

Discussion on the Flipped Classroom Teaching Mode of College Physics Based on Micro Class Resources

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Abstract: The flipped classroom with core Microlearning can not meet the learning needs of students in actual teaching, and there is a clear inconsistency between the construction and application of Microlearning resources. According to the characteristics of the programming program, it is very important to research and construct the micro class resources related to Java. Education practice, reform is to adapt to the characteristics of students, can meet the needs of students, the use of micro venue resources, improve the level of students' programming and programming ability, and provide reference for the same route of education reform.

1. Introduction

With the development of the times, China's higher education has gradually stepped into the ranks of information technology[1]. At the same time, due to the promotion of flipped classroom at home and abroad, the construction of related micro class resources has been greatly developed, and more and more schools begin to build micro class resources for various courses. There are more and more academic researches on the construction and application of micro course resources. Taking java course as an example, nearly 1000 Java micro currencies have been searched on various platforms. However, due to the large gap between students' resources and teaching conditions in Colleges and universities, the application of micro class resources and the implementation effect of flipped classroom teaching are not obvious[2]. The main reason lies in the extracurricular learning part of flipped classroom, which requires students to have strong self-discipline and persistent learning habits, which is generally lacking for college students in China. According to the characteristics and abilities of different levels of students, this paper proposes to build Java micro course resources based on the "semi flip classroom" model, according to the characteristics of the programming course and the characteristics of college students, and try to apply them to teaching practice. To meet the needs of students and effectively improve the teaching effect of programming course.

2. Semi Flipped Classroom and Micro Classroom

2.1. SO CALLED "HALF JUMP CLASSROOM"

The traditional classroom dominated by teachers is increasingly questioned. The main reason is that the initiative of students in the traditional classroom is generally insufficient; the flipped classroom model has changed the traditional classroom, and the teaching organization form has changed from "classroom teaching + homework" to self-learning before class[3]. In the falling classroom, students' self-learning is the main research topic. After its successful application in foreign classrooms, it has gradually been accepted by domestic scholars and front-line teachers. Although many front-line teachers have carried out relevant application research, but for various reasons, the practical application of China's front-line education is not optimistic. On the other hand,

because of the compact curriculum design, students have no time to study all kinds of courses outside the class. On the other hand, students do not have effective extracurricular learning methods, and their self-discipline and self-learning ability are insufficient. In order to achieve the effect of classroom implementation, this paper summarizes the concept of "secondary education classroom" of teacher training course, and puts forward "half flipped classroom", which is to find a balance between students' self-learning and teachers' guidance. This balance is not only due to students' lack of self-discipline, but also taking into account the initiative of student accounts. In terms of organization, teachers and students, the "semi flipped classroom" is different from the existing flipped classroom.

2.2. "SEMI FLICKER CLASS" AND MICRO CLASS

The concept of Microlearning was first proposed by Hu Tiesheng in 2011. He mentioned that micro learning, as the main carrier, is teaching video. I think it reflects various teaching and learning activities that teachers practice for specific knowledge points, or teach relevant knowledge in the process of classroom teaching[4]. The core content of "micro course" is teaching video. The application of micro class is often combined with flipped classroom. The "semi flipped classroom" produced by flipped classroom is still used as the main teacher's Micro lecture. In this mode, Java micro class resources are constructed and applied to educational practice. In the activity, it is more specific and applicable. " The "half jump classroom" fully considers the learner's factors, it can focus more on the learner. The "semi flipped classroom" of this article is also a change of students' learning mode, that is, micro learning resources or core, and self-study is the first. However, in the time organization, it is not outside the classroom, but in the classroom. This is fundamentally different from flipped classroom. It is mainly to strengthen the supervision and guidance of students' self-study.

3. Construction and Application of Java Micro Course Resources

At present, the construction of micro course resources in domestic universities is increasing rapidly[5]. Take java course as an example, Java micro course resources found on the Internet are very rich. The classification of these micro curriculum resources can be divided into the following situations:

3.1. MICRO CURRICULUM RESOURCES OF ONLINE ONLINE COURSES. ON MAJOR MOOC PLATFORMS

We found that Java courses of learning platforms such as kosla, imooc and love courses have complete course instruction videos, which conform to the characteristics of micro courses, and are generally short micro course videos. Learners can register for videos to watch the platform learn java courses. However, the effective interaction between teachers and students and the lack of guidance books, in order to program and other powerful routes, the actual situation is that if you record online and train online, you can master the ability of Java programming and programming practice, which is very difficult. Even if some learners pass the online exam, their practical programming skills are still weak. At the same time, Java education videos of each MOOC category have different categories and their knowledge descriptions[6]. Therefore, there is a big gap between these micro courses and classroom guidance, and it is difficult to play an appropriate role as an assistant outside the classroom.

3.2. MICRO COURSE RESOURCES ARE CONSTRUCTED UNDER ADMINISTRATIVE ORDERS. THE CONSTRUCTION OF UNIVERSITY INFORMATION

The progress of design is to develop java micro course resources based on the executive instructions of school leadership and other policy requirements. For example, universities have clear requirements for online courses[7]. In Java and other basic lectures, there are many micro lecture videos related to various universities. This Microlearning configuration usually satisfies the corresponding checks as the first element. Due to the deviation from the development goal, the

actual development of micro courses consumes a lot of manpower, material and financial resources, but the proportion of application to student groups is not high, and the role of micro learning is not fully utilized. Some micro courses have been used for a period of time, they will gradually give up, resulting in a waste of educational resources.

3.3. MICRO COURSES UNDER COMPETITIVE EVALUATION. DRIVEN BY COMPETITION OR COMPETITION

The development of necessary micro course resources is influenced by the competition standard. When they were produced, they did too much in scoring standards[8]. The response plan and demonstration of the whole course are insufficient, and the resource construction is insufficient. In addition, the micro class competition is not a system but a separate part. This kind of single micro class can not be systematically applied to teaching, and the scope of use is very limited. 3.4 Java Microlearning resources under the teaching research project plan. This is an example of Java micro class resource development. The goal is clear, the developer has the condition to carry on the pre investigation and the teaching application, so the developed micro class has the certain applicability, can effectively help the classroom teaching.

4. The Strategy of Building Java Micro Class Resources in Semi Flickering Classroom

After determining the teaching mode of "semi cross classroom", the Java micro curriculum resources are constructed on this basis[9]. In recent years, after professor's exploration and practice, the main strategy of building Java micro curriculum resources suitable for "half jump classroom" is studied.

4.1. CLEAR THE GOAL

Before the establishment of microlingzhi resources, it is necessary to define the construction objectives. In the construction of University and micro course resources, lectures are not designed to replace lectures. The construction of micro curriculum resources here is to improve the teaching efficiency and improve the quality of personnel training as the auxiliary and expansion of the curriculum. In the case of developing Java micro class resources, the ultimate goal of development is to fully apply these Java micro class resources to teaching, so that students inside and outside the classroom can benefit. Therefore, the purpose of Java micro class resources based on the "semi cross classroom" mode is to be able to apply the teaching practice after the development of micro class resources.

Table 1 Survey of students' demand for English learning satisfaction

Survey items	A	B	C	D	E
English courses can meet your needs	In full agreement	Agree	Uncertain	Disagree	Not entirely agree
Percentage	4	11	24	46	15
Satisfied with the current teaching methods of Teachers	In full agreement	Agree	Uncertain	Disagree	Not entirely agree
Percentage	12	27	25	25	16
The professional quality of teachers can meet my requirements	In full agreement	Agree	Uncertain	Disagree	Not entirely agree
Percentage	56	36	6	0	0
High frequency of use of multimedia and network materials	In full agreement	Agree	Uncertain	Disagree	Not entirely agree
Percentage	6	7	16	47	23

4.2. SURVEY

Based on the individual differences of student groups, it is necessary to investigate the research situation of the teaching group before the establishment of micro class resources. Take java course

as an example. The students studying java course are all technicians. They collect discussions, interviews, and information about students who have learned and are learning. The recognition of the main knowledge in Java is the basis of the division of java knowledge points, as well as the determination of the difficulties and difficulties in the second half, which is the difficulty for Java to replace teachers. At the same time, learners' comprehensive understanding helps them develop more and better micro class resources according to their characteristics. Through the analysis of students' learning characteristics, students' groups are generally afraid of programming languages and lack the ability to solve problems with Java. Therefore, in the construction of Java Microlearning resources, it is necessary to add programming application links appropriately.

4.3. MICROLEARNING DESIGN BASED ON LEARNING THEORY

If we want to use Microlearning resources in the course of "semi flipped classroom", we should not rush to design. The purpose of micro courses is to solve the key and difficulties of education, which should be fully designed before micro learning. In the construction of Java micro class resources, the first thing to do is to reorganize the Java programming content according to the characteristics and order of learners' learning programs. Divide the content of Java programming into different knowledge points, and make knowledge card. In order to help students better carry out learning plan, the division of knowledge points and context must follow the cognitive rules of students. Significance construction of design knowledge.

5. Conclusion

The development of Java micro class resources with "half turn classroom" as the core is clear. In the practical education application research, according to the above strategy construction and the "half turn classroom" suitable for Java micro route resources utilization can greatly improve the enthusiasm of learning students, improve their actual programming ability. At the same time, it also provides standards and specifications for the establishment of micro signal resources in other fields.

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