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Analysis of New Advances in the Application of Artificial Intelligence to Education

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Abstract. Artificial intelligence is an important innovation in the rapid development of modern Internet. In the 21st century, human beings have been continuously researching and exploring Internet information technology. All kinds of application forms of Internet informatization begin to appear in our life. The rapid change of technology brings a high upgrade rate of internet products. This marks the technological innovation of some traditional concepts and thinking methods. The development mode of artificial intelligence plus education is an important innovation after the deep development of artificial intelligence technology and the achievement of cross-industry application practice. Robots will be the brains of the future education process. This paper aims to clarify the development trend of the application of artificial intelligence in modern education by analyzing the innovation progress of the combination of artificial intelligence technology and contemporary education. This is of great significance for better use of the advantages of artificial intelligence to build a future-oriented high-tech education system.

1. Introduction

Since the 21st century, knowledge economy and information economy have become the mainstream of The Times. The construction of the Internet has been accelerated, and the development of new and high technologies and equipment has continued. This has spawned new Internet technologies in the web3.0 era, represented by big data, cloud computing and artificial intelligence. China has established the world's largest mobile Internet application market in 2017. In this era of rapid development and change of the Internet, mobile Internet has gradually shifted from the previous simple tools to important economic elements and political elements, and is one of the indispensable elements in People's Daily life. The horizontal development of the mobile Internet market is reflected in the important features of the integration of technology into multiple industries, the expansion of the market to the whole field and the audience to the whole society [1]. After 4G era, China's 5G communication technology has been launched in full pilot. With the overall maturity of 4G network, Internet plus industries, such as mobile e-commerce, Internet home, intelligent design and big data economy, are occupying the high-level market of mobile Internet and becoming an innovative trend leading the development of The Times. In this process, the combined development of artificial intelligence and education is particularly worthy of attention. On the one hand, it is the modernization reconstruction of traditional education system; on the other hand, it is also the expansion of the application approach of artificial intelligence, which is of certain significance for realizing the development mode of artificial intelligence with more intelligent level.

2. Overview of Artificial Intelligence

2.1 Definition of artificial intelligence

Artificial Intelligence, short for AI. It is a new technical science to study and develop theories, methods, technologies and application systems for simulating, extending and extending human intelligence [2]. As a comprehensive and interdisciplinary subject, artificial intelligence involves many scientific fields such as computer science, physiology, philosophy, psychology and mathematics. Its short-term goal is to build intelligent application of machine level, and more hope to realize artificial intelligence of human level. As an intelligent system, the essence of artificial intelligence is the activity of various complex conditioned reflex neural network circuits established through adaptive training or

learning. The core task of ai is to construct a behavior system that can imitate human brain function and be controlled by human computer system. The application of this technology expands the types of education resources and provides a more diversified learning system [3].

2.2 The relationship between artificial intelligence and education

The research of artificial intelligence is combined with specific fields, which mainly involves the content of different disciplines such as expert system, machine learning, pattern recognition, natural language understanding, automatic theorem proving, robotics, game, etc., so its combination with education is relatively comprehensive [4]. Its relationship with education is mutual, mainly reflected in the following aspects:

First, artificial intelligence contains the future trend of education development. The development of education from academic education to knowledge education is an inevitable trend. In the early days, the education system paid more attention to the transmission of specific knowledge to students and the cultivation of relevant abilities by specific knowledge [5]. With the enrichment of human knowledge system and the improvement of knowledge accumulation, a lot of knowledge that needs to be learned and mastered in the past has now become common knowledge. Such knowledge is the foundation of education development, and the inevitable trend of education development is to be more future-oriented rather than retrospection. Throughout the development of artificial intelligence, expert system and machine learning system and artificial neural network, the foundation and development direction are deconstruction as a function of intelligent entities, based on the construction of expert system knowledge base and inference system to simulate human thinking logic and existing knowledge system on the basis of the formation for specific knowledge in the field of database, decompose the kernel of memory in the brain, and by different logical vector relation build future innovation direction and development in the field of related system. This model is in line with the future value orientation of modern education, so the technological innovation supported by artificial intelligence can better integrate with human education system for development [6].

Secondly, modern education and knowledge system contribute to the continuous development of artificial intelligence[7]. It is well known that artificial intelligence is accompanied by the rapid development in recent years the emerging concepts of Internet information technology to appear, the basis of artificial intelligence development cannot leave the computer program and basic data structures, its nature is human's rational cognition, and computer science is a necessary link in the process of development of modern Internet technology intelligence. Therefore, artificial intelligence and education are complementary to each other, and they promote each other and improve technological progress.

3. New Progress of Artificial Intelligence Application in Education

3.1 The expert system is applied to education

Expert System is the most active and mature field in artificial intelligence application research. The essence of expert system is a kind of intelligent computer program system with a lot of knowledge and experience in a specific field. As a program system, it is characterized by the ability to make inferences and prejudgments based on past events and experiences, and to reveal the results of reasoning reasonably. Expert system can be used to solve various problems in the field. Due to its strong data storage and analysis and calculation ability, it can improve the fact that human brain has individual differences in forgetting and logical correlation, and form reasonable inference and discrimination based on previous facts and experience.

Expert systems consist of databases, inference engines, interpretation agencies, and knowledge acquisition agencies such as why the system presents this problem to the user, and how the computer reaches its final conclusion. Domain experts or knowledge engineers realize knowledge acquisition in expert system through specialized software tools or programming, and constantly enrich and perfect knowledge in knowledge base [8]. And the user interface. By storing the knowledge and experience of experts in the field in advance, a large database with rich contents can be formed. Users can interact with

the expert system in advance through the human-computer interaction interface. Through this interactive process, users' learning will leave out the process of selecting useful information in the redundant library data and expert experience, and directly enter the implementation pre-judgment process based on expert experience. It greatly improves the efficiency of learning. Schools can help estimate the statistical distribution of students' learning content, learning efficiency and learning habit by introducing an intelligent teaching expert system, focusing teachers' previous teaching experience and wisdom and using virtual reality or human-computer interaction. At the same time, it can also be based on the effective teaching method to avoid the mistakes that students often make in the learning process and the mistakes that students enter into. In addition, the application of expert system to assist the completion of online teaching is also the key to the development of the combination of artificial intelligence and education. Traditional network teaching relies on Internet resources, which is characterized by large quantity and uneven quality levels in resource sources. Therefore, it is difficult for students to effectively focus on the learning process, so as to improve learning efficiency. After the application of expert system, by combining expert system for the operation of the network education system, students' cognitive situation, build a unified study of cognitive model, and generate a report of individual poor student take targeted guidance strategy and intelligent fault diagnosis, help students' better formation of adaptive learning, the network teaching resources further restricted the application of the terminal, to help students achieve intensification of learning.

3.2 Application of robotics in education

Robot is the important part of artificial intelligence system, with the birth of education robot with students as the target, to help realize the innovation of education system and mode, the current has also achieved good development, formed the robot, the robot assisted teaching, the teaching robot assisted testing, robot agent transaction between teachers and students application situation [9].In today's computer in the process of vocational education, for example, education robot will vivid abstract concepts, such as by contacting object concept that exist in the daily life, such as cars, road, building, etc., to lecture on the object instantiation is the process of the existence of its true meaning, and understand the use of new keywords. This process enables students to understand the features of object-oriented programming. Through this education method, students will unconsciously demonstrate themselves to improve their comprehensive understanding of knowledge. Therefore, when the demonstration is over, students have made clear the relevant procedural concepts they learned can be found in life. This plays an important role in forming intuitive feelings and deepening their emotional cognition. Therefore, in the actual program calculation, they will focus on expressing their inner cognition and achieve the goal of knowledge fusion and application. In addition to being a teaching method and means, robots also provide strong support for education and become a carrier for cultivating learners' innovative spirit and practical ability. At the same time, it further enriches education resources and provides more abundant education means, which plays an important role in improving the timeliness and innovation of education.

3.3 Artificial neural network is applied to education

Artificial neural network is a kind of simulation of the brain's neural function, which aims at realizing some or all functions of the brain, such as the process of operation, logic, pattern recognition, fault diagnosis and so on. Based on the guidance learning algorithm and non-guidance learning algorithm, it can simulate most natural information or non-natural information response methods [10]. It is because of this characteristic that artificial neural network is especially suitable for modern education system. Its application in education system is combined with expert system, which is regarded as the key technology to improve the operation efficiency of expert system. For example, the application of artificial neural network in education resource planning can provide useful Suggestions and countermeasures in the aspects of teacher allocation, book and information resource management, and research achievements expansion, etc. For example, based on artificial neural network, psychological education is an important part of the current education system, and it occupies an increasingly higher position in the work of students. The traditional evaluation and management system are lack of pertinence, and students' psychological education is difficult to be promoted systematically. Based on artificial neural network to

build the psychological quality of the measurement system to achieve the humanization of work style, to student's investigation and evaluation from the personality characteristics, behavior patterns, psychological identity and professional aspects of the choice of direction, more comprehensive in the test system, not only on the evaluation system for the more efficiency, also is good for improving the quality of school psychological education.

4. Conclusion

We are in a time of rapid change. The rapid development of Internet application not only brings convenience to our lives, but also makes us trapped in some contradictions. The main content of this paper is the application of artificial intelligence in education. It is a problem arising from the rapid development of the Internet. The application of artificial intelligence system in today's society has become more and more popular and its impact on the modern education system is significant. It not only has a beneficial impact on education management system, but also further promotes the development of education towards modernization. This paper discusses the innovative development of the application of artificial intelligence in education from the key components of artificial intelligence technology -- expert system, robotics and artificial neural network. It clarifies the role of artificial intelligence in helping modern education system. This is of great significance for the construction of innovative, intelligent and futuristic education mode. I believe it has a promoting effect and far-reaching application value for the development of education system in China.

5. Reference

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