

Exploration of Online and Offline Mixed Teaching Mode in the Course of "Web Development Technology"

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Abstract

With the development of science and technology and information technology, higher education has also ushered in a profound educational reform. This paper taking "web development technology" which is a compulsory course for software engineering as an example to explore the online and offline mixed teaching, focusing on the curriculum positioning, the implementation of online and offline hybrid teaching, and the effect of online and offline hybrid teaching. Through the research, it is found that online and offline hybrid teaching has obvious effect on learning centered stimulating students' autonomous learning, improving students' participation, so as to achieve students' mastery of relevant knowledge and significantly improve students' performance.

Keywords

Online and offline mixed teaching; Teaching implementation; Teaching evaluation.

1. Introduction

In the practice of global educational innovation, online education as a new educational mode is becoming an important engine for promoting the transformation of higher education by virtue of its advantages of being free from time and geographical constraints and supporting personalized learning. It not only helps universities successfully cope with the COVID-19 crisis, but also coexists with the traditional offline education mode for a long time in the future. In order to complement the advantages of the first mock exam and the online teaching, the online and offline mixed teaching mode came into being. This mode has been adopted by many scholars and applied to the theoretical and experimental teaching research of various majors. The development of information technology has triggered a profound educational reform. Various technology-based learning resources and new teaching modes emerge one after another, such as MOOC, SPOC, flipped classroom and online and offline hybrid classroom, which have become the new favorites of educational research and practice. According to the characteristics of "web development technology" course of software engineering specialty, this paper discusses the reform of online and offline hybrid teaching mode by using learning pass and classroom teaching platform, and provides reference for online and offline hybrid teaching reform.

2. Course Orientation of "Web Development Technology"

The course of "web development technology" is one of the compulsory professional courses for the undergraduate major of software engineering. The course for the software engineering major of the Computer College of Guangdong University of science and technology is set to 56 class hours, including 18 class hours for the theory course and 38 class hours for the classified discussion and practice course. The course mainly teaches the basics of PHP syntax, database operation, form and session technology, file and image technology, object-oriented programming and ThinkPHP framework. Through the study and practice of this course,

students can master PHP website development technology and independently develop e-commerce websites and other project related abilities.

According to the talent training objectives of software engineering majors, the purpose and task of this course is to enable students to learn and understand the PHP Technology of web page development through the study of this course. In the process of teaching, "learning is the center", integrate into the curriculum ideology and politics, embed cutting-edge technology and practical technology, and master the key knowledge of web page development, so that students can adapt to the needs of the workplace as soon as possible in the future, And make good choices to lay a good foundation for further study and engaging in web development in the future.

Online and offline hybrid teaching is an innovative teaching method that makes full use of the advantages of online resources and offline interaction. It is a means of deeply integrating information technology and traditional teaching to promote students' learning and improve learning effect. Online and offline hybrid teaching is not a simple superposition of teaching contents, but an organic integration of online and offline teaching contents and teaching methods, so as to deeply tap the potential of teachers and students to "teach and learn" and fully mobilize the enthusiasm of teachers and students to "teach and learn". To achieve this goal, the design of online and offline hybrid teaching curriculum is particularly important. The online and offline systematic design of the curriculum realizes the organic combination of "student-centered" and "teacher led", the organic combination of Online Autonomous Learning and offline interactive communication, and the combination of process evaluation and summary evaluation, which is the "web page development technology" The course provides a three-dimensional and multi-dimensional teaching environment to achieve the relevant objectives of the curriculum. This course design is based on superstar learning link and classroom network platform, with the teaching policy of "learning as the center", the principle of "learning as the main body and teaching as the leading", and the core of "ability training". According to the characteristics of "web page development technology" course, the online and offline mixed teaching mode is adopted, and the teaching design link is organically and uniformly implemented according to the three stages of perceptual knowledge, processing knowledge and applied knowledge, so as to achieve the purpose of learning for application.

3. Implementation of Online and Offline Hybrid Teaching

The teaching process of online and offline hybrid teaching mode is divided into in class teaching links and extracurricular second classroom. The in class teaching link is divided into three stages: pre class preparation, in class implementation and after class feedback. The teaching content includes theoretical knowledge teaching, design and comprehensive practical projects to promote students' knowledge and practice. The extracurricular second class is mainly for students who have spare capacity and interest or need to continue in-depth learning. It provides the second class through platforms such as well-established innovation and entrepreneurship education courses, industry university cooperation collaborative education projects, college students' innovation and Entrepreneurship Training Program projects and International College Students' competitions. The course content is mainly comprehensive, innovative and interdisciplinary projects, Encourage students to learn well. This paper focuses on the teaching links in the course. This course pays equal attention to theory and practice. The school's Web Development php laboratory and various cloud desktop laboratories can meet the teaching needs.

At present, teaching should not only impart knowledge, but also emphasize the cultivation of ability. Online and offline hybrid teaching has created two teaching scenarios. Online teaching focuses on autonomous learning and self-management, and offline teaching focuses on teacher

guidance and inspiration, which has changed the traditional teaching mode and realized a new teaching method. Therefore, the change of teaching mode has also changed the teaching content, and the new teaching scenario needs a new knowledge structure to match it. According to the characteristics of "web development technology", this course adopts the online and offline mixed teaching method, and introduces actual cases for teaching in the teaching process. Practical teaching cases are sufficient and carried out in accordance with CDIO (coherent, design, implementation and operate) mode. The syllabus of "web development technology" course explored in this paper meets the requirements of professional talent training objectives and training specifications; Integrated into the curriculum ideology and politics, it is scientific, cutting-edge and practical, and can reflect the curriculum content system; The knowledge points are clear and definite, reflecting the education and teaching concept of "learning as the center". The practical teaching conditions of the course can meet the teaching requirements. The practical course is constructed according to the CDIO concept, and students can selectively complete tasks with reference to their own professional level. After years of verification and adjustment, the practical teaching scheme has achieved obvious results. After participating in the comprehensive practical training, the students' overall knowledge level has been improved. The new online and offline teaching mode needs to be equipped with corresponding multi-dimensional assessment methods. To carry out the offline and online mixed teaching reform, students need to complete the learning tasks of corresponding courses in IMOOC and submit relevant supporting materials for assessment by teachers. Obtain a certain proportion of final grade after assessment; The process assessment will be integrated into the assessment process. At the end of this course, the closed book + machine test method is adopted for assessment, that is, to investigate the students' understanding and mastery of the theoretical knowledge of this course, and to assess the students' application and practice simultaneously. The overall assessment method has been unanimously recognized by the students and has a high degree of implementation. Using the online superstar learning platform, you can timely understand the learning progress of students and the statistics of learning and homework completion of each module, and finally record them in the form of scores. See Figure 1 and Figure 2 below for specific records:

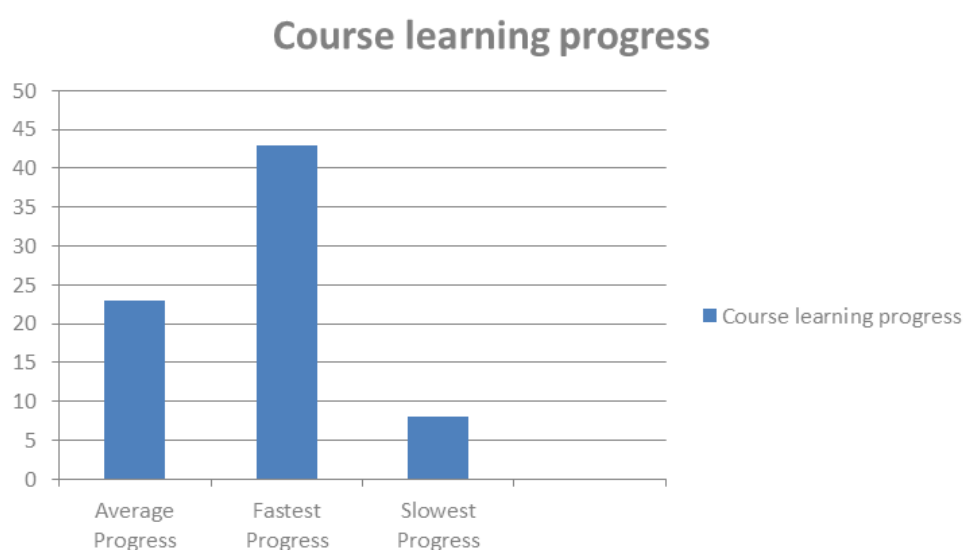


Figure 1. Course learning progress

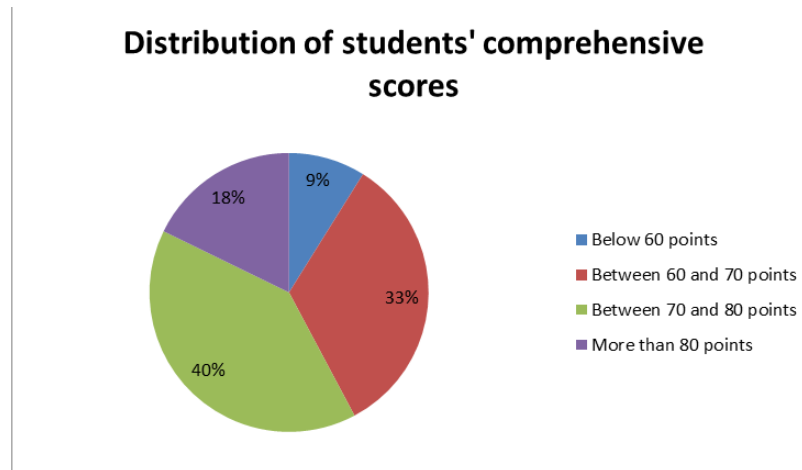


Figure 2. Course score distribution

4. The Effect of Online and Offline Mixed Teaching Mode

The school supervisor rated the teachers' attendance of the courses as excellent. The advantages and characteristics of online and offline Hybrid Teaching of this course are particularly emphasized. In the past two years, the average student evaluation score of teachers in this course group is 93.5. Through the development of the course, students' computer level and comprehensive quality have been greatly improved. Students have achieved excellent results in national competitions such as blue bridge cup and Chinese college student design competition. This shows that the reform of teaching mode can not only improve students' learning enthusiasm, but also improve students' performance and programming ability.

5. Conclusion

With the development of information and intelligence, the high-quality development of higher education and the reform and deepening of educational innovation, the reform of higher education teaching mode is an inevitable trend. Online and offline hybrid teaching has become one of the means of educational information development and has been widely valued by educators. According to the characteristics of the "web development technology" course, this paper carries out teaching design and teaching reform exploration in combination with the online and offline mixed teaching mode. From the perspective of teaching effect, it has achieved certain results. However, due to the short practice time, the small number of class samples, the single course, the online and offline mixed teaching effect is not fully reflected, and there are deviations in the research results. The next step is to further study, increase experimental samples, apply them in different grades and courses, and then compare them. At the same time, summarize experience and shortcomings, and constantly improve and improve the quality and effect of online and offline hybrid teaching.

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