Research on the Construction of Smart Classroom in Vocational Colleges

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Abstract. The "Thirteenth Five-Year Plan for National Education Development" encourages teachers to use information technology to improve teaching levels, innovate teaching models, use flipped classrooms, mixed teaching and other methods to make good use of high-quality digital resources, and form an organic combination of online and offline learning. Promote the learning revolution through teaching reform, actively promote small class teaching, mixed teaching, and flipped classrooms, vigorously promote the construction of smart classrooms, and build a teaching model that combines online and offline.

Keywords: Network, ubiquitous learning, smart classroom.

1. Introduction
Educational and teaching reforms are in full swing in major universities. Based on this concept, we advocate a structural model of organization, implementation and evaluation of education centered on expected learning output, emphasizing that education is a process of ability training, ability training and ability innovation, student-centered and outcome-oriented, Guide the continuous improvement of talent training programs. The current teaching methods in colleges and universities have also undergone a fundamental change, from the classroom "teacher-centered" to the "up-and-down linkage", and centralized teaching to small-class teaching. The existing teaching environment of the school cannot satisfy the change of teaching philosophy from “teaching-centered” to “learning-centered”. Teachers speak on the podium, while students passively accept it. The teacher speaks hard, and the students listen boringly. The teaching effect is not good, and the teaching quality is difficult to evaluate. The school strives to build an interactive, intelligent, open, and diversified intelligent teaching environment to realize the two-way promotion of teaching space and educational concepts, models and teaching methods.

2. The advantages of smart teachers
The smart classroom is a teaching environment platform that realizes the interactive discussion teaching mode between teachers and students, and explores teachers' teaching methods, teaching concepts, teaching method reforms and information technology. The smart classrooms currently built in our school have relatively advanced functions. Each classroom is equipped with a recording and broadcasting system, which can record and broadcast classroom teaching in real time according to the
needs of teachers. It can be used for students' after-class review and teachers' teaching situation review; each classroom equipped with a wireless access system for activity class chairs and display screens in any combination, it can realize interactive communication between study groups; some classrooms are equipped with nano blackboards, which can realize touch interaction, multimedia teaching and chalk writing, which can transform traditional teaching The blackboard and the perceivable interactive blackboard are seamlessly connected; each classroom is equipped with a swiping card access system, a centralized control system for classroom equipment, and is connected with the educational administration system, which can identify the permissions of teachers and students in class, collect real-time teaching data, and comprehensively improve teaching services and Teaching management level.

3. Classroom layout
   A. Town seat form
      Rotatable and movable tables and chairs can be changed and combined at any time according to classroom needs, and the form and function of the space can be adjusted to meet the needs of lecture and interactive teaching.
      B. Small table and chair mode
The desk and chair is a lightweight 360° rotating design. The desk and chair combination mode can be changed at will according to the needs of the course, which is convenient for communication with students from all directions around, so that teachers and students can participate in different types of guidance and learning.

C. Round table discussion format

The classroom layout in the form of round table discussions is suitable for team-based curriculum projects; it is convenient for teachers to interact with students in the classroom, and stimulate students to actively participate in topic discussions.

D. U-shaped arrangement

The ingenious U-shaped classroom design is suitable for students’ interaction and participation in activities. Teachers can stand in the U-shaped interior to give lectures and lectures in multiple directions, reducing the problem of unclear hearing for students in the back of the classroom, and allowing more interaction and eye contact with students.

4. Normal recording classroom

The normal recording classroom supports a variety of applications and teaching modes, completes automatic tracking and collection of high-definition video and audio of teachers and students, intercepting teachers' computer screens, intelligent guidance and courseware recording of teachers, students, and computer screens, achieving resource archiving and online tour, Classroom teaching quality monitoring and analysis functions, to provide teaching quality management and decision support for teaching units at all levels of the school.
5. Summary
As a new form of education and the carrier of modern teaching methods, the smart learning environment brings new opportunities to school education and teaching, and realizes the sharing of teaching resources. Based on the Internet and the Internet of Things technology, a new modern smart classroom system that integrates smart teaching, staff attendance, environmental smart adjustment, video monitoring and remote control, has matured in technology. Through the change of software and hardware configuration, the innovation of teaching concepts and the reform of teachers' teaching methods will be promoted, and the barriers between teaching and learning will be broken. The development of information technology has promoted the reform of teaching methods. It is an inevitable trend to reconstruct the classroom environment and create a new type of classroom environment suitable for student learning and teacher teaching.

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