

# Design and Application of Wisdom Classroom Teaching Mode in Big Data Environment

Haiyun Xiang<sup>\*</sup>, Xiao Fu

Southwest Petroleum University, Chengdu, China

<sup>\*</sup>corresponding author

**Keywords:** Big data, Wisdom classroom, Teaching model

**Abstract:** This paper gives a brief overview of the connotation and main characteristics of the intelligent class, and then analyzes the design method of the intelligent classroom teaching mode in the big data environment. And on the basis of this, the practical application of the intelligent classroom teaching mode under the large data environment is studied. Provide reference for relevant teaching staff.

## 1. Introduction

Big data's promotion and application have brought significant changes to many different fields and industries. For teaching work, the popularization of big data technology and Internet has promoted the emergence of intelligent classroom teaching mode and promoted the intelligent development of classroom teaching. In order to further improve the feasibility of wisdom classroom teaching, it is necessary to study the design and application of wisdom classroom teaching mode.

## 2. The Connotation and Characteristics of Wisdom Classroom

Intelligent classroom refers to the classroom form through the rational application of big data, the Internet and other information technology, in order to promote the intelligent development of the classroom and enhance the interaction between teachers and students, so as to better complete the teaching objectives. In this classroom teaching form, we can rely on advanced technical means to collect, analyze and compare the teaching activities and students' classroom learning behavior, so as to be more conducive to the improvement. The main characteristics and outstanding advantages of wisdom classroom are as follows.

First, the wisdom classroom can provide teaching staff with a wealth of dynamic data. Through the effective use of information technology, the data information about learning behavior and teaching process is collected, and then the corresponding results are obtained through data analysis. Teachers can make targeted improvements to the teaching system according to the results of data analysis.

Second, the application of wisdom classroom is conducive to the realization of personalized teaching. Through the analysis of students' learning information data, teachers can master the learning situation and knowledge of different students more accurately, and on this basis, the teaching arrangement can be adjusted reasonably. At the same time, students can adjust their learning methods through learning feedback.

Third, the application of wisdom classroom teaching can promote the good interaction between teachers and students. Under the intelligent classroom mode, all kinds of intelligent terminals and information platforms have been applied in practice, which promotes the efficient communication and communication between teachers and students, can arouse the students' enthusiasm in the classroom in an all-round way, and is beneficial to improve the teaching efficiency.

In the fourth aspect, the intelligent class has the form of abundant learning resources, and the teacher can effectively utilize different resource types such as pictures, videos, web pages and documents, and is fully combined with the teaching requirement, and is more favorable for

promoting the students to master the basic knowledge and the learning method in a short time, So as to realize high-efficiency teaching.

### **3. Design of Wisdom Classroom Teaching Mode under Big Data's Environment**

In the environment of big data, the intelligent classroom teaching process needs to rely on remote control, receiver, smart phone and other mobile terminals. The design of intelligent classroom teaching mode should make reasonable arrangements for the teaching content according to the specific characteristics of the three stages before class, during class and after class [1].

#### **3.1 Apply Big Data to Prepare for Class**

Under the intelligent classroom teaching mode, it is necessary to make preparations in advance before class, prepare lessons according to the requirements of teaching plan, and select the key points and difficulties of teaching, the key contents that need to be reviewed and the important conceptual knowledge to be made into autonomous learning materials, which can be used to make micro-lessons, guide plans and preview test questions, etc. After the completion of the production, the learning tasks and learning resources can be released on the relevant platforms, in which WeChat, QQ and email can be used to receive and learn from students through smartphones or computers. In the process of pre-class learning, students can adjust the learning process according to their own actual situation within the prescribed time. At the same time, students can adjust the learning process according to their own actual situation. Ensure that it is completed within a certain period of time. Teachers can use the network platform to view the data about the length of video viewing, the completion of exercises and the correct rate of students, and analyze the individual situation of students and the overall situation of the class, and timely understand the main problems existing in students' autonomous learning. On this basis, according to the actual needs of students, the teaching objectives are reasonably formulated, the teaching design scheme is optimized, and the effective classroom teaching is promoted.

#### **3.2 Application of Big Data to Improve Classroom Teaching Process**

In the process of classroom teaching, the key content of applying big data to carry out wisdom classroom teaching is to realize the good interaction between teachers and students. Through various information technology platforms, teachers and students can carry out efficient interaction and communication. At the same time, the learning situation of middle school students in class is analyzed in time, and the teaching arrangement is adjusted reasonably. The specific application can be divided into the following steps.

The first step is to set up the teaching situation and guide the students to think about the problem. Specific can use to organize group discussion activities, using projectors and other equipment to display pictures, text materials and video materials for students. For example, in the group discussion, you can sort out the relevant issues in the preview and report the key issues to the teacher. Through the way of problem guidance, it plays a role in mobilizing students' thinking.

The second step is to arrange the learning task and complete the in-depth understanding of knowledge. In this process, teachers use remote control, projector and other devices, students use smart phones and student remote control and other devices to interact. The contents of learning tasks mainly include the use of communication and interaction to solve problems, summarize the problems, teachers use the teaching terminal to select specific students to answer questions, and so on. By using the immediate feedback function of interactive teaching system, teachers can obtain students' learning status at any time and make reasonable adjustments to the teaching process.

The third step is to make a certain degree of development to the knowledge according to the classroom teaching data and to carry out a deeper study task exchange. In which, a typical case can be displayed by using a smart teaching assistant system, and a part of the students can be selected to analyze the typical case and further enrich the content of the classroom teaching.

The fourth step is to carry out the following test and conduct the review and explanation. The teacher uses the teaching terminal to set the exercises and issue to the students, the students submit

them after completing the exercises, and then the evaluation system can make an automatic analysis of the student's answer situation, and provide feedback to the teachers so that the teachers can fully understand the students' grasp of the knowledge points. On the basis of data analysis, the teacher can review and explain the representative problems, and for the result of the review, the students can communicate their opinions with the teachers.

### **3.3 After - Class Guidance and Teaching Evaluation Using Big Data.**

After-class tutoring and teaching evaluation can supplement and consolidate the classroom teaching, and it is also a necessary link in the teaching process. In the mode of intelligent classroom teaching, it is also necessary to make a reasonable improvement in the way of after-class tutoring and teaching evaluation. After the completion of the class teaching, the teacher, on the basis of the data analysis of the student's learning situation, pushes the class homework to the students through the intelligent learning platform. After the completion of the job, the student submits it, and the teacher makes feedback in time after the completion status of the job is viewed. On the basis of the results of the analysis, the teachers can also carry out individual tutoring or group tutoring for the individual problems existing in the students, so as to improve the after-class tutoring efficiency [2]. In addition, an effective teaching evaluation system should be established, which can adopt two ways: online evaluation and offline evaluation, which are mainly aimed at students' performance in the learning platform, and offline evaluation mainly includes classroom performance, learning tasks and the completion of homework, etc.

## **4. The Practical Application of Wisdom Classroom Teaching Mode under the Environment of Big Data**

Under the environment of big data, many schools have carried on the concrete practice to the wisdom classroom teaching mode at present, the following is the application method of the wisdom classroom teaching mode in the mathematics curriculum of a primary school. The fifth unit of mathematics in primary school, the area of parallelogram, is selected as the practical case of this teaching mode.

### **4.1 Pre-Class Preparation**

Before the classroom teaching of parallelogram, the teacher analyzed the mastery of the students' existing knowledge points in advance. According to the results of the analysis, through the previous study of rectangle, square and so on, the students have preliminarily mastered some concepts of simple graphics, and initially have the consciousness of solving the practical problems of life. According to this situation, the teacher sets up the exercises and the preview and guidance plans to meet the students' actual learning needs and publishes them to the students. At the same time, the key points and difficulties of teaching are analyzed. The teaching focus of "the area of parallelogram" is the calculation formula of the area of parallelogram and its practical application. The difficulty lies in the derivation of the area formula of parallelogram. The teaching process is divided into several steps: reviewing the previous knowledge content, introducing the new content through the specific situation, group communication and cooperation, feedback, classroom summary, knowledge expansion, teachers and students to carry out evaluation.

### **4.2 Classroom Teaching**

In classroom teaching, the teaching content is introduced through the specific situation, and the multimedia is used to show the students walking around the park, including the parking space outside the park, the lawn and green belt in the park, and so on. The question of "which plane graphics are included in it" is put forward. Then the students communicate and interact, and the teachers randomly select the students to ask questions through the terminal, so as to fully arouse the enthusiasm of thinking. Then the teacher used the wisdom system to randomly group the students, pushed the task of "calculating the parallelogram lawn area through the number squares" to the students, and thought about whether the parallelogram area and the rectangular area were the same

[3]. And use paper-cut. Methods the teacher used HITA assistant function to record the video of student operation. Next, the cut pieces of paper will be spliced into rectangles. After the students completed the above operation, the teacher randomly selected three students to represent different groups by using the roll call function, and used the photo push function to draw the cutting and splicing process of the group. Then the relationship between the bottom, height and rectangular length and width of the parallel four-sided line is further discussed, and the teacher uses the feedback device to count the students' answers. Finally, the students are instructed to sum up the parallelogram area formula.

### **4.3 Consolidation and Evaluation after Class**

In the classroom teaching stage, the teacher completed the collection and analysis of the student's study data, and learned the students' overall grasp of the knowledge. After the post-school consolidation phase, the teacher completes the push of the job through the class group in the QQ. The teacher can use the group "operation" function to edit the job and send it, or to publish the specified job for individual students. After the completion of the work, the students can also submit them through the QQ group, and the teacher can make feedback and evaluation after receiving the solution of the students. And finally, the students can view the evaluation contents of the teachers, and the problems in the operation can be consolidated in time.

## **5. Conclusion**

wisdom classroom is an important development trend of classroom teaching in big data environment, which is conducive to a more comprehensive grasp of students' learning situation, and has positive significance for strengthening the interaction between teachers and students and promoting the overall development of students. In the future teaching process, we should also optimize the design of wisdom classroom teaching mode from the three stages of pre-class, in-class and after-class according to the actual teaching needs.

## **Acknowledgement**

Research project of higher education teaching reform of Southwest Petroleum University in 2018, Research and Practice on top design of teaching facilities construction in Colleges and Universities- Take the construction of teaching facilities of Southwest Petroleum University in the next five to ten years as an example, Number: X2018JGYB088.

## **References**

- [1] Zhou, Li. (2018). The design of intelligent classroom teaching mode based on big data environment. South farm machinery, no. 17, pp. 115-116.
- [2] Jin, Xinquan., Tian, Xuesong., Yang, Xianmin., and so on. (2018). The construction of intelligent class and the analysis of class case under the support of big data. Modern Education Technology, no. 06, pp. 39-45.
- [3] Xu, Lifei. (2018). The Design and Application of the Mode of Intelligent Classroom Teaching in the Big Data Environment. Hebei: Hebei Normal University.