

Research and Practice on the Construction of Microlecture Teaching Resource Database of Pro-e Applied Technology in Higher Vocational Colleges

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Abstract: This paper analyzes the necessity of the construction of micro-course resource database and the research status at home and abroad, and finds that the micro-course resources in Chinese colleges and universities are scattered and there is no systematic resource database of courses. Therefore, taking the construction of micro-class resource database of Pro/E applied technology as the starting point, this paper studies the establishment of a student-centered, systematic, resource-rich micro-course resource base with good interactive experience. In the teaching practice, the micro course Pro/E applied technology is student-centered, and the learning mode breaks the boundaries of time and space. The classroom adopts the integrated teaching of "teaching, learning and doing", and teachers assume more responsibilities. And can evaluate and optimize the micro course. The student-centered teaching concept can be promoted in mechanical courses. Meanwhile, the teaching mode of Pro/E applied technology, which is taught by teachers + students' practice + teamwork, can be used for reference to create a teaching mode that conforms to the learning situation and the nature of the course.

1. Introduction

Microlecture, also known as Micro-courser, is a kind of tiny course, which is used to teach a single knowledge point or break through a teaching problem. It usually consists of short micro-lesson video and supporting resources. Teachers can use micro-lesson as teaching material in class, while students can preview and review through micro-lesson to achieve independent learning. It has been applied in mobile learning and online learning and achieved good teaching results [1].

1.1. Research status of Microlecture resource database at home and abroad

In foreign countries, the design and construction of supporting resources for micro classes are not only relatively complete, but also unique. For example, one of the characteristics of khan academy is to provide students with Knowledge Map and self-designed study plan.

Micro course construction in China is also in development, among them, the more well-known domestic micro course resources website net "China's micro class", is a resource platform created by the education management information center of the ministry of education for the holding of "China micro class competition", mainly for primary and secondary school education, colleges and universities and the domestic micro course resources website "National micro course teaching competition network". It is sponsored by the national network training center for college teachers of the ministry of education, which provides college courses for teachers and students. However, it is fragmented. There is no systematic and thematic resource base for courses.

1.2. The significance of the construction of microlecture resource database

To build systematic and specialized and really fit the needs of classroom teaching of the curriculum of Pro/E application technology of micro teaching resource, study the development mode of student-centered micro-course learning resources and the innovation of course teaching mode, it creates possibilities for students to learn independently, provide a good interactive experience platform for teachers and students, improves the quality of teaching, and provides a reference basis for the mechanical courses construction.

2. The Construction of Pro/E Application Technology Microlecture Resource Database

2.1. With students as the center, select the content of microlecture and design the teaching process

Students are the main body of teaching and the center of classroom. Teachers should analyze students' learning situation and design teaching process in line with their behavioral cognition rules in combination with the nature of courses. Vocational college students have strong practical ability, outstanding personality and poor theoretical foundation, etc. Pro/E applied technology is an application-oriented course and USES cases for teaching. Therefore, attention should be paid to practical teaching in teaching. In curriculum design, we should departure from the global, look at the product modeling design in the use of Pro/E technology requires skills, to cater to students as the center, construct curriculum knowledge structure from the bottom up, selection in product modeling design often use or difficult to use the knowledge or skills to the class design content, constructing course of micro class repository. In the teaching design, the course theme is defined, the teaching goal is determined, the easy-to-understand cases are selected as the carrier of course knowledge, the integrated teaching method of "teaching, learning and doing" is adopted for classroom teaching, and the teaching plan of micro-course is finally written.

2.2. Recording of microlecture

The construction of "Pro/E application technology" micro-course resource database is a systematic project, which requires teamwork. Single micro class production, need to clear the teaching subject, the video time control within 5 ~ 8 minutes, students can independently arrange on intelligent mobile terminal equipment such as time to study, don't show up in the video teachers figure, will cause the student to study the distractions, the focus will be to switch back and forth between teachers' facial expressions and the teaching content, the distraction.

Micro classes should take courseware, teaching video, music and subtitles and other multimedia resources as carriers to present the boring classroom teaching in a brand-new way, so that students can enjoy the learning process visually and audibly, stimulate their interest in learning, and lay a good foundation for learning product modeling design [2].

3. Teaching Practice of the Pro-E Applied Technology Course

3.1. The change of the students' learning mode, realizarion of the integrated teaching of "teaching, learning and doing"

The teaching of the course takes the teaching cases selected by teachers as the carrier to guide students to learn the knowledge points. The whole teaching process can be divided into pre-class preview, classroom teaching, independent practice, teamwork and after-class review. Micro-class runs through the whole teaching process. Before class, students can independently arrange their spare time to preview on their mobile phones and find relevant materials to prepare for teamwork projects according to the teaching tasks assigned by teachers. After being taught by teachers, students need to complete classroom exercises independently. In this process, students can solve their doubts and complete classroom exercises by consulting teachers or repeatedly watching video of knowledge points. Teamwork project is a comprehensive application of knowledge points and knowledge points learned in the past. The difficulty coefficient increases. Therefore, it is carried out in a way of teamwork. After class, students can watch micro-class video to review and deepen their understanding of knowledge points.

Micro-classes bring changes to students' learning style. Learning is no longer limited by time and space, and can be done anytime and anywhere. At the same time, it also brings changes to classroom teaching. Students can complete the learning and application of knowledge points in the classroom, so that the integrated teaching of "teaching, learning and doing" can be realized.

3.2. Highlight the main role of students, a variety of roles of teachers

Students are the main body of teaching, the center of learning, a complete individual, but there

are differences between each individual. Under the traditional teaching mode, classroom teaching is teacher-centered and promotes course teaching with a unified teaching schedule. However, students are different, which leads to different learning. Therefore, the traditional teaching mode needs to be changed, and the application of micro-course makes this change become a reality. Student-centered classroom teaching, students can own arrangement according to your own learning progress, after finishing a knowledge point of learning into the next knowledge learning, teachers teaching in unification counselling, need to supervise the student's learning process, cultivate the students' learning responsibility consciousness, students can independently by micro lesson video learning, interactive discussion between students and teachers arrangement of after-school exercises, etc., ensure the learning process. Which highlights the subjectivity of the students in the teaching mode, teaching around the students, the teacher's role in addition to teaching, also need to bear the recess coaching, team cooperation project of the host, students learning process regulation, training students' responsibility consciousness and so on a variety of roles, the teacher gives more [3] mission and responsibility.

3.3. Teaching evaluation and optimization

Students can evaluate the micro course while learning it. Student evaluation is a very important link, understand the problem of the Angle is different, the effect of the present must be different, through the evaluation of students, teachers can understand advantages in the course of the micro credit, also can timely find the problems or defects, targeted to change and optimization, let the micro course excellence, perfection.

4. Promotion Significance in Mechanical Courses

4.1. Student-centered teaching idea

Students are individuals of learning and the center of teaching. The teaching design of courses, the implementation of classroom teaching and the production of micro-courses are all carried out around them. Lead students to integrate into classroom teaching, appropriately increase student interaction and teacher-student interaction, active classroom atmosphere, improve students' interest in learning. Therefore, the student-centered teaching concept should be always carried through in the course construction.

4.2. The improvement of classroom teaching mode is in line with the curriculum requirements

The classroom teaching of Pro/E applied technology adopts the mode of teacher teaching + student practice + teamwork to promote the course learning, and truly realizes the integrated teaching of "teaching, learning and doing". Can draw lessons from the teaching pattern of other machinery, make a change in the traditional teaching mode, combined with modern information technology, using methods such as micro class, build to the current situation and the nature of the teaching mode, learning never being to different courses of knowledge is not the same, although there are common, but must also exist differences, so the improvement of the teaching mode must be in accordance with actual demand of the course.

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