as to improve the ability of students to understand the

principle of operating system and the application of network operating system.

4.2. Focus on the design of teaching methods

Teaching implementation is mainly realized through three aspects:

First, in the pre-class preview stage, teachers assign preview content and students have different learning abilities. At this stage, students mainly use electronic resources and Internet resources of the course to search and integrate knowledge. Online learning has many advantages, such as being not limited by time and place, learning autonomy, clearer goal, personalized learning, rich course resources, training the ability to search and screen information, so online learning will become the development direction of future education. Students can watch famous teachers' teaching videos on the online learning platform, use search engines to query various knowledge points, and use social software to discuss difficult problems with course researchers who are far away in space.

The second is the classroom teaching stage, the role of the classroom is not only to achieve teachers speak, students listen, but also to achieve a variety of exchanges and discussions, so as to enable students to have a deeper understanding of the problem. Teachers organize classroom activities. Through guided questioning, students discuss and clarify the difficulties and key points in learning objectives, and set up online learning points. The classroom discussion here is different with the traditional classroom mainly lies in the traditional classroom is about knowledge, core and the core class in this teaching mode is put forward, and through the guidance of teachers and students' discussion form knowledge context, so the teaching mode of classroom content determines the classroom form more flexible, also can arouse the enthusiasm of students learning more.

At the same time, students can also make comprehensive use of the knowledge they have learned to achieve the purpose of applying what they have learned. Especially for the curriculum content that requires the combination of software and hardware, teachers provide corresponding teaching resources offline, organize teaching activities to carry out curriculum experiment practice, and then promote students to fully understand and master the learning content.

The third is the after-class consolidation stage, through classroom learning and discussion, students further deepen the understanding of knowledge points, at this time must be timely reflection and summary, you can learn the course through experimental reports and network tests and other ways. Offline tests are usually limited by teaching time and venue, so students can strengthen their learning and understanding of course knowledge through online simulation tests, so as to achieve learning objectives.

After the end of the learning activities, teachers and students should be timely summary and evaluation, teachers reward outstanding students, so that students experience the fun of learning, students summarize the knowledge learned, establish a complete knowledge system; The main evaluation indicators of teachers can come from the following aspects: daily performance, experimental reports, final exams, learning notes and so on.

In a word, Mixed Teaching mode is a better teaching mode, which integrates all the advantages of online courses, online courses, micro courses, MOOC, etc. It is conducive to the combination of online and offline teaching, which is more targeted to online teaching, and also helps to improve students' learning enthusiasm and initiative.

4.3. Focus on assessment methods

There should be a process of accumulation and improvement in the learning of any course. In order to better improve the quality of students' learning, it is necessary to pay attention to the process assessment. In order to reflect the students' application ability and level, and pay attention to the process assessment to change the teaching mode that the success or failure is determined by

the final exam, the assessment of this course is divided into four parts, which adopts the assessment method combining the usual assessment + online learning test assessment + experimental assessment + final assessment. In the first week of school, the assessment method and scoring standard of this course were announced to students. The ratio of three parts was 1∶2∶3∶4, which not only strengthened the assessment of students' daily attendance, online learning and after-school testing, but also assessed students' comprehensive practical ability through experimental operation.

In the course of theoretical teaching, students' daily learning effect is checked regularly in the form of pre-class preview, homework or stage test. The experiment teaching part arranges the comprehensive project experiment, examines the student to the relevant knowledge comprehensive application ability; The proportion of final examination papers will be reduced, and the final examination will focus on subjective questions to assess students' flexible use of knowledge. After the assessment, the examination results should be analyzed, and targeted interviews should be conducted with the students with low scores to understand why the students' low scores are caused by teachers or other reasons, so as to achieve the purpose of testing the teaching effect, which is conducive to the smooth implementation of the teaching reform and enhance the teaching effect.

5. Conclusions

Mixed Teaching uses modern educational technology means provided under the background of Internet + to combine traditional face-to-face teaching with online teaching, so as to integrate the advantages of the two and integrate high-quality information teaching resources. Its main purpose is to promote students' learning, improve the learning effect, and improve the interest and innovation of the course. Under the new form, teachers insist on the teaching concept of "student-centered", make full use of the advantages of Internet technology and actively explore mixed teaching in teaching practice, which will effectively promote the reform of curriculum teaching and improve teaching quality. The application of this model to the basic courses of computer specialty, such as "operating system" course, has a good auxiliary role in the realization of engineering certification of computer specialty.

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