On the Improving of Instruction Transform in the Era of "AI + Education"

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Abstract: Intelligence is the new direction of social development and the main feature of information development. Under this background, the education field should keep up with the development of artificial intelligence, promote teaching reform and innovation, and build an education system to realize personalized learning and lifelong development. This paper focuses on the research of AI promoting teaching reform to inspire the application of AI teaching ideas and promote the development of education and teaching intelligence. AI + education has become an important trend of the education reform.

1. Introduction

Artificial intelligence is a new technology science used to simulate and expand the theory, method, technology and application system of human intelligence. It has become a strategic technology leading the future [1]. With the rapid development of artificial intelligence, Internet of things, cloud computing and other technologies, there are products and equipment such as face recognition, machine translation, automatic driving, intelligent medical treatment, etc. artificial intelligence is always permeated in people's lives. With the development of intelligence, a lot of physical labor will be replaced by machines, and human beings have entered an intelligent society and an intelligent era [2].

Artificial intelligence brings changes to people's life and work, but also accelerates the integration into the education industry. A new era of subversive intelligent technology reform education is coming. A new round of technology reform education will be guided by intelligent education, providing new ideas and new methods and tools for education and teaching, driving the fundamental transformation of education and teaching mode, and promoting the improvement of teaching effect [3].

2. The Influence of Artificial Intelligence on Education

In recent years, with the all-round penetration of artificial intelligence, the field of education is facing unprecedented challenges. The application of artificial intelligence in education has naturally become a hot topic for scholars all over the world. As the most authoritative international educational and Cultural Organization in the world, the United Nations Educational Scientific and Cultural Organization (UNESCO) has always attached great importance to the prospective research of education, science and culture, especially the influence and development trend of "artificial intelligence + education".

Artificial intelligence can create a better professional environment for teachers and enable them to invest more support for students with difficulties. The "two teacher model" includes teachers and virtual teaching assistants. Assistants can take over teachers' daily tasks, so that they have more time to focus on students' guidance and one-to-one communication. In some countries, teachers have begun to work with AI assistants to provide learners with the best learning assistance. In addition, computer-aided learning creates alternatives that support students' learning strategies with digital and artificial intelligence technologies. Artificial intelligence can help to draw individual learning plans and tracks, strengths and weaknesses as well as learning preferences and activities of each student [4].

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3. AI Promotes the Innovation and Development of Teaching Resources and Teaching Environment

Knowledge is created by people in a certain situation. The task of teaching knowledge construction under the background of AI is to integrate knowledge content, teachers, students and teaching environment into a unified knowledge sharing space organically through the combination design of knowledge organization, logo, navigation and system search, so as to achieve mutual interaction and integration, so as to truly realize the purpose of knowledge service and achieve the goal of knowledge service Students' knowledge acquisition, exchange, application and creation create a harmonious knowledge ecological environment [5].

3.1 The Transformation of Teaching Tools

With the advent of "Internet +" era, the rapid development of artificial intelligence. Many open and intelligent teaching platforms are springing up, such as the rain class, the sentence cool correction network, the Mycos intelligent assistant, etc. The functions of these platforms are continuously improved, including intelligent lesson preparation, precise teaching, teacher-student interaction, evaluation and analysis, after-school counseling and other functions. At present, there are various intelligent teaching platforms, including comprehensive intelligent teaching platform and intelligent teaching platform for a subject. In order to further promote the reform of teaching mode and teaching means and improve teaching quality, more and more intelligent teaching platforms are widely used to solve the problems of low rise rate and low interaction in traditional classroom.

3.2 Optimization of Teaching Resources

Traditional teaching resources can not meet the needs of learners' individual learning, and it is difficult to promote the change of teaching methods. The application of artificial intelligence in teaching will help to improve the existing shortcomings. At present, most of the evolution of learning resources is to achieve the dynamic generation and evolution of resources from the personalized editing of learners or the resource review of specialized personnel. The virtuous circle of high-quality resources, the intelligent identification and elimination of low-quality resources, and the intelligent aggregation and selection of resources with the same theme are still major research topics in the evolution of teaching resources. The goal of the intelligent evolution of teaching resources is to realize the continuous self-renewal, continuous mature development and continuous adaptation to the learning needs of learners. Therefore, we analyze the evolution of learning resources from the perspective of the evolution of resource independent intelligence. Based on the general processing flow of artificial intelligence, the semantic modeling technology of comprehensive resources, the dynamic semantic association and the control technology of aggregation and orderly evolution, we construct the evolution flow of teaching resources.

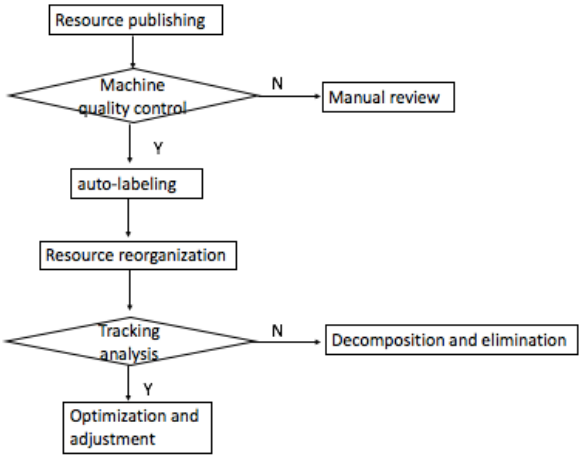

Figure 1 The evolution of learning resources

4. Artificial intelligence Promotes the Change of Teaching and Learning Methods

4.1 Intelligent Teaching

Intelligent tutoring system is one of the important applications of artificial intelligence technology in education. It is the further development of the research on CAI. The purpose of intelligent teaching system is to create a good learning environment for students, so that students can easily and quickly call all kinds of resources, accept all-round learning services, in order to achieve the success of learning. The current intelligent teaching system mainly relies on the technology of intelligent agent to construct. Through the establishment of teachers, students and teaching management subjects, we can formulate and implement corresponding teaching strategies according to the characteristics of different students, and provide personalized teaching services for students. The distributed intelligent teaching system based on the network is the latest development direction of the intelligent teaching system. It can make students who are originally separated in different areas study together in the virtual environment, make full use of the network resources, give full play to the initiative of learners, and bring about better teaching effect.

The characteristics of intelligent teaching system (ITS) include realizing the understanding of students' learning situation through students' model and realizing targeted teaching through teachers' model, which is equivalent to the inference engine of expert system. Intelligent interface is used for natural language interaction. The following figure shows the composition of its system (Teaching Expert System):

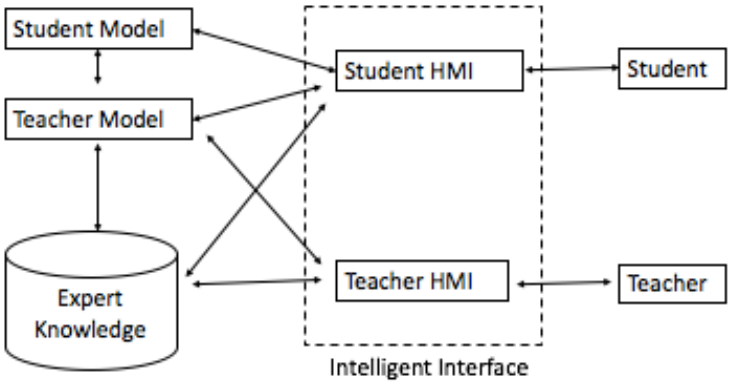

Figure 2 ITS

4.2 Intelligent Learning

The development process of learning mainly goes through three stages: traditional learning, digital learning and intelligent learning. The traditional learning mainly depends on the teaching materials. Through the learning process of memory, recitation and paper-based calculus, students learn only for the promotion of knowledge, closely inspect the degree of knowledge mastery of students, ignore the cultivation of comprehensive quality and ability, resulting in students only paying attention to exam results, forming exam oriented thinking, and restricting students' innovation initiative. Digital learning refers to the process that learners learn in a digital learning environment with the help of digital learning resources. Intelligent learning is a learner centered learning activity in the intelligent learning environment. Learners can not only get the required resources and evaluation feedback in time, but also enjoy personalized learning support services, making learning easier, more efficient and more interesting.

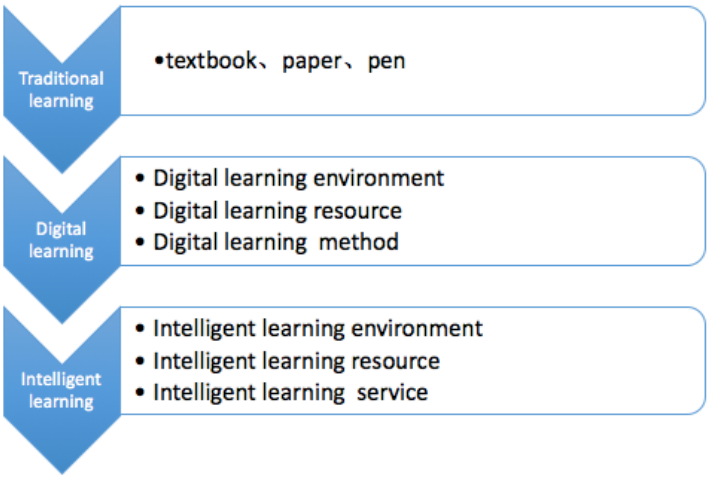

Figure 3 Three Stages for Learning

5. Conclusion

In the future, due to changes of teaching mode and learning mode, teachers' and students' cognition will change, and the direction and focus of our scientific research will also change fundamentally. The use of artificial intelligence means to analyze learning situation, promote the precise teaching of front-line teachers, so as to achieve the improvement of students' core literacy, has the role that other teaching means cannot replace. The research results of artificial intelligence are applied in the process of education to promote the working efficiency of education and produce new teaching mode [9]. In the AI era, we should make full use of the convenience brought by artificial intelligence, which is innovative to improve efficiency on teaching [10].

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