Exploration and Practice of Online and Offline Hybrid Teaching Mode for "Web Design and Production"

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Abstract—The development of Internet technology and the arrival of the big data era have forced some changes in the teaching methods of universities, and a online and offline hybrid teaching model has emerged. On the basis of summarizing the online and offline hybrid learning mode, this article explores the online and offline hybrid learning mode through the teaching practice of "Web Design and Production" courses in Rain Classroom. A series of methods are proposed to improve students' learning interest and self-awareness, and timely verification is carried out through Rain Classroom to ensure the quality of education and teaching, laying a solid foundation for students to enter relevant work positions after graduation.

Keywords- Online and offline hybrid learning mode; Rain classroom; "Web Design and Production"

1. INTRODUCTION

With the development of Internet technology and the arrival of the big data era, major universities across the country are promoting new types of teaching quality reforms, and teaching methods in universities have also undergone some changes. Traditional teaching models can no longer meet current teaching needs. The online and offline hybrid learning model has emerged, which can combine the advantages of online and offline teaching to achieve teaching effects that cannot be achieved by a single traditional classroom. This article will take the teaching of the course "Web Design and Production" as an example to discuss in detail how to better leverage the advantages of the online and offline learning mode.

2. TRADITIONAL TEACHING MODE

The traditional teaching mode is a face-to-face teaching mode between offline teachers and students. Generally, it is centered around textbook content, with teachers teaching and students learning. As it is face-to-face, the teacher watches the students study, and the students feel nervous, which creates a sense of atmosphere. And most people still have relatively high respect for teachers. With the cooperation of teachers, they can listen carefully to their lectures and master some basic knowledge. Offline education can cater to the average level of the vast majority of people and meet certain student needs, so as not to distract people from the pace of the large army[1].

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Although teachers are able to interact face-to-face with classmates and answer questions in a timely manner during offline classes, which can be considered the biggest advantage of traditional teaching, how many students in traditional classrooms are brave enough to express themselves without knowledge?

In most cases, traditional classrooms often involve teachers unilaterally imparting knowledge, while students, as cognitive subjects, passively receive knowledge and lack active exploration, making it difficult to truly master the knowledge[2]. This has brought many problems, mainly in the following three aspects:

2.1 The Gap between Teaching and Learning

The initiative of students in learning is ignored, and even due to the influence of exam scope, they can only understand limited classroom knowledge. The traditional teaching model usually starts with teachers providing explanations and demonstrations, and then students engage in imitation exercises. This can easily lead to problems such as missed operational steps, confusion of knowledge points, and memory loss among students. At the same time, teachers lack real-time teaching feedback, and many knowledge points that students do not understand will be overlooked, making it difficult for teachers to control the actual learning situation of students.

2.2 Lack of targeted teaching

When encountering problems, teachers generally adopt the method of repeated demonstrations to solve problems, lacking innovation awareness. This not only wastes classroom teaching time, but also affects teaching progress, and it is difficult to arouse students' interest in learning. The same problem may not only be a problem of students not studying seriously, but also an inappropriate teaching method. Moreover, due to differences in the basic level between students, the acceptance level of the same course may vary for each individual. Some eager and talented students may even find it difficult to access more relevant knowledge. In addition, students have limited classroom time and it is difficult to achieve hierarchical teaching, making it difficult to find truly suitable teaching methods for student learning, resulting in low teaching quality[3].

2.3 Low student engagement

The characteristics of the course "Web Design and Production" require students to engage in a large amount of practical operations, while the traditional indoctrination teaching method makes the knowledge modules of students more rigid, and students may only be able to operate certain modules, making it difficult to adapt to work needs. Moreover, the time for autonomous operation may be relatively reduced due to course issues, and a large amount of repetitive and cumbersome learning time may not enable students to learn knowledge, and may even forget the knowledge already learned in previous courses. Moreover, students always operate themselves after the teacher's teaching, and the completed designs may not be in line with their true mastery. They only imitate the teacher's demonstration without thinking, and will eventually forget, which is not in line with the purpose of education.

In summary, under the traditional teaching mode, it is difficult for students to improve their practical skills, and they often feel helpless when facing social demands in the future. In the end, they still need to relearn, resulting in wasting more time and opportunities.

3. ONLINE AND OFFLINE HYBRID TEACHING MODE

The online and offline hybrid learning model is a teaching model that combines the advantages of online and traditional teaching, combining both online and offline approaches. The online and offline hybrid learning mode fully leverages the advantages of both online and offline teaching methods. By combining the two different teaching modes, the goal of 1+1>2 is achieved, leading students' learning from shallow to deep into the ocean of knowledge, rather than being limited to textbook classrooms[4].

The online and offline hybrid learning model expands the time, space, and capacity of traditional teaching, allowing students to learn anytime, anywhere through the Rain Classroom. The information pushed by the Rain Classroom also makes learning more interesting. There is always a learning video that students can accept, and there is always a piece of information that can stimulate their interest. Therefore, students truly achieve learning what they want to learn and need to learn anytime, anywhere[5].

In this mode, "teaching" and "learning" do not necessarily have to happen together, allowing "learning" to have more choices and allowing students to better complete their studies and learn more knowledge.

The advantages of hybrid teaching mode based on rain classroom include the following aspects:

- Combining the advantages of online and offline learning, it creates an atmosphere of face-to-face teaching, as well as the convenience of online learning in Rain Classroom, which is not limited by factors such as time, space, and content.
- Online learning is beneficial for cultivating students' self-awareness in learning. It adds Rain Classroom online learning, which allows for self learning without supervision or mandatory requirements, and facilitates teacher management of teaching processes. Rain Classroom automatically calculates students' learning time and makes reasonable judgments. Big data makes information clear at a glance.
- Offline teaching is not a copy of traditional classroom teaching, but a development based on online learning. It is no longer a rigid textbook education, but a way to enrich classroom activities and stimulate students' interest in learning through rain classrooms.
- Making it easier for students to be accepted by society, the content pushed in Rain Classroom is more comprehensive and rich compared to textbooks, and it is also a barometer for future work. The teaching videos pushed in Rain Classroom are also more exciting and interesting, always finding suitable teaching videos for students, making them fall in love with learning.

4. The Reform and Application of Online and offline hybrid Teaching Models in the Course of "Web Design and Production"

There is no unified model for the reform of online and offline hybrid learning, but the root cause is still the reform of learning and education issues. Therefore, it is necessary to start from the basic laws of learning and teaching to solve the problem, among which four are particularly crucial, namely:

4.1 Creating a online and offline hybrid learning environment based on Rain Classroom

The online and offline hybrid learning environment based on Rain Classroom includes both online and offline learning environments, which are the fundamental cornerstone of online and offline hybrid learning. The online learning environment refers to the transfer of some offline teaching to the network, supported by software and hardware devices, to carry out online courses through the Rain Classroom push function or a batch of online course websites such as Xuetang Online. Enable students to have sufficient time to digest and understand the knowledge taught by teachers, and truly realize the hierarchical teaching. This not only enables students to learn the professional knowledge of the course well, but also does not delay the progress of teachers in class[6].

The network environment of Rain Classroom can effectively solve the problem of information exchange. Some students may have communication problems with others in offline teaching, especially when communicating with teachers. They dare not express their feelings and are afraid of trouble to classmates. On the online platform of Rain Classroom, everyone can communicate freely, and the rich information on the network can also provide help to them. In the case of joint communication, it is convenient to help students achieve the goals of self-directed learning, free division of labor, and cooperation, and to encourage everyone to work together to complete the project plan[7]. This is beneficial for cultivating students' learning enthusiasm, and browsing more professional knowledge online cultivates their spirit of exploration and innovation. Offline learning environment refers to students who, after learning online, further solve the problems discovered through offline teaching by teachers, combine theory with practice in computer room operations, discover deficiencies in self operation in practice, and strive to practice. Cultivated the enthusiasm of students for self-directed learning and problem-solving, and honed their hands-on abilities.

Rain Classroom can automatically track students' online and offline learning situations, allowing teachers to timely understand their level of knowledge mastery and learning progress, and better adjust their learning progress and content. By understanding the completion status of the project, we can gain a more intuitive understanding of the students' mastery of textbook knowledge[8]. Understanding the progress of teaching activities anytime and anywhere, and providing specialized knowledge lectures and skill demonstrations for the corresponding weak parts to improve students' mastery of knowledge, is conducive to comprehensively and systematically teaching knowledge to students, and better achieving teaching objectives.

4.2 Consolidate knowledge reserves

In any teaching mode, basic knowledge reserves are indispensable, and basic knowledge plays a crucial role in the completion of later projects. Because only when students have a certain level of knowledge reserve can they have the ability to explore independently and meet the requirements of project-based learning. So it is required that each student complete the corresponding preview in the corresponding project, and have a process of self understanding and digestion of basic knowledge, fully mobilizing the enthusiasm of students for self-learning.

Before each class, teachers can assign corresponding preview content in Rain Classroom, prepare corresponding teaching materials, and understand the learning progress and status of students through corresponding browsing records and setting corresponding reading time. And assign relevant test questions in each preview project to determine the varying degrees of preview effects for students, and stimulate their interest in self-directed learning through rating methods[9].

In the preparation of basic knowledge, encouraging students to self-learning should be the main focus, and corresponding text and video explanations should be provided for concepts, principles, and operational methods that may be difficult to teach. In the course of “Web Design and Production”, the most basic basic knowledge is mainly the basic use of HTML language and CSS style sheets. When designing basic projects, we analyze the teaching content from the overall perspective of this discipline, turning knowledge into a tree, a forked tree, and linking knowledge together. If it is only a conceptual knowledge point, it can be changed to fill in the blank questions, allowing students to fully mobilize their subjective initiative, and achieve preview of the knowledge point by searching online or searching for answers in books. When encountering difficult problems, teachers can simplify the problem by breaking it down. By repeating the knowledge points, students can deepen their understanding of the knowledge points. They can also guide students to self analyze and discuss the problem through grouping, further mobilizing their initiative in learning, improving their problem-solving and teamwork abilities, and enabling them to grow more comprehensively and comprehensively.

From the perspective of meeting the cognitive needs of students at different levels, teachers can make comprehensive considerations[10]. For students with weak foundations, detailed explanations can be added and the previously learned knowledge related to this knowledge can be reviewed to increase their mastery of the knowledge points. For students with a good foundation, while previewing, more introductions of new technologies can be added, so that interested students can learn more relevant knowledge, help students form a relevant project system, and better adapt to the needs of society. Interest is the best teacher for students to learn, and if they don't understand, they naturally have no interest. Therefore, learning the basics is of utmost importance[11].

4.3 Project Grading and Classification

The course "Web Design and Production" is a highly demanding course for students to operate hands-on, involving a wide range of knowledge points. Therefore, in the teaching process, not only should students master the fixed knowledge points in the textbook, but also review the operational skills of relevant content, so as to cultivate their overall thinking ability and comprehensive operational ability. In the teaching of the course "Web Design and Production", we have graded the projects based on the difficulty level of the teaching content, allowing

students to learn knowledge in a coherent and progressive manner, and conduct comprehensive ability tests and improvements.

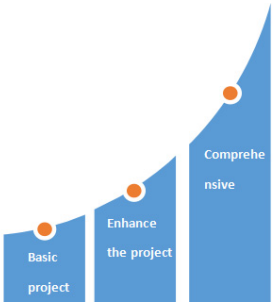

Figure1. Classification diagram of course projects

As shown in Figure 1, course projects are mainly divided into three categories: first, basic projects, which mainly test students' understanding and mastery of simple knowledge. Generally, students can independently complete them through online self-study. The second is to enhance the project, which mainly tests the integration and integration of knowledge points and operations by students. There is a certain difficulty, and it is necessary to complete the operation project by consulting materials, viewing teacher videos, or through teacher classroom guidance, to exercise students' independent thinking ability. The third is a comprehensive project, which mainly tests the mastery and practical application of knowledge by students throughout the course. Through a specific theme, students are allowed to complete the entire project from scratch, helping them solidify their foundation and clarify their learning ideas. Some projects even require forming small groups and working together among group members to complete. This type of learning usually takes a long time and needs to be conducted both online and offline, which can greatly test students' self-awareness in learning.

Taking teaching the basic knowledge of HTML language as an example, explain the general course process, as shown in Figure 2. At the beginning of the class, the teacher cites a webpage and asks students to observe what content is on the webpage. After realizing that a webpage consists of rich text, images, animations, and videos, the basic project can be introduced: what is a webpage or website? What are the basic elements of a webpage? What are the commonly used tools for website design? These questions can all be previewed by students themselves, and through their own efforts, they can search for answers that are easy for them to understand and remember. Then, in class, they can deepen and connect all the knowledge points, explain that all the content seen on the webpage is reflected through HTML, which leads to the concept of HTML tags; Furthermore, it was discovered that text is the most fundamental part of a webpage, and elements such as text, tables, images, animations, videos, etc. can play a role in conveying information; Then, showcase the basic tools for creating web pages, such as Frontpage, Dreamweaver, Flash, and other software. Assign tasks for students to first understand these software offline, making it easier for them to explain and use in the future, and fully mobilizing their initiative in learning.

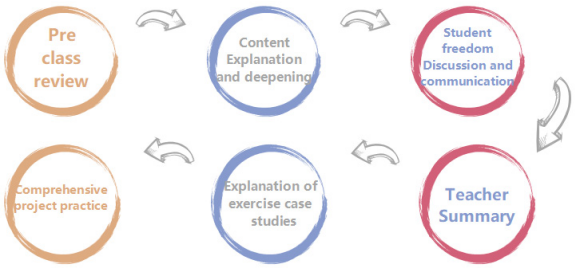

Figure2. Course Content Arrangement Flowchart

During the teaching process, students are invited to answer the questions raised earlier and explain their understanding of the knowledge points through random roll call in Rain Classroom. Everyone can discuss with each other, and students who answer correctly will receive rewards, while students who make mistakes will be encouraged. Finally, the teacher summarizes the questions and answers, fully arousing students' attention in the classroom, increasing the fun of the classroom, and allowing students to truly enjoy the classroom.

The main purpose of establishing a comprehensive project is to make students truly aware of their ability level, expose problems thoroughly to teachers, and enable students to supplement the knowledge they truly need and improve their hands-on ability. During the training of comprehensive projects, students are prone to slacking off. Because comprehensive projects usually take a long time, some students wait for others to do well and then plagiarize, so teachers should supervise the process of comprehensive projects. The selection of comprehensive projects is also extremely important. Teachers should conduct market research and select projects that are highly relevant and closely related to student learning, and adapt them to a level that students can accept. Small projects can be divided for practice first, and then integrated into a specific and complete project. When students encounter technical problems in project production, they can discuss with each other online and offline, establish mutual assistance groups, learn from each other, supervise each other, and promptly seek verification from teachers to ensure the authenticity of the answers. At the same time, it also helps teachers grasp the weaknesses of students and make teaching adjustments. It can also fully mobilize students' initiative, exercise their hands-on ability, and make their technical level more in line with market demand.

4.4 Emphasis on process assessment

The assessment and evaluation of any course should scientifically reflect the overall teaching effectiveness of a course and test the learning effectiveness of students. Therefore, it is important to establish a sound and reasonable course assessment and evaluation system for each course.

A good assessment and evaluation system should not only focus on results, but also on the process, so that students' learning attitude throughout the course can be reflected through process assessment. However, traditional teaching effectiveness checks have fallen behind the needs of social development. They can only evaluate the performance of students in final exams and their understanding of certain professional skills, which does not meet the needs of today's society for creative talents and the examination of students' comprehensive qualities.

The assessment plan for the online and offline hybrid teaching mode places more emphasis on process assessment. Through the Rain Classroom platform, students' online learning enthusiasm, offline classroom performance, and project completion degree are counted. Overall, it is necessary to evaluate students' learning situation from the perspective of the teaching process. Therefore, in addition to traditional classroom and grade evaluations, the performance of students in the online environment also occupies an important position. From the perspective of stimulating students' learning enthusiasm and initiative, not using a single exam result as the sole scoring criterion is beneficial for stimulating students' enthusiasm for learning, so that students will gradually develop good habits of self-directed learning. Only by integrating the learning data of students in Rain Classroom, their positive situation in offline classroom, and their exam scores can a student's learning situation and true abilities be truly reflected.

Teaching platforms such as Rain Classroom can be well used by students to discuss knowledge and solve problems. It also facilitates teachers to constantly understand the learning status of a student and grasp the overall learning progress of the student. It is conducive to helping students solve learning problems in a timely manner, achieving "process oriented guidance" in teaching, enabling students to process information, enabling them to "learn", and effectively cultivating their comprehensive abilities such as observation ability, key information discovery, summarization, and knowledge application.

In summary, when constructing online and offline hybrid courses, teachers should first create a good teaching environment, build a rich knowledge system on the teaching platform, and classify knowledge into different levels. A good curriculum construction should be shown in Figure 3, which comprehensively considers student learning and forms a virtuous cycle.

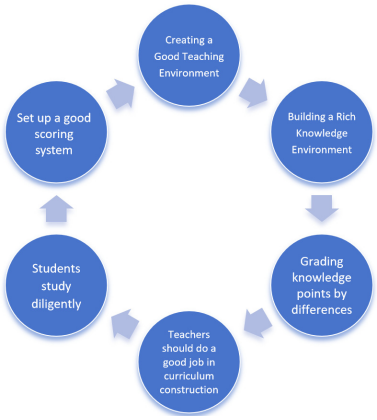

Figure3. Flow Chart of Hybrid Curriculum Construction

5. CONCLUSION

When teaching the course of “Web Design and Production”, it is not only necessary for teachers to teach students the understanding and mastery of software technology, but also to give students sufficient time for comprehensive practice. By independently previewing before class, students can read and watch many information that is not available in textbooks and

keeps up with the times, which can ensure that students will not fall behind in the face of work and social needs in the future, and truly make them feel the power of learning and be interested in learning. The integration of traditional classroom teaching methods with online internet teaching methods has achieved the cultivation of students' theoretical knowledge, self-learning habits, and practical operation abilities, which is of great practical significance for improving their comprehensive abilities.

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