

# Research on the Construction of intelligent Teaching Practice Model in Colleges and Universities

Hongyu Gao

College of Education, Philippine Women's University, Philippines Manila 0900

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**Abstract:** With the reform of teaching in colleges and universities, the establishment of intelligent teaching environment and the innovation of teaching mode and teaching means have become the inevitable development trend of improving teaching quality in colleges and universities. This paper mainly introduces the relevant concepts of the current efficient intelligent teaching and puts forward the practical structure of the construction of intelligent classroom in colleges and universities. Then, this paper further analyzes the current situation of intelligent teaching practice in colleges and universities, and explores the specific setting and future development direction of intelligent teaching in colleges and universities.

**Keywords:** Colleges and universities; Intelligent teaching; Practice

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## 1. Introduction

The development of information technology has brought changes to the industry. The emergence of big data, cloud computing, virtual reality and other technologies has promoted the transformation of traditional university teaching mode. It is an inevitable choice for the development of colleges and universities to adapt to the progress of The Times and innovate teaching mode, create intelligent teaching environment and improve teaching quality. In order to further promote the construction of intelligent teaching environment in universities, Chinese education departments have promulgated a number of teaching policies and emphasized the importance of intelligent education reform. With the progress of economy and the development of information technology, further promote the combination of teaching and information technology in colleges and universities, and improve the service quality of talents in colleges and universities.

## 2. Overview of Intelligent Teaching

In real life, the use of wisdom can effectively solve existing problems, quickly achieve the pursuit of goals. Intelligent teaching means that teachers can make full use of teaching resources and effectively improve teaching quality in the process of teaching. The process of constructing intelligent teaching in colleges and universities is essentially the process of making full use of existing teaching resources. With the introduction of relevant national education policies, the pace of teaching reform in colleges and universities is getting faster and faster, and the construction of intelligent teaching in colleges and universities has become an important trend in the current development of college education <sup>[1]</sup>. intelligent teaching equipment should be equipped scientifically, and a scientific teacher-student interaction platform should be established to build an efficient and intelligent teaching environment with the advantage of big data.

In the specific practice of intelligent teaching, the intelligent teaching environment built by colleges and universities is mainly divided into basic layer, service layer, application layer and terminal layer. The basic layer is mainly for hardware decoration facilities and equipment; the service layer is for constructing intelligent teaching technology; the application layer is mainly for intelligent teaching application mode formed through the combination of equipment and technology; the terminal layer refers to the application terminal of intelligent teaching between teachers and students. With the advancement of intelligent teaching in colleges and universities, many schools have made progress in intelligent teaching, but there are still some deficiencies. The construction or transformation of teaching environment is not comprehensive, only pay attention to the construction of intelligent facilities and equipment; The compatibility of related systems or applications is poor, and teachers need to switch software repeatedly in class, which seriously affects the teaching efficiency; As a result, the process of wisdom is slow and the teaching effect of wisdom in colleges and universities cannot reach the expected level.

### **3. Construction of Intelligent Teaching Practice Model in Colleges and Universities**

#### **3.1 Smart Classroom**

Under the guidance of modern education ideas, combined with the latest information technology, through the information layout of the classroom facilities and equipment, we can build a smart classroom. A scientific intelligent teacher should integrate teaching methods such as display, management, live broadcasting, recording and broadcasting, and interaction, and collect, record and analyze relevant information and situations in teaching. Intelligent teachers can make full use of modern information technology to realize intelligent teaching. Different subjects and majors have different scenarios for smart classrooms. In actual teaching, In addition, there are lecture hall type, academic exchange type, micro class production type, PBL type and other smart classrooms with different functions. Teachers can further improve their teaching quality by giving full play to the advantages of smart classroom in teaching.

#### **3.2 Wisdom Laboratory**

Underpinning the construction of the smart lab is the Internet of Things technology. Through the Internet of Things, laboratory intelligence, teachers can only group students and repeatedly demonstrate the same experiment. The intelligent teaching model can clearly record the experiment process by installing equipment on the lectern or laboratory table, and can also be studied retrospectively. In addition, the experiment process of students can be recorded and played on the large screen, so that teachers can comment on the experiment process of students and deepen students' understanding of knowledge. Intelligent laboratory has advanced laboratory management equipment, such as laboratory private network, laboratory access control, laboratory equipment control system and so on, can effectively realize the intelligent management of the laboratory. In addition, the intelligent laboratory is equipped with integrated management equipment, the establishment of monitoring, temperature, temperature intelligent sensors, can effectively collect data in the process of the test, further improve the intelligent laboratory.

#### **3.3 Intelligent Teaching Cloud Platform**

Intelligent teaching cloud platform is a key task for universities to construct intelligent teaching. Through intelligent teaching cloud platform, data or resources in intelligent teaching construction scenes such as intelligent classroom and intelligent laboratory can be scientifically integrated to further accelerate the development of intelligent teaching in universities<sup>[3]</sup>. The main components of intelligent teaching cloud platform include curriculum center, cloud classroom platform, cloud recording and broadcasting resource platform, evaluation center and management service center. Each component has its unique function, which effectively promotes the development process of intelligent teaching in colleges and universities.

### **4. Innovative Ways to Construct Intelligent Teaching in Colleges and Universities**

#### **4.1 Scientific Application of Virtual Technology**

Virtual technologies include virtual reality, augmented reality, mixed reality and so on. Through the development and application of virtual technology, on the basis of traditional image, sound, animation and other multimedia technologies, add simulation scenes, creating an immersive learning atmosphere for students. The application of virtual technology to intelligent teaching scenes in colleges and universities can improve students' sense of integration into the classroom, and students can improve their understanding of knowledge through repeated representation of relevant scenes. For example, in the teaching of medical surgery, students cannot directly participate in the operation site due to the restrictions of relevant conditions. In order to allow students to observe the whole process of the operation more truly, the school can use virtual simulation technology to simulate the scene of the operation and improve students' understanding of knowledge.

#### **4.2 Establish the Curriculum Teaching Resource Library**

With the further development of national teaching reform, colleges and universities must adjust and reform teaching methods to cultivate talents who meet the needs of social development. The intelligent teaching of colleges and universities must be constructed according to the relevant ideas. Schools can record high-quality teaching courses of various disciplines, arrange experts to review the courses, and finally include them in the intelligent teaching cloud platform to achieve effective accumulation of teaching resources and provide rich teaching resources for cultivating comprehensive talents. As for students, they can combine their own actual situation and development direction in the learning process, make full use of curriculum teaching resource base, choose majors reasonably, improve their comprehensive knowledge system, further improve their scientific spirit and innovation ability, and promote the development of society.

### 4.3 Make Full Use of Big Data

To promote the intelligent construction of college teaching, big data should be fully integrated into the intelligent system. In the intelligent teaching of colleges and universities, big data can collect relevant data and materials generated in the teaching process, which can be used as an important basis for teaching evaluation and improve the scientificity and fairness of teaching evaluation. In addition, teachers can reflect on their own teaching mode, further adjust teaching methods and improve teaching quality through accurate teaching evaluation. The integration of big data technology into intelligent teaching system can firstly provide teaching supervision managers with the process of observing and supervising teachers' teaching and students' learning, and provide managers with decision-making basis through the results of intelligent analysis of big data. Secondly, big data can also analyze students' learning habits and learning basis, accurately analyze students' learning situation according to their learning situation on the platform, help students effectively find their weak points in learning and improve their learning ability.

## 5. Conclusion

Building efficient and intelligent teaching is an important measure for colleges and universities to innovate talent training mode and improve the quality of talent training under the background of teaching reform. It is also an important part of promoting the development of college teaching. At present, the intelligent teaching mode in colleges and universities has begun to take shape, which is of great significance to improve teaching efficiency. With the continuous deepening of intelligent teaching, in order to further construct intelligent teaching model and promote the in-depth practice of intelligent teaching in colleges and universities, colleges and universities must take effective measures to change teachers' teaching concepts, strengthen the training of teachers' teaching skills, make full use of big data, artificial intelligence, virtual reality and other technologies to further promote the construction of intelligent practice model in colleges and universities.

## References

- [1] Yuanbo Zhong, Ming Li, Xin Li, et al. Construction and Practice Research of Flipped Teaching Model based on Wisdom Classroom [J]. *Journal of Corps Education College*, 2022,32(5):70-76.
- [2] Lengfei Lu, Weifang Tang. Research and Practice on the Construction of intelligent Teaching Environment in Colleges and Universities [J]. *China Informatization*, 2023(2):69-72.
- [3] Bingxin Liu, Tianjin Zhang, Qifeng Li. Exploration and Practice of Intelligent Teaching Service System in Local Universities [J]. *Higher Education Forum*, 2020(10):60-63.

#### **About the author:**

Hongyu Gao(1981.03-), female, Han, born in Tai'an, Shandong Province. undergraduate course, now working at the Philippine Women's University School of Education, professor.