

# Application of Artificial Intelligence Technology in University Teaching System

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**ABSTRACT.** *With the rapid development of information technology, we have come to the era of artificial intelligence. The advent of a new era has also brought new opportunities for the development of education in China. Under the current background of education and artificial intelligence, Hakka teachers are faced with important challenges. According to the relevant content, this paper studies how to use intelligent technology in college teaching activities.*

**KEYWORDS:** *Artificial intelligence technology, University teaching, Human-computer co teaching, Collaboration, Personalization*

## 1. Introduction

Throughout the history of human development, it can be said that the current artificial intelligence has become a very revolutionary technology at this stage, and the development of this stage has been called the fourth industrial revolution. With the rapid development of science and technology, artificial intelligence has begun to be widely used, and people are exposed to related technologies all the time. With the rapid development of the times, people have realized a new era of living and working together with artificial intelligence, which is what we call the artificial intelligence era. Under the actual background, China's education is also facing new opportunities for reform and development. In view of this aspect, the State Council and the Ministry of education have put forward a variety of relevant educational reform literature, trying to explore and try the integration of artificial intelligence and education. In this paper, combined with the relevant content, the integration of college education and artificial intelligence is studied.

## 2. The Significance of the Application of Artificial Intelligence Technology in Teaching

### 2.1 Accelerate Teaching Development

Combined with practice, artificial intelligence technology has made outstanding contributions to the development of administrative procedures of educators and

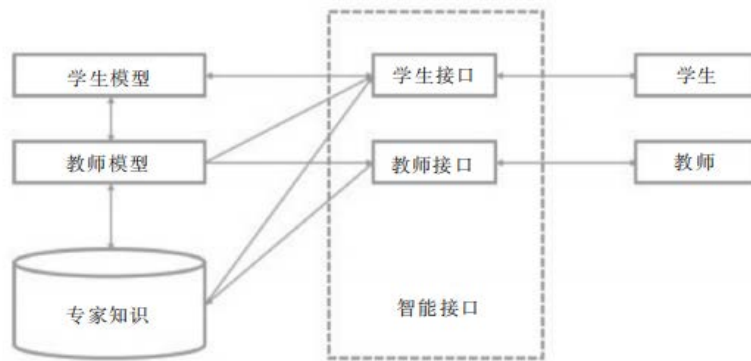
educational institutions. Education is very boring and cumbersome, whether it is the students' examination paper marking, or checking the students' Recitation situation, it will cost teachers a lot of valuable time. With the popularity of artificial intelligence, teachers can use artificial intelligence technology to simplify the process, so as to reduce their own work pressure. The whole teaching process is deeply optimized. Nowadays, many science and technology enterprises are trying to integrate artificial intelligence into the field of education, contributing a lot to the integration of education and artificial intelligence. In addition, artificial intelligence also plays a very important role in enrollment. For example, when enrolling students, parents and students can understand the actual situation of the school through artificial intelligence. In addition, they can also use this technology to submit materials, and can get quick feedback at the same time. This kind of operation not only reduces the burden of Student Enrollment Office, but also improves the efficiency of promotion. Nowadays, many such intelligent teaching systems have been put into use, as shown in Table 1.

*Table 1 Common Intelligent Teaching System in the Market*

Name	Effect
Geek big data	Intelligent evaluation and analysis, comprehensive quality teaching resources
Rain class	Analyze the education data after class to remind students to complete the task
Juku correcting website	Automatically mark students' compositions and give suggestions for revision
Wing class network	Train students in listening, speaking, reading and writing

## ***2.2 Promote Personalized Learning***

In the process of teaching, teachers usually occupy the main position of teaching, which leads to the usual teaching has been in the state of indoctrination in which teachers tell students to listen. Students become passive in the learning process, which leads to the lack of pursuing goals and autonomous learning ability, which greatly hinders the development of personality teaching. Secondly, teachers need to change the previous teaching mode and attach importance to students' initiative and initiative. If students are kept in such a learning state according to the traditional teaching methods, they are bound to bring more adverse effects on students' learning. The development of artificial intelligence has changed this state. That shows that artificial intelligence can formulate corresponding reasonable teaching according to different situations of students, while big data can model students according to their characteristics, so as to provide personalized teaching approaches for them, as shown in Figure 1.



*Fig.1 Structure of Intelligent Teaching System*

### 3. Development of Artificial Intelligence Technology

Artificial intelligence mainly includes three basic elements: cognition, perception and computation. Throughout the development history of artificial intelligence, it can be divided into three parts. The first period is the initial period. Since the 1950s, the era of computational intelligence has begun to come. The second period is the 1980s, which is called the era of perceptual intelligence, and the third period is the era of cognitive intelligence since the 21st century. The artificial intelligence technology in different periods has a deeper development and evolution compared with the previous period, but the most basic content is computational intelligence, and the perceptual intelligence and cognitive intelligence are generated on the basis of the later development of computational intelligence.

The so-called computational intelligence refers to a kind of algorithm which is inspired by human intelligence and finally designed. This technology can quickly interpret and process the semi-structured data, and analyze the complex structure contained in it. It is mainly used to solve some complex calculation problems encountered in scientific research and engineering practice. Nowadays, the computational intelligence of computer has developed very fast and mature, and some large-scale integrated circuits have emerged as the times require.

The so-called perceptual intelligence, in fact, refers to that the technology can realize the discrimination and collection of information existing in the real world, which mainly includes the recognition of speech and the recognition of opponents. For example, some of our more common speech recognition systems, such as Baidu's image recognition technology, etc., these technologies have gradually matured with the development of the times.

Finally, cognitive intelligence. Different from perceptual intelligence, cognitive intelligence is developed on the basis of perceptual intelligence. Cognitive intelligence, with the ability of deep learning, can also analyze the meaning of voice

and image, and feel the sender's emotion and habits according to the signal, and make the corresponding judgment. As far as the current situation is concerned, we are at the initial stage of exploring intelligent technology.

#### **4. Application of Artificial Intelligence Technology in Education**

##### ***4.1 Intelligent Recognition Technology***

In the intelligent recognition technology, speech recognition technology refers to that the voice content can be converted into language through the corresponding equipment, which can not only help teachers and related learners to improve and teaching platform. Interaction can also be used to automatically evaluate some language subjects, which can avoid the repeated work of teachers and reduce the subjective deviation of teachers, which has a great role in promoting the evaluation of science teaching.

The so-called image recognition refers to that in the teaching process, teachers can use the corresponding technology to print the text. This technology not only reduces the workload of teachers' writing, but also improves the recognition degree of the text. It can preliminarily and automatically identify students' homework and examination papers. This technology is more used in examination and attendance, and face recognition technology can also distinguish scholars. In general, the technology can improve the teaching efficiency and work efficiency of teachers.

In addition to the above contents, the micro expression and eye movement track of scholars can also be identified by intelligent technology, and the learning state and psychological situation of learners can be analyzed. For example, when a student is learning on a platform, when he / she reaches a certain place, he / she often frowns and scratches his / her ears / cheeks. Then the relevant intelligent recognition will reflect that he / she has encountered obstacles in learning.

##### ***4.2 Learning Analysis Technology***

Based on big data, the content of learning analysis technology is studied from the following three aspects: first, relevant technologies can record and analyze learners' learning behavior and corresponding data. According to the state of learners, help students to analyze the learning rules and corresponding characteristics of learners, so as to tell teachers what kind of personalized teaching method to teach students. At the same time, let students know the frequency and law of their own learning, find out the disadvantages of their own learning, and correct them;

Second, the technology can also realize the dynamic evaluation of learners' learning state, and make learners pay attention to the learning performance and status of the stage for data visualization, so that students and teachers can intuitively

observe the learning state of learners themselves. Teachers can adjust teaching content according to the actual situation of learners, and learners themselves can also According to the situation reflected, arrange their own learning content and adjust their learning state;

Third, the technology can also push the learning content according to the needs of students, which is the most common and basic work content of network teaching platform in the era of artificial intelligence.

#### **4.3 Virtual Reality Technology**

Among many artificial intelligence technologies, virtual reality technology is a kind of simulation system that can realize the experience of virtual world. The three technologies can use computer to build a certain simulation environment, and let users immerse in the environment at that time. The virtual reality world constructed by this kind of virtual technology can provide a variety of rich physical information, and its content can trigger human hearing, touch, smell and other aspects, and people seem to be in the scene. This advanced artificial intelligence technology can better let teachers help students feel the corresponding knowledge content in the teaching process. In addition, this kind of teaching method can not only enable students to integrate into the learning environment faster, but also stimulate students' learning initiative. For example, when explaining geography knowledge to students, teachers can use this technology to show students the real three-dimensional space state, including the relationship model between the universe's stars, the trajectory of each planet, and so on. Students can feel the movement of the stars intuitively, so as to deepen their memory of knowledge points, so as to help students improve their learning efficiency.

#### **5. Conclusion**

With the rapid development of science and technology, we have come to a new era of artificial intelligence. In this era, all walks of life have been impacted by new technology, and education industry is no exception. In order to better improve the education, teachers need to face a new working environment, teaching mode and teaching methods to keep pace with the times, better use of the Internet and artificial intelligence, to achieve personalized and diversified teaching. In addition, if we should also pay attention to the development of students' thinking and core ability training, so as to further promote students' self-improvement.

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