

The Research and Practice of Mixed Teaching Model in the Teaching of Network Service Configuration and Management

Xiangmei Li^a, Zhi QIN^b, Bin HAN^c

School of Sybersecurity, Chengdu University of Information Technology, Chengdu, Sichuan 610225, China

^alixiangmei@cuit.edu.cn, ^bmercyqz@cuit.edu.cn, ^chanbin@cuit.edu.cn

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Abstract: With the continuous development of network technology and the promotion of "Shuangwan Plan", the teaching reform of online and offline mixed teaching mode was imperative. This article took the course of "Network Service Configuration in Management" as an example, applied the online and offline mixed teaching mode, and analyzed the learning situation of the course, and completed the research and practice of the online and offline teaching design of the course. From the final teaching display, The online and offline mixed teaching of "Network Service Configuration and Management" course had improved the teaching effect.

1. Introduction

With the continuous development of network technology, online teaching has gradually become popular. Especially due to the impact of the new crown pneumonia, most schools had implemented online teaching. Judging from the results of pure online teaching, the teaching effect was not ideal. With the promotion of "Shuangwan Plan", a novel teaching mode—mixed teaching came into being. It referred to the combination of online online learning and offline traditional classroom teaching with the help of an online teaching platform, so as to achieve an organic integration of "learning" and "teaching". Since it was not limited by time and space, the distribution of teaching content and time could be adjusted in time according to the actual teaching situation, so that the teaching of teachers and students' learning were compared with traditional teaching Diversified. At the same time, it truly reflected the student's dominant position. This teaching model had changed the teaching concept. With the help of the rich teaching resources of the network platform, the classroom teaching content had been expanded, the learning time of students had been prolonged, the students' interest in learning had been stimulated, and the quality of teaching had been greatly improved. How to integrate online and offline organically to improve teaching effects is a teaching model that all teachers need to research, explore and practice in the post-epidemic era.

2. Academic analysis

"Network Service Configuration and Management" course mainly teaches the configuration and management of DHCP, DNS, Web, FTP, Mail server, etc. It is a professional compulsory course for network engineering majors in our school. Each topic of this course is closely related to people's online life. It is a practical course.

2.1. The traditional teaching mode of this course was as follows :

- (1) The teacher taught the principles of each network service face to face;
- (2) Demonstrated the configuration and management of various network services;
- (3) Arranged experimental tasks for each network service;
- (4) Evaluated the results of each student's experimental tasks.

2.2. The traditional teaching model had the following problems:

- (1) The content of the teacher's face-to-face instruction was mainly guided by the syllabus, and all students were treated equally, individual differences among students were ignored ;

(2) There might be various problems in the configuration and management of network services, which students could not solve by themselves, and were unwilling to ask the teacher, caused some students to be unable to complete the experimental tasks;

(3) In the whole process, students passively accepted knowledge, and the learning effect was not ideal.

2.3. Based on this situation, in the course construction, I hoped to achieve:

(1) Let students learned the "true skills" of solving problems

The teaching content of the course was based on the actual network needs of the society, focusing on the integration of production and education, school-enterprise cooperation, and the use of comprehensive network practice projects to cultivate noble network morality, construct network thinking and network practice capabilities;

(2) Let students study on their own initiative

Taking "students as the center" and adopting online and offline hybrid teaching, we could cultivate "teacher-type students", enhanced students' participation in teaching process, and effectively stimulated students' autonomous learning ability.

(3) Made it accessible to students

We paid attention to the individual differences of students, through the establishment of abundant online learning resources and the radiation effect of "teacher-type students", expanded the ways for students to solve curriculum problems and realized barrier-free learning for students.

3. Mixed teaching practice of "Network Service Configuration and Management"

According to the teaching content of this course, the teaching was divided into thematic teaching and comprehensive practical project teaching. The teaching platform adopted the online teaching platform provided by Chengdu University of Information Technology.

3.1. Thematic teaching

This course involved 7 topics: DNS service under Windows, IIS service, routing and remote access service and DNS service under Linux, WEB service, FTP service, mail service. Each teaching class was divided into 7 groups, and each group was responsible for offline classroom teaching of a topic, and each topic would produce multiple "topic teacher-type students".

3.1.1. Preparation before class

Pre-class preparation belonged to online learning, which was an autonomous learning link for all students.

All students in the topic group completed online topic knowledge learning based on online resources such as a list of topic knowledge points, videos, multimedia courseware, and documentation provided by the teacher. The team leader organized team members to discuss the special teaching plan, assigned teaching tasks, and prepared separately. Through many meetings and discussions, they resolved the confusion in their learning, determined the final special teaching plan, and submitted the plan to the teacher for review. The teacher reviewed the teaching plans, and solved all the problems in the pre-class preparation process for the students. Students in other groups needed to complete the online learning of the topic video and previewed the topic knowledge.

3.1.2. Co-building classrooms

Co-construction of classrooms belonged to offline teaching, which was the development link of "topic teacher-type students". The whole link included: the topic group students shared topic knowledge, organized topic discussions, and completed topic practice tasks.

(1) Sharing topical knowledge

According to the topic knowledge points, the topic group would usually designate 1-2 topic lecturers. The teaching time was designed for one class hour. This session could evaluate the effect

of students' online learning. The lecturers would explain the topic knowledge points one by one according to their own learning and understanding. They were usually recommended by the panel and were generally more confident, and the other group students were willing to listen. However, due to lack of teaching experience, there were problems such as too fast speaking, low voice, insufficient preparation of certain knowledge points, etc., the teacher would promptly remind the lecturer, and always paid attention to student reaction, controlled the rhythm of the classroom and the accuracy of the knowledge points. Throughout the sharing of topic knowledge, any student could raise questions at any time and suspend sharing.

(2) Organizing topic discussions

The topic group students organized discussions. This link was very important for the implementation and evaluation of the students' knowledge of the topics. Through the topic group students asking other groups of students or other groups students raising the topic confusion, based on the exchanges and discussions between them, the teacher could evaluate the mastery of the students' topic knowledge points; through the teacher asked the students the topic knowledge points questions, according to the students' answers, the teacher Supplementary explanations could be made on the missing knowledge points, so that the thematic knowledge points could be fully implemented.

(3) Completing topic practical tasks

All students had to complete topic practical tasks. This session mainly evaluated students' application ability of topic knowledge points. The topic group students must first complete the topic practical tasks and accept the teacher's assessment; secondly, they needed to solve the confusion of other groups students in practical application and help them to complete the special practical tasks.

3.1.3. Summary after class

After class, the topic group students needed to continue to solve the topic problems of the other group students. Secondly, through the pre-class preparation to the co-construction classrooms, they needed to reflect and summarize, and record the topic explanation video. Finally, according to the learning topic knowledge point, the all students expanded studying. Based on the performance of students in each link, the teacher reconstructed and updated the thematic online resources and revised the thematic course reform plan through summary and reflection, so that the curriculum reform had been continuously developed.

3.2. Comprehensive practical project teaching

The comprehensive practical project teaching was offline teaching. Combining the integration of production and education and school-enterprise cooperation, this link focused on training students' comprehensive practical ability in network engineering technology, deepening the understanding and mastery of topic knowledge, and achieving the landing of topic knowledge. This link includes: teachers drafting comprehensive practical projects and students completing the projects.

(1) A practical project drawn up by the course group teachers and the leader of the enterprise information center to ensure that the project comes from the actual network needs of the society.

(2) The teacher guided all students to complete the interpretation of project requirements and project plan design. All students independently completed project implementation and operation and maintenance, and conducted online learning as needed, and submitted the final results to the teacher for review.

In this link, all students complete comprehensive practical projects to realize the comprehensive application of the topic network services, so as to establish noble network morality, construct network thinking, and train network practice ability.

4. Teaching effect

In the course teaching of "Network Service Configuration and Management", through the implementation of online and offline mixed teaching, students' sense of participation had been enhanced, and students' learning enthusiasm had also been inspired through effective

student-student and teacher-student interaction. The teaching effect was mainly reflected in the following two points:

(1) High recognition of teaching mode

After the course was over, an anonymous questionnaire survey was conducted on the students, and the survey results were shown in Figure 1. It could be seen from the figure that the students' recognition of the teaching method reached 100%.

(2) Significant improvement in academic performance

Figure 2 was a schematic diagram of the average score of the final exam of the course. It could be seen from the figure that the average score had changed significantly before and after the reform.

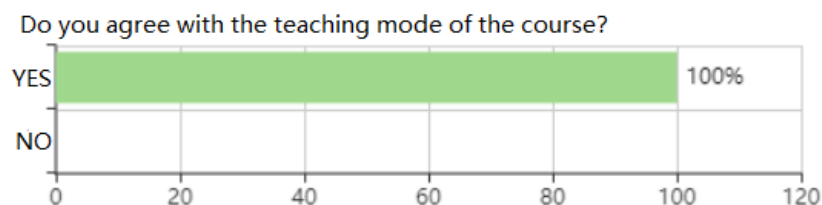


Figure 1 Survey results

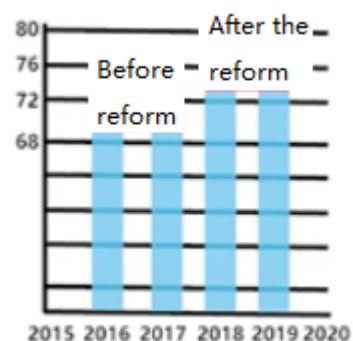


Figure 2 Average score

5. Conclusion

Through the implementation of online and offline mixed teaching model of the "Network Service Configuration and Management" course, the teaching effect had been improved. This teaching model gave full play to the main role of students, enhanced students' sense of participation, inspired students' learning enthusiasm, and effectively stimulated students' autonomous learning ability. In the mixed teaching design, the teacher trained the topic teacher-type students and provided the rich online resources. The students could choose online learning or turn to the topic teacher-type students according to their individual needs, thus realizing barrier-free learning for students. The teaching content of the mixed teaching design focused on the actual needs of the society, through school-enterprise cooperation, the integration of production and education, and the practice of comprehensive network projects to cultivate noble network morality, construct network thinking and network practice ability.

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