

Research on Online and Offline Hybrid Teaching under UML Course

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Abstract

Taking the Unified Modeling Language UML course as the research object, this paper carries out the online and offline hybrid teaching method, constructs the online curriculum resources and designs the offline classroom teaching in combination with the course characteristics. The practice shows that this hybrid teaching method has good teaching effect and improves the students' enthusiasm for autonomous learning.

Keywords

UML; Online and Offline Mixed Teaching; Reform in Education.

1. UML course

As an application-oriented undergraduate college, unified modeling language (UML) is a supporting course for software engineering majors. By introducing UML Unified Modeling Language and some related modeling knowledge, UML course enables students to master some effective modeling methods in the process of software development and design on the basis of understanding, and can draw UML graphics such as use case diagram, object diagram, class diagram, sequence diagram, state diagram, activity diagram and department diagram, so as to facilitate the development of object-oriented system. As a universal modeling language, UML has the characteristics of simplicity, standardization and unity. It is used to clearly describe the software, visually process, construct and establish the working documents of the software system, and provide convenience for the development of object-oriented system.

UML software modeling course is practical. Learning this course according to the traditional classroom teaching mode of "teacher-centered, book centered and classroom centered", students have less hands-on practice, low student participation, low practical ability and poor teaching effect. Therefore, it is urgent to change the traditional teaching mode. In the teaching process, the UML curriculum is reformed by using online and offline hybrid teaching, which not only pays attention to students' hands-on and brain, but also strengthens the interaction between teachers and students and improves students' learning autonomy.

2. Online and offline mixed teaching practice under UML course

Around the idea of learning as the center, the mixed teaching practice of UML course is carried out. The course learning is divided into two main modules. The first module is online teaching. The common online teaching platforms include classroom school, superstar learning, etc. The second module is offline teaching. The specific teaching process is shown in Figure 1.

2.1 Online teaching

According to the course teaching plan, upload the course content on the online teaching platform for about two weeks in advance. Students complete the tests of basic knowledge points, watching teaching videos, topic discussion and other tasks before the learning date specified by the teacher.

This operation, as a part of students' usual grades, aims to urge students to complete pre class preview on time and lay a good foundation for offline classroom teaching.

Another function of online teaching is to consolidate and review the knowledge points learned after class. Teachers can arrange paperless online homework on the online teaching platform, and let students watch teaching videos for the knowledge points they don't understand, so as to consolidate and strengthen the learning content of this class.

2.2 Offline teaching

Offline teaching generally refers to classroom teaching, which adopts face-to-face communication. This link is the key link of the course learning effect. This link enables students to actively participate in the classroom in a relatively short time, construct knowledge, understand knowledge points and obtain effective knowledge and ability in the learning process.

Offline teaching focuses on students' hands-on practice, models the software system using UML technology, and draws UML graphics such as use case diagram, object diagram, class diagram, sequence diagram, state diagram, activity diagram and deployment diagram. Task driven, group cooperation and mutual evaluation between teachers and students can be used to design classroom teaching content and activate the learning atmosphere in the classroom.

Teachers will summarize the knowledge points of the teaching content in class, and set interactive Q & A on the PPT to enable students to discuss and ask questions in class and truly understand the knowledge points learned.

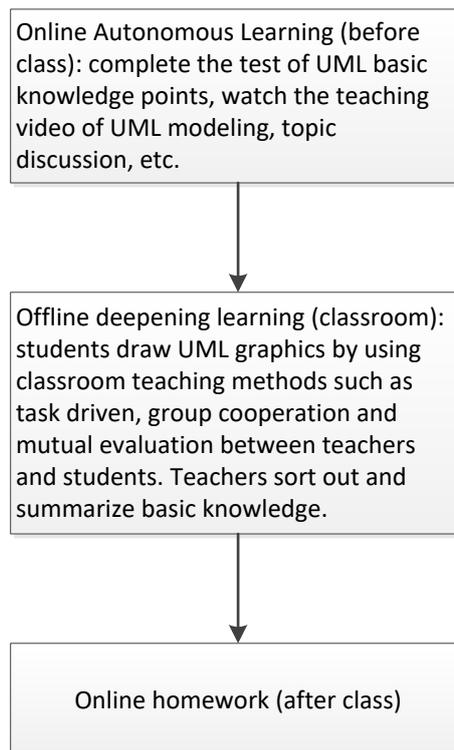


Fig.1 Teaching process of UML course based on online and offline hybrid

As can be seen from Figure 1, the teaching process of UML course is designed as a teaching mode of online preview, offline discussion and homework consolidation. Online autonomous learning focuses on basic knowledge investigation and basic cases, which mainly allows students to have a better understanding of the knowledge to be learned. Offline discussion to improve students' mastery of knowledge and application ability through face-to-face communication. Offline homework mainly focuses on project analysis training to exercise students' modeling ability. Through the mixed

teaching of UML course, students can transform professional theoretical knowledge into professional skills, practical ability and engineering ability, and exercise students' thinking and practical ability in an all-round way.

3. Course evaluation method

At present, colleges and universities are actively exploring the online and offline mixed teaching mode, and the curriculum evaluation method of this teaching mode has been discussed by everyone. In the existing teaching system, there are restrictions on the proportion of peacetime scores and final examination scores. However, with the continuous promotion of the hybrid teaching mode, peacetime scores should pay more attention to process evaluation. Therefore, based on the online and offline hybrid UML course teaching practice, the contents of process evaluation should be refined and adjusted. According to the time sequence of a class, it is divided into pre class, in class and after class, that is, the process evaluation corresponds to the above three time periods, which are subdivided into three parts: autonomous learning, discussion participation and homework, accounting for 30%, 40% and 30% respectively, which can greatly improve students' enthusiasm for autonomous learning. The final examination result is still the result of the test paper, which tests the students' learning results for a period of time and helps students find their weak links.

4. Summary

UML unified modeling language is a practical course, but it is difficult for students to understand the knowledge points due to conceptual abstraction. This paper adopts the online and offline hybrid teaching method, carefully designs and constructs the online curriculum resources and designs the offline classroom teaching mode. The teaching practice shows that this teaching mode can enable students to participate in the classroom independently, greatly improve students' learning participation, and significantly improve the teaching effect.

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