Hybrid Teaching Model Based on Rain Classroom Platform

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Abstract. Rain classroom is a teaching tool that uses Web chat and Office software to support teachers' teaching and management, students' learning and interaction. Through the Rain classroom software, students can receive the teaching content and homework requirements sent by teachers from the mobile terminal. At the same time, students can also feedback the difficulties encountered in the learning process through the Rain classroom, which effectively shortens the communication path between teachers and students. This paper will focus on the classroom teaching method based on the Rain classroom. And how to use Rain classroom to improve the teaching effect and develop students' good learning habits. According to the feedback results of classroom teaching of Navigation Instrument in Navigation major of Dalian Naval Academy, the use of Rain classroom can greatly improve students' interest in learning and teachers' teaching efficiency, and bring a better application platform for classroom teaching.

Introduction

Along with the number of students in Colleges and universities has increased dramatically, however the number of teachers does not match the number of students. Especially basic courses and professional basic courses, more than 100 students' classes are common. In this case, how to improve the quality of classroom teaching and ensure the efficiency of classroom teaching has become a hot research topic [1]. This paper takes solving the efficiency and quality of classroom teaching as the basic starting point, makes use of the "School Online" network platform resources and the use of Rain classroom mobile terminal software, increases the communication density with students, obtains students' learning feedback in time, plays the guiding role of teachers in students' learning process, and realizes teaching and learning [2].

Rain Classroom

Rain classroom is a new teaching tool developed by Tsinghua University and launched by the well-known MOOC platform "School Online" in April 2016 [3]. Rain classroom can realize the organic connection of "pre-class, in-class and after-class", and can give the relevant data of the learning state of teachers and students, and the interactive platform between teachers and students [4]. The use of Rain classroom greatly improves the efficiency and effect of classroom teaching.

Specific Functions of Rain Classroom

The use of rain classes has brought revolutionary changes to both teaching and learning. It has transformed teachers from "saints" in class to "coaches" of students. Rain classes have three main functions.

Customized MOOC Video Platform

After successful installation of Rain classroom, PPT is integrated. Teachers can make courseware well before class, and insert courseware into PPT through "courseware video" or "network video" in
rain classroom. Inserted MOOC videos can come from the school online or from Youku, Tudou and Tencent video platforms [5]. Teachers can record voice explanations on each page of PPT. After PPT is completed, it can be uploaded to students' terminals through Rain classroom. Different from the popular platform of admiring lessons in the past, the content of each section is arranged and organized by teachers according to the teaching content and learning conditions, avoiding the embarrassment of students who want to preview but don't know what to watch and how much to watch. Students need not to find appropriate preview materials in the vast video, which is more targeted and practicable. Sexuality.

**Interactive Platform between Teachers, Students and Students**

In the classroom, teachers and students can use Webchat to login in the Rain classroom, and teachers can initiate a time-limited discussion day. When a student expresses his or her views, other students can send bullet curtain to put forward their views, which can not only keep the discussion hot, but also ensure the order of discussion in class. In addition, the use of bullet curtain is very synchronous with young people's online life, which is in line with students' habits.

**Data Platform for Students' Learning Effect**

When teachers prepare elaborate explanations and upload preview materials before class, the most worrying thing is that students cannot make good use of these resources to achieve the desired learning effect. Rain classes make up for the lack of data in the process of teaching management. Rain classroom can count the number and list of students' preview, the effect of students' preview, the problems they encounter in the process of preview, and the number of students who don't understand each knowledge point in the classroom [6]. Through these statistical data, teachers can grasp learning situation more intuitively, and can also supervise students' learning progress through these data.

**Overview of Mixed Teaching Method**

Mixed Teaching Method means to combine network resources with traditional teaching methods organically, to give full play to the functions of teachers' guidance, inspiration and monitoring, at the same time, to effectively stimulate students' initiative in learning and to give full play to students' dominant position in the learning process. Mixed teaching is an improvement of teaching and learning. The rational application of this teaching mode can promote teachers to continuously improve their self-knowledge reserves and teaching organizational ability. On the other hand, it can mobilize students' learning enthusiasm, develop good learning habits and improve students' mastery of knowledge points.

The mixed learning model based on Rain classroom can be divided into three parts: Pre-class, In-class and After-class practice. The specific form is shown in Figure 1.

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**Figure 1. Hybrid Learning Model.**
Classroom Teaching

The good use of Classroom teaching methods can organize classroom teaching more efficiently, and also can better impart knowledge and skills to students. Mixed teaching method emphasizes the "dual ownership" of teachers and students, that is, the leading role of teachers and the dominant position of students [7]. After class, the students complete the understanding of basic concepts, theorems and rules in the mobile terminal of Rain classroom. In class, the teachers open the Rain classroom platform to help students complete knowledge transfer under the background of effective interaction between teachers, students and students.

Classroom teaching mainly consists of four links: problem guidance, discussion interaction, problem solving and ability transfer. Problem guidance is based on the fact that students have watched and learned the materials sent by teachers. Teachers put forward some guiding questions. This link is the basis of interactive links.

Discussing the interactive link can be called the first link of knowledge internalization. Students in the classroom can be divided into several groups according to their seating order, each with about 10 students. One is the discussion link between students and students. Team members can discuss the problems raised by teachers and give solutions within the group. The discussion time of the problem is divided according to the number and difficulty of the knowledge points to be solved in the classroom, and is timed by the teachers through the Rain classroom software. When the time came, each group sent a member to the podium to explain the team's solution. When a group representative is giving a presentation, other team members can evaluate it by sending a barrage. The second is the interaction between teachers and students. When the group members have expressed their views, the teachers should comment on it, point out its advantages and disadvantages, and promote students to absorb knowledge points. Students who dare to put forward their opinions in class should be encouraged to give extra marks to their usual grades.

Problem solving links through discussion among students, guidance, and ultimately come to a solution to the problem. At the end of the problem solving process, the students completed three learning processes: learning knowledge, deepening understanding and internalization of knowledge, but they did not play the role of ability transfer. This part requires teachers to solve a problem and gradually transfer the knowledge learned by students to other situations where the knowledge can be used.

To sum up, the hybrid teaching method based on Rain classroom not only puts forward new requirements for students' learning attitude and habits, but also has higher requirements for teachers' knowledge reserve and teaching organizational ability. In the traditional classroom, the introduction of concepts, the integration of experience, the transfer of abilities and even the discussion are all completed in the classroom. Because of the tense class hours and heavy tasks, sometimes many links cannot be carried out in depth or even ignored. Comparatively speaking, the mixed teaching classroom focuses on cultivating knowledge understanding and application ability, which makes the classroom teaching time more valuable.

After-class Practice

After-class practice can greatly promote the speed of combining students' knowledge and ability. The content of homework after class can reflect the characteristics of applied higher education. The experiment and practice can be used as the main method to arrange students' practice after class in the course of science and engineering. Economics and management courses can arrange students' after-class practical activities by case analysis and questionnaire. Language courses can arrange dialog assignments based on real life and work. After-class homework or practical activities require students to record videos or send them to Rain classroom platform in PPT mode, so that teachers can check students' after-class learning situation at any time.
Summary

The hybrid teaching method based on Rain classroom is the result of the joint development of network technology and teaching methods. Hybrid teaching method combines the dual advantages of network resources and classroom teaching, which greatly promotes the development of modern education and teaching. At the same time, teachers are required to think about how to organize students' interaction, how to pay attention to students' learning needs, and how to establish a good order of teaching and learning on the basis of explaining knowledge points.

Network impacts on every traditional industry, but also brings more high-quality resources. Effective use of Rain classroom network platform can absorb high-quality resources while giving full play to teachers' own teaching characteristics. Therefore, the combination of Rain classroom and teacher teaching is in line with the teaching law. The combination of Rain classroom and students' learning is the key method to cultivate students' lifelong learning ability. The application of Rain classroom makes classroom teaching more efficient, targeted and extended.

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References

[1] Tian Aili, Wu Zhihong. Characteristics of Flip Classroom and Its Effective Implementation [J]. China Journal of Education, 2014(8).
[2] Wang Shuaiguo. Rain classroom: Intelligent Instruction Tool under the Background of Mobile Internet and Mass Grasp [J]. Modern Education Technology, 2017 (5): 31.
[3] Ma Xiulin, Zhong Keding, Liu Lichao. Analyzing the effectiveness of students' evaluation of teaching from the perspective of large numbers excavation [J]. China Audiovisual Education, 2014 (10): 78.
[4] Wu Renying, Wang Tan. Flipping Classroom: Realistic Challenges and Response Strategies for Teachers [J]. Educational Research, 2017 (2): 119.
[5] Huang Chenglong. Rain classroom Makes Teaching Easy [J]. Science and Education Collection, 2016 (12): 28.
[6] Zhang Jinliang, Li Baozhen. The connotation, value and development path of teachers' number-based literacy under the background of large number-based education [J]. Research on audio-visual education, 2015 (7): 14, 17-18.
[7] Shi Yuxin, Fan Xu. Hybrid Teaching Model Design Based on Guidance Method [J]. Audiovisual Education in China, 2010 (7).