Exploration of Teaching Mode Based on Cloud Class Platform Under the Background of Smart Education

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ABSTRACT

With the development and popularization of mobile terminals, big data, artificial intelligence, cloud computing and other technologies, education is currently transforming and developing in the direction of smart education. Its basic characteristics are openness, sharing, interaction, collaboration, and ubiquity. Teaching methods are turning to digital, networked, intelligent and multimedia, and the modernization of education is promoted by education information. How to use information technology to change the traditional teaching mode has become a new hot topic of discussion. This article discusses the "online + offline" hybrid teaching model in colleges and universities, and puts forward research suggestions for the new teaching model.

Keywords: Smart education, "online + offline" hybrid, teaching mode, cloud class

1. INTRODUCTION

Since the end of the 1990s, the Chinese government has put forward the use of informatization to promote the modernization of education, and regards educational informatization as an important strategic decision to realize educational reform and development. With the development and popularization of mobile terminals, big data, artificial intelligence, and cloud computing, the digital and information development of education has become a common phenomenon. After considerable development in recent years, it is now in a period of in-depth application and integration [1]. The widespread application of mobile terminals, big data technology, Internet of Things, cloud computing and other technologies has had an important impact on traditional education models. my country's education models are ushering in major historical development opportunities and have entered the era of smart education.
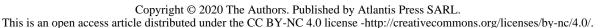
2. CURRENT MAIN TEACHING MODE

The reform of teaching mode has always been a research hotspot in the field of education [2]. With the development and popularization of science and technology, in addition to the traditional face-to-face teaching mode, a variety of new teaching modes and methods have gradually been derived. At present, the most common teaching modes mainly include the following: Traditional Teaching Mode, Online Teaching Mode and Blended Teaching Mode.

2.1. Traditional Teaching Mode

The traditional teaching model is to teach the same content at a fixed time, a fixed place, and a fixed teacher. Students preview before class, teachers teach in class, and students complete homework and review after class. The advantage of the traditional teaching model is that it is conducive to the emotional communication between teachers and students. When teaching, the teacher faces the students and communicates with the students humanely through body language and facial expressions, which is helpful to mobilize the enthusiasm of the students in learning. And the teacher can make corresponding adjustments to the teaching content and methods at any time according to the students' situation. But there are many disadvantages and shortcomings, mainly as follows: There are few resources for students' preview, and students' pre-class previews are mainly realized through existing textbooks; teachers and students lack communication before and after class, and problems cannot be solved in time; students' learning after class is difficult to grasp in time, and the situation is not accurate. Difficult to evaluate students' learning effects in a timely and objective manner [3].

2.2. Online Teaching Mode

With the development of information technologies such as computer networks, mobile terminals, and cloud computing, network-based online teaching has gradually become popular. Because it is not affected by time, location, distance, etc., it has many advantages in learning, which largely removes the restrictions of learners from objective conditions, reduces learning costs, and expands the audience for learning. However, online teaching also has shortcomings such as poor real-time communication, difficulty in interaction between teachers and students, inability to implement on-site control, and weak supervision and deterrence of students.

2.3. Blended Teaching Mode

On the basis of traditional teaching mode and online teaching mode, a hybrid teaching mode that combines the advantages of traditional face-to-face teaching and online teaching has emerged. Blended teaching combines the advantages of the traditional learning model with the advantages of the Internet online learning model, and integrates classroom teaching and information technology. This not only plays the leading role of teachers in guiding, enlightening and controlling the teaching process, but also fully mobilizes the initiative, enthusiasm and creativity of students in learning, which is conducive to improving students' learning effects and improving the quality of teaching [4].

3. DESIGN OF HYBRID TEACHING MODE BASED ON CLOUD CLASS PLATFORM

LanMo Cloud Class is an excellent intelligent teaching aid software using mobile cloud technology. It is mainly based on mobile Internet technology and has two modes: APP and PC. It is an auxiliary teaching tool that is very suitable for mixed teaching. Teachers can create a class with a course through the cloud class. Students join the class according to the invitation code generated by the class to form a cloud class. Teachers can carry out teaching and manage classes in cloud classes. The main functions of class are: class attendance work (different kinds of sign-in methods and sign-in time can be set according to the specific situation), classroom auxiliary functions (brainstorming, raising hands, answering questions, selecting candidates, etc.), organize and carry out various forms of teaching auxiliary activities (sending class notifications, pushing audio, video and text resources, sharing PPT, publishing homework, etc.), teacher-student interaction and research feedback (understand the learning effect of students by communicating with students, answering questions and voting in class). The most convenient is that all the data in the class can be automatically counted, analyzed, generated and exported to files on the PC side [5-6]. Visually and intuitively show us the entire teaching process data.

3.1. Construction Principles

The construction of the hybrid teaching model is based on in-depth analysis of students' academic conditions and courses, with the help of mobile Internet technology, integrating the advantages of "online resources" and "offline teaching", innovating teaching methods, improving teaching quality, and improving students' Learning ability and initiative. The specific construction principles are as follows: Starting from the needs of students' ability and the teaching process, the teaching design of each stage should be formulated according to the teaching goals and students' learning goals; It is necessary to make full use of modern information technology, apply information methods to teaching, and improve teaching effects; To embody the educational philosophy of "student-centered", stimulate students' interest in learning, and cultivate their ability to solve problems [7]; Pay attention to the communication between teachers and students, encourage group collaboration and communication, and enhance students' ability to collaborate; With the help of information technology, the effect of each link of the course is digitized and visualized, and the weak points are analyzed to improve.

3.2. Structure and Composition

The entire blended teaching is mainly composed of four parts: "preview before class" + "class teaching" + "consolidation after class" + "analysis & improvement". Its proportion and content composition are as follows:

Table 1 Proportional structure of the mixed classroom

Teachers & students			Teacher
Preview before class (25%)	Classroom teaching (40%)	Consolidation after class (25%)	Analysis and improvement （10%）
Purpose of the course	Attendance sign in	Review and	Statistics

Course outline	Classroom teaching	answer questions	
Course progress	Classroom teaching	Operation	Data analysis
School related documents	Classroom teaching	Operation	Data analysis
Related learning (text, audio, video, website)	Class interaction	Self-test	Improve
Ppt	Class interaction	Self-test	Improve

Upload various materials in advance through the cloud class, and arrange for students to study in advance. In the course of lectures, it is mainly to help students establish a relevant knowledge system and explain the key and difficult points. After class, through the cloud class information platform, teachers and students can answer questions and communicate online, and complete the homework and tests in the class. The PC terminal of the cloud class can export various submitted files and data in the class, summarize and count the relevant data, generate corresponding data reports, and use the data to show the situation of each student in each link, which is convenient Find the corresponding weak points for improvement.

3.3. Implementation Process Design

The instructor creates a cloud class before the first semester starts and invites students to join, to carry out a full-process hybrid teaching based on the cloud class.

3.3.1. Before class

The teacher creates a class, and students join the class according to the cloud class number of the class announced by the teacher, and set their own student number, name and other information. The teacher publishes learning requirements and key (difficult points) knowledge points in the class; sharing auxiliary learning resources such as Micro lecture (MOOC) videos; Upload course-related policy documents, latest research reports, valuable literature and other online resources, as well as teaching arrangements and teaching PPT. Students can obtain the corresponding experience value after reading the relevant learning materials released in the class. The teacher can check the students' preview situation and feedback on questions, and carry out targeted teaching accordingly.

3.3.2. In class

Teachers can use the cloud class to sign in with a limited time to allow students to complete their attendance. And make use of the brainstorming, group discussion, class quiz, screencast, answering, random roll call and other functions of the cloud class to carry

out lively and interesting classroom teaching. Using the relevant functions of the cloud class saves the teacher's time and energy for activities such as sign-in and scoring, and the cloud class will synchronously record students' participation in classroom teaching, and record the corresponding experience values of students for later statistics and reference.

3.3.3. After class

Teachers can answer questions to students through the cloud class platform, and upload explanation materials for students with a high error rate in the classroom quiz or parts that are not fully explained in class, and put forward review requirements after class to urge students to consolidate the knowledge learned in the classroom. Teachers can also assign homework in the cloud class and check the completion of students.

3.3.4. Process control

According to the course teaching progress, the teacher uses cloud class related functions to remind students who have not viewed the information to view the information at any time; turn on early warning of suspension of subjects and urge students to study quickly; get the list of students who are the most active and need assistance in learning last week through artificial intelligence assistants, and click to view the details of a student to understand its learning progress, activity participation, test scores, wrong questions, comparison with the average level of the class, etc. Give targeted counseling. Through the artificial intelligence aid system, students learn about their learning situation and performance ranking last week, and get relevant suggestions.

3.3.5. Grade composition

The total score of the course consists of two parts: the usual score and the test score. The usual results show how serious students are in the whole course of study; the test score roughly reflects the effect of the student's course learning.

The usual grades are mainly composed of attendance, homework, Q&A and discussion. These contents can be counted, analyzed and exported by the cloud class platform. In the cloud class, you can set the percentage of scores for various activities such as

video resource learning, non-video resource learning, and classroom performance (testing, discussion and answering, etc.). Analyze the relevance of students' curriculum theory scores and cloud class scores.

3.3.6. Result feedback

On the cloud class platform, self-made questionnaires can be used to investigate teaching satisfaction. Understand the help of cloud class for students' learning, the features of cloud class that students love, the factors that affect students' use of cloud class, and whether students are satisfied with cloud class teaching. The difference of the theoretical scores of the subjects of different cloud classes. According to the average scores of the students' cloud class, the students are divided into two groups to explore whether there is a difference in the theoretical scores of the cloud class class scores equal to or higher than the average level and lower than the average level group.

4. CONCLUSION

The hybrid teaching based on cloud class makes up for the shortcomings of traditional classroom teaching. Teachers give full play to the leading role and share learning resources through the platform to allow students to learn independently; diversified evaluations and two-way interaction help teachers to understand students' learning in a timely manner and improve Teaching design to improve teaching quality [8]. Today is the era of "Internet + Education", mobile learning and classroom teaching are deeply integrated, so that inside and outside classes are integrated, and learning is everywhere; in this Internet age, teachers should focus on cultivating students' ability to acquire, process, integrate, use, transfer, and disseminate knowledge and information. In future research, we can further explore how to guide students to rationally arrange online learning time for each subject under the background of multi-disciplinary simultaneous use of mixed teaching mode, improve their learning initiative, and promote the "Internet +" hybrid teaching reform successfully launch.

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