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Research on 5E Teaching Mode Based on BL Theory

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Abstract. The rapid development of Internet and mobile technology makes education show new characteristics, and provides an effective way for the intelligent reform of classroom teaching in Colleges and universities. Based on BL theory, this study starts from analyzing the concepts of BL theory and 5E teaching mode, explores the framework and ideas of 5E smart classroom teaching mode based on BL theory, and takes the application of Primary English classroom teaching as an example, designs a specific implementation plan of teaching activities. The research conclusion is that under the 5E smart classroom teaching mode based on BL theory, students' autonomous learning ability, scientific inquiry ability and communication and cooperation ability can be significantly improved.

Keywords. BL theory; 5E; Teaching Mode; English Class

1. Introduction

In the new era, information technology has been widely used in education. The previous traditional face-to-face teaching mode can no longer meet the needs of students in the current era of digital media, and the online learning mode also has many shortcomings. Therefore, teaching can integrate the advantages of traditional classroom learning and online learning, that is, blended learning (hereinafter referred to as BL)[1]. In recent years, blended learning has developed rapidly, and the large-scale online teaching practice during the epidemic has also brought new opportunities and challenges[2].

2. Literature review

Blended learning (BL) refers to a kind of "online" + "offline" learning, which combines online leaching with traditional leaching[3]. 5E teaching mode originated in the United States. It is an inquiry teaching mode based on constructivism theory. It mainly includes five links: engage, explore, explain, elaborate, evaluate[4]. This mode pays attention to problem exploration, and advocates students to boldly show and deeply explore their ideas. Through combing the relevant literature at home and abroad, it is found that the research on 5E and blended learning in foreign countries started earlier and more mature, while the research in China started later.

Most scholars at home and abroad combine 5E teaching mode and blended learning with individual disciplines respectively, but there are still deficiencies and problems in practice. With the in-depth study of the new teaching model by scholars, a series of practical problems have emerged. In view of this, it is very important to explore the hybrid learning model based on 5E [5].

3. Conceptual framework

With 5E as the basic framework and "online" + "offline" blended learning method as the learning method, this study constructed a framework of 5E teaching mode based on BL theory , as shown in Figure 1.
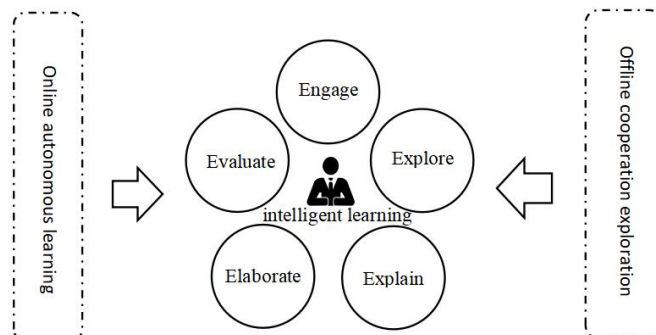

Figure 1. Framework of 5E teaching mode based on BL theory

This teaching mode organically integrates the education cloud platform and 5E inquiry teaching. Through blending learning, it makes "Introduction" more in place, "inquiry" more flexible, "explanation" more thorough, "migration" more expanded, "evaluation" more dimensional, so as to better promote the development of students' autonomous learning ability, scientific inquiry ability, communication and cooperation ability[6]. Among them, the most important is to develop students' scientific inquiry ability through alternative question inquiry.

In addition, due to the diversity of the contents of various disciplines, the actual 5E inquiry teaching should be flexibly selected and adjusted in combination with the different characteristics of the contents of various disciplines, and the teaching sequence should be reasonably arranged: if there are many and scattered inquiry points, multiple 5E cycles can be set; If there are many intermediate links in inquiry activities, the "inquiry explanation" part can be implemented repeatedly for many times.

4. Implementation framework

Based on the Conceptual framework and combined with the characteristics of college English curriculum, the Implementation framework of 5E teaching mode based on BL theory is constructed, as shown in Figure 2.
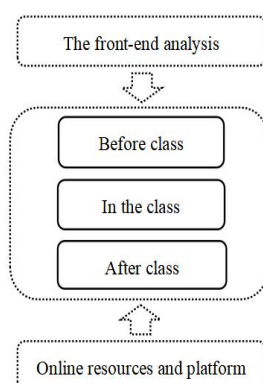

Figure 2. Implementation framework

The application scheme of this teaching model is mainly composed of three parts, including front-end analysis, teaching activities and support of online resources and platforms. Among them, this design divides teaching activities into three parts: pre-class, in-class and after-class. Support from online resources and platforms is integrated into front-end analysis and teaching activities.

5. A sample unit

This paper selects the sixth grade English as the textbook, and the fifth unit "My holiday" as the

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specific case. Specific front-end analysis and teaching activities are as follows:

5.1. Front-end Analysis

This design lists the front-end analysis of teaching as a separate part, including learner analysis, learning content analysis and learning objective analysis.

5.1.1. Learner analysis

On the one hand, the way of thinking about problems of sixth grade students is developing from a concrete way of thinking to an abstract way of thinking, and they have developed a basic psychology of inquiry and a certain ability of inquiry. On the other hand, with the development of the times, mobile phones and tablets and other devices have become an indispensable part of the families of elementary school students, and their ability to use network resources is enough to support the blended teaching in this topic.

5.1.2. Analysis of learning content

The teaching content of this lesson is mainly divided into two parts:
(1) Listening for content: listen to the two text recordings: a television commercial for popular vacation places; a conversation among three business colleagues.
(2) Speaking for communication: give an oral presentation on the problems related to the text.

5.1.3. Analysis of learning objectives

(1) Knowledge and skills: be able to read and spell relevant new words, including: mow, grass, waters, etc.
Learn how to make holiday travel plans.
Learn to describe your holiday life.
(2) Process and method: improve the ability to collect resources and solve problems in the process of interactive inquiry.
(3) Emotional attitude and values: understand the breadth and depth of Chinese and foreign culture.

5.2. Process of teaching activities

Blended learning is usually divided into three parts: pre-class, in-class and after-class[7]. Therefore, this design divides teaching activities into three parts: pre-class, in-class and after-class.

5.2.1. Pre-Class

Before class, the teacher publishes the learning objectives of this class on the bulletin board of superstar learning link, pushes the corresponding learning materials, and pushes warm-up listening exercises to better understand the cognitive level of students. In addition, the teacher posted two tourist attractions in the discussion area, Bermuda and Amazon jungle, so that students can understand the main learning content of the new class in advance and answer the corresponding questions.

5.2.2. In-Class

Part 1: Engage

After students' preview before class, the introduction stage is more in place than the traditional teaching mode. The teacher brings the most representative questions related to the curriculum objectives published by students in the pre-class discussion area to the classroom for discussion. According to the questions released by students, the following two questions are selected for discussion: (1) How to design a tourism plan for Bermuda? (2) If tourism advertisements affect your vacation decisions? Students can raise their hands to express their views, so that students can enter the learning situation of the new class.

Part 2: Explore

The teacher asks the students to open the listening audio materials in the cloud platform, guide the students to listen to the audio and explore the problems just now in combination with the problems existing in the students' discussion and speech. Students can adjust the progress of listening according

to their own rhythm. At the same time, please have a group discussion according to the grouping before class. Students can not only express their views through the interactive discussion area of the learning link platform, but also communicate with the students in the group offline. Teachers also participate in it, giving appropriate guidance and personalized comments according to the views expressed by students at any time.

Part 3: Explain

After group discussion, students will show and report in groups. That is give an oral presentation on the problems related to the text. During the report, relevant report materials can be put on the big screen through the learning communication platform.

Part 4: Elaborate

Teachers use the situational exercise creation function of the platform to establish comparative situations, generate situational "tourism strategy" exercises, and push them to students. The learning link platform applies data analysis technology to dynamically monitor the whole process of students' answer, and push explanation and analysis for students who fail to pass the situational practice.

Part 5: Evaluate

Finally, the teacher summarizes the classroom based on the intelligent learning analysis data of the platform and the students' classroom performance, and makes a summary evaluation of the students' performance. Students can record the summary and reflection of this lesson in the class notes on the platform.

5.2.3. After-class

Teachers assign homework through the learning platform: Can you write an English article about holidays? At the same time, upload the corresponding learning materials on the platform to further consolidate students' knowledge. If students have any questions about this lesson, they can post the discussion in the discussion area.

6. Conclusion

In the information age when the teaching mode tends to be intelligent, the development potential of smart classroom integrating all kinds of new technologies is immeasurable[8]. Through exploration and research, this paper shows that the 5E teaching mode Based on BL theory meets the development requirements of the intelligent era, and is conducive to breaking through the traditional single teaching mode in China and promoting the reform of Primary English classroom structure.

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