

Design and Application of Intelligent Classroom Teaching Mode under the Blended Curriculum Reform

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Abstract: With the progress of network technology, under the magical fusion of network technology and education, intelligent classroom, a new education mode and education industry, has become the focus of current education research. Under the monitoring of big data, educators can create a comprehensive monitoring network for the curriculum, which makes a three-dimensional learners' learning effects, and also greatly extends learners' learning space and time. Smart classroom is also the inevitable product of the development of science and technology and education. In this paper, the author analyzes the concept and characteristics of smart classroom in the new era, and makes a detailed distinction between smart classroom, traditional classroom and flipped classroom, so as to clarify the concept of smart classroom. Then, according to the theory of blended learning and the theory of the elements of teaching mode, a new type of Higher Vocational English smart classroom is designed. Finally, relying on the questionnaire survey of students' attitude towards the teaching mode reform, teachers could get the teaching feedback of this experiment.

Keywords: Smart classroom, Teaching reform, Teaching platform, Internet

1. Introduction

With the deepening impact of new technology on education, scholars have been increasing the research on the theory and practice of "Internet plus Education". In the journal papers collected by CNKI, the research objects are from basic education to higher education, and the research subjects involve many subjects such as English, mathematics, politics, information technology and so on. This shows that under the background of "Internet plus Education", classroom teaching is the focus of current education research.

Xia Wushi believes that the combination of traditional classroom and Internet supported online classroom can make up for each other, give full play to the advantages of new teaching mode, and solve the crisis that the lack of motivation in classroom learning of college students leads to the worrying quality of talent training. Wang Lin takes Jiamusi Technician College as experiment objectives, making the Internet plus random learning model and carrying out teaching practice and exploration. Finally, the main achievements and effects were summarized. Meng Jie explored the problem of data distortion in classroom teaching in Colleges and universities and established the "Internet +" classroom teaching management system, so as to gather effective, accurate and real-time teaching data in many directions. Li Yang and Hu Yang take the English major of Wuhan Engineering and Technology College as an example and try to explore the reform of the course group of reading, writing and translation with the Internet, hoping to explore a more scientific and efficient curriculum group system in the "Internet + classroom" diversified network curriculum group.

To sum up, the research on classroom teaching under the background of "Internet plus education" is still in its infancy, and there are more theoretical researches, but there are relatively few practical applications. In theory, most scholars tend to interpret classroom teaching as "flipped classroom" under the background of "Internet plus", focusing on the application of extracurricular Internet, but neglecting the deep combination of classroom and Internet. At present, the research on this new classroom mode is not thorough and meticulous. Therefore, the research of classroom teaching mode in the era of "Internet plus education" is very urgent and necessary.

2. Theoretical Basis

2.1 Blended Learning Theory

At the end of last century, network learning or online learning flourished, and theories supporting online learning emerged endlessly. Online learning breaks through the constraints of time and space and pushes the course to the learners in the form of live or video through the network and electronic devices. Fundamentally speaking, blended learning not only contains the advantages of teachers' leading in traditional classroom teaching, but also covers the advantages of students' principal status in online learning. Through reading the literature about blended learning theory at home and abroad, the author finds that the definition of blended learning theory is not the same, but generally emphasizes that in order to obtain better learning effect as the goal, the elements needed to rebuild teaching, and its essence returns to the research on the way of information transmission. Blended learning, as a product of the times and technology, is widely used in learning and training. With the further improvement of technical support, it has been practiced and applied by all walks of life. The difference between blended learning and traditional teaching is that blended learning emphasizes the requirements of learning environment and learning tools, and must be supported by network and electronic devices. As a new teaching mode, blended learning theory is constantly improving and developing. Its supporting theories mainly include behaviorism learning theory, constructivism learning theory, humanism theory, cognitivism learning theory and so on. It emphasizes the role of learners. The most outstanding advantage of blended learning is that it breaks the limitation of time and space, saves the commuting time and physics teaching place, and saves the cost and time. In recent years, blended learning theory has been applied to the research of education reform in basic education and higher education, and has become a highly effective learning model. From the perspective of development trend, the application scope of blended learning will be larger and larger, involving more and more curriculum reform, and the number of beneficiaries and institutions will also increase greatly.

2.2 Teaching Mode

The teaching mode mentioned in this paper refers to the teaching mode put forward by B. Joyce and M. Weil in the United States. They are the scholars who first introduced the word "mode" into the teaching field and systematically studied it. In teaching mode, Joyce and Weill think that "teaching mode is a kind of paradigm or plan that constitutes curriculum and homework, selects teaching materials and prompts teachers' activities." The actual teaching mode is not a plan, because the plan is often too specific, too operational, thus losing the theoretical color. The word "mode" is introduced into the teaching theory to explain the basic structure or framework of various types of teaching activities established under the guidance of certain teaching ideas or teaching theories, and to show the procedural strategy system of the teaching process. Teaching mode is also a learning mode, which aims to provide systematic help for students in acquiring knowledge, skills, methods, values, ways of thinking and so on. At the same time, it will also transfer better learning methods to students. The application design of teaching mode is from macro level to micro level, including school planning, curriculum design, unit design and one class design. In China, scholars led by Professor He Kekang believe that teaching mode is a stable theoretical framework and activity procedure of teaching structure formed under the guidance of certain teaching ideas and theories to achieve teaching objectives and teaching contents. A complete teaching model generally includes the following five factors: theoretical basis, realization conditions, teaching objectives, teaching process and teaching evaluation. In the field of education, the meaning of teaching mode mainly includes two kinds. First, teaching mode refers to a specific teaching method. Second, the teaching mode refers to a specific teaching procedure, which is to create a stable teaching activity procedure under the specific teaching ideas and specific teaching environment. The teaching mode has also gone through its unique evolution history, from the traditional face-to-face teaching to the face-to-face teaching supported by Web1.0 technology, the face-to-face teaching supported by Web2.0 + digital tools, the online teaching supported by Web2.0 technology, and the blended teaching. At present, with the support of Web3.0 technology, the teaching mode will be reformed.

2.3 Smart Classroom, Traditional Classroom and Flipped Classroom

Scholars define the smart classroom as building the classroom into a smart teaching environment with the help of the new generation of information technology, realizing the full range of intelligence, visualization and efficiency of the curriculum, including pre-class, in-class and after-class teaching, and

finally realizing the goal of students' wisdom generation. Based on the information technology platform, smart classroom comprehensively collects the dynamic data of students' learning, presents the whole process and effect of students' learning in a digital way, so that teachers can grasp the learning situation with accurate data and promote teaching reasonably. In the smart classroom, teachers can timely grasp the teaching feedback and learning evaluation, running through the preview before class, real-time detection and feedback in class, homework evaluation after class, and realize real-time and dynamic diagnosis, analysis and evaluation information feedback. The communication between teachers and students is more smooth and flexible, which ensures the timely communication in-class and after-class, and achieves the trace to follow, so that teachers can see the progress and shortcomings of students, and carry out targeted teaching. In smart classroom, teachers make full use of various forms of rich media resources, push learning resources to students differently to meet the personalized teaching.

Next, the author analyzes the three concepts of smart classroom, traditional classroom and flipped classroom from three aspects: teaching concept, learning mode and teacher-student relationship, and compares the differences between them in three dimensions.

The traditional classroom teaching thought still stays in "taking the teacher as the center, taking the teaching material as the center, taking the classroom as the center", and the teaching activities are all spread mainly in the classroom with the book knowledge as the main. Flipped classroom is a breakthrough to traditional classroom, all "student centered", but the training of thinking ability of students is insufficient. Smart classroom also emphasizes that students are the master of learning, and also pays attention to the cultivation of students' thinking ability and innovation ability, aiming at promoting the overall development of students.

The types of teacher-student relationship mainly include autocratic type, democratic type and ideal type. Authoritarian teacher-student relationship emphasizes the authority of teachers, the center of teachers is on teaching rather than students, teachers dominate everything, teacher-student interaction is rare. It is difficult to form a good interpersonal relationship. The majority of teachers and students belong to the traditional classroom relationship. In the democratic relationship between teachers and students, teachers pay attention to the cultivation of students' dominant position, the interaction between teachers and students is smooth, teachers are good at adjusting teaching methods and teaching strategies according to the classroom teaching effect, students' interest in learning is high, and the relationship between teachers and students is harmonious. The teacher-student relationship in flipped classroom is mostly democratic. The ideal relationship between teachers and students includes respecting teachers and loving students; democratic and equal relationship between teachers and students; mutual benefit between teaching and learning; psychological compatibility. The perfect wisdom classroom will present the ideal teacher-student relationship.

3. The Establishment and Practice of Intelligent Classroom Teaching Mode

The ultimate goal of the intelligent classroom teaching mode is to promote the generation of students' wisdom. The realization conditions of smart classroom teaching mode are external support conditions, including teaching tools (intelligent mobile terminal), intelligent technology (Intelligent Learning Technology), teaching environment (intelligent learning environment) and teaching resources (intelligent learning resources). The intelligent classroom teaching activities are divided into three sections, namely, before-class, in-class and after-class. Finally, intelligent teaching evaluation, including online evaluation and offline evaluation: online evaluation runs through three links, namely, before-class, in-class and after-class. The evaluation data is also the learning data that traditional classroom can not collect. Offline evaluation is mainly the learning of middle school students, including classroom status, learning results and self-evaluation.

College English is a compulsory course in Shandong Vocational College of Industry. This study takes the 2019 computer professional students of Shandong Vocational College of Industry as the research object. Limited by the experimental conditions, the research is divided into two parts in the course. The course has a total of 18 weeks: the first nine weeks of traditional lecture teaching, and the last nine weeks of smart classroom teaching. This paper makes a comparative study of the early and late stages of the course. At the end of the first nine weeks of teaching, the questionnaire on the learning situation in the early stage of the course is issued to compare with the situation of the course after the implementation of smart classroom teaching in the later stage. There are 240 students in this major,. 240 questionnaires were sent out and all were returned, with the recovery rate of 100%. 240 valid questionnaires were issued, with the effective rate of 100%. It is found that students spend less

time after class in College English courses, and there is a serious lack of review and preview. Teachers mainly rely on PPT in teaching, teachers are the center of the classroom, students learn passively, learning enthusiasm is low, and it is difficult to train their comprehensive English skills.

In the late learning of the course, that is, under the intelligent classroom teaching mode, students' spare time is used to fully preview, and the key and difficult points of teaching are adjusted according to the preview situation. In class, learning activities focus on the feedback of students' preview in group discussion, and the unsolved problems are explained and demonstrated by teachers. After class, students can check their learning log and all kinds of resources shared by teachers at any time. Teachers can also make test questions to be distributed to students in real time, and set deadline and limited time to answer. At the end of the smart classroom teaching mode, the Wenjuanxing questionnaire survey was used to collect data and analyze.

The results show that most students are not disliked or disliked to use the new teaching mode, and are in a neutral state, but they can adapt to the model generally. Students are very familiar with the pre-curricular materials, and think it is moderate and helpful to study. For the platform, students generally believe that the operation is simple, the interface is simple and not fancy, and the function is strong, and it is easy to preview and review. In the process of learning, students think that the number of tasks arranged is appropriate, and can actively complete the learning tasks within the scope of completion. In the new teaching mode, the learning interest of the above students has been improved. In the process of learning, they will actively find videos pushed by teachers before class on the platform when they encounter problems. Through the intelligent teaching mode, the students' learning has changed significantly, their self-awareness is clearer and their enthusiasm for learning is improved. Students are satisfied with this new teaching mode. Students think Yuketang plays a role in urging and making learning more active. Compared with traditional classroom teaching, the advantages of new learning based on network platform are obvious. It makes full use of smart phones to extend the classroom to extracurricular. Students think that the learning resources based on rain class are easy to obtain, and the knowledge or operation that they don't understand in class can be viewed back at any time.

4. Conclusion

Through the investigation and analysis of the application of the mode, it is found that most students can quickly adapt to this learning mode. They think that learning through mobile phones is convenient and fast, which can supervise their own learning, improve their autonomous learning ability, and reduce the learning burden in the classroom. Students think that the Yuketang platform is easy to operate and will not affect their learning. The learning effect of students has been significantly improved, and the intelligent classroom teaching mode has improved the learning effect of students to a certain extent. Smart classroom teaching mode based on mobile devices aims to improve students' learning effect. The design of teaching activities before, during and after class is learner centered, which increases the interaction and communication between teachers and students, and promotes students' knowledge internalization and ability improvement. Smart classroom teaching makes use of the resources and tools provided by the information platform to facilitate students to better carry out learning activities. Finally, this kind of intelligent learning method can not only strengthen students' understanding and grasp of theoretical knowledge, but also supervise students' learning and improve their autonomous learning ability.

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