Research on Artificial Intelligence Education and Its Value Orientation

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Abstract: With the rise of the global education informatization wave, new media technologies led by artificial intelligence have also flourished. The relevant documents promulgated by the state have raised artificial intelligence to the level of national development strategy and also restricted the national economy. Artificial intelligence has been applied and matured in various fields, but the impact on education is very small. In the first year of artificial intelligence, domestic and foreign educational scholars put their research perspective into artificial intelligence, and the phenomenon of artificial intelligence and learning, education science and other interdisciplinary subjects emerged, with a view to the beautiful development of artificial intelligence education. In this paper, the author mainly organizes and summarizes the core concept definition, the application status of artificial intelligence education, and the value orientation of artificial intelligence education, in order to help the research on artificial intelligence education in the later stage.

1. Introduction

The emergence of artificial intelligence has led to the fourth industrial revolution in society, and the power of science and technology is affecting education at an unprecedented rate. The prophet said: To conquer the world, it is necessary to master artificial intelligence. In recent years, many scholars at home and abroad have conducted in-depth and extensive research on the application of artificial intelligence education and teaching based on different perspectives, and have obtained rich research results [1]. Research focus on the application of artificial intelligence education The domestic educational technology community has changed from theoretical research at the end of the last century to technological development research [2], and gradually began to carry out deeper research.

2. Definition of Core Concepts and Current Status of AI Education Application

2.1. Artificial intelligence education and education artificial intelligence

Educational Artificial Intelligence, the English abbreviation of EAI, is a new field formed by the intersection of artificial intelligence and education science, educational technology, and learning science [3]. The purpose is to make the understanding of teachers and students how to learn and how to be influenced by external factors is more clear and comprehensive with the support of artificial intelligence technology. How to use artificial intelligence technology flexibly The "smart" tool supports students' efficient learning and real-life experience. The essence of educational artificial intelligence is the deep integration of artificial intelligence and education, which makes teaching and learning and management more intelligent, so that future education truly has "wisdom."

Chen Kaiquan et al [4] believe that the purpose of artificial intelligence education is to cultivate students' computational thinking and programming ability, Yan Zhiming et al. [5] believe that educational artificial intelligence has two objectives: one is to use the artificial intelligence technology to uncover the "learning black box". Another aspect is the provision of adaptive smart learning tools and learning environments [6].

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2.2. Current status of artificial intelligence education at home and abroad

Artificial intelligence education applications mainly include intelligent tutor system, automated evaluation system, educational games and educational robots [7].

From the first year of artificial intelligence to the beginning of 2016, there are very few papers on artificial intelligence education. With the rise of the global education informatization wave, after 2016, artificial intelligence education has also flourished abroad.

With the continuous rise of technologies such as big data and deep learning, artificial intelligence has become more and more important to the government and experts. The application of artificial intelligence education has also been deepened, and artificial intelligence education has begun to receive attention. There are very few books on education artificial intelligence in China. In 2018, only Yuan Zhenguo, Zhu Yongxin and others published a book called Artificial Intelligence and Future Education. In the CNKI database, "Artificial Intelligence", "AI" and " The whole database retrieval was carried out for the theme of artificial intelligence education. As of May 2019, a total of 396 related articles were retrieved, and 190 articles were in accordance with the theme. The statistics on papers published in the paper are shown in Figure 1; In the education technology field, most of the topics such as "artificial intelligence" and "intelligent education" are studied, as shown in Figure 1.
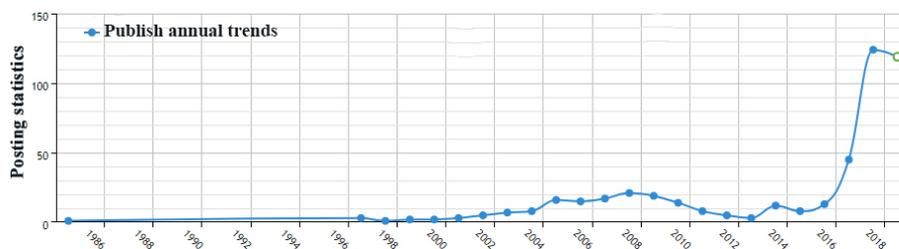

Fig.1. Papers statistics

3. The Application Value of Artificial Intelligence Education

3.1. Proposal background

From a social point of view, artificial intelligence has become the main factor of international competition. Artificial intelligence has become the focus of social and economic development, and it has brought new opportunities for social construction. The uncertainty of artificial intelligence development also provides us with some potential. New challenges.

At the national level, artificial intelligence has risen to a national strategy. The national government attaches great importance to the education of artificial intelligence and incorporates it into the national economic and social development plan, and has written government work reports twice. In January 2018, educational artificial intelligence was included in the National Natural Science Foundation.

Artificial intelligence education has received extensive attention, and primary and secondary schools have also set off a wave of artificial intelligence education. As an education that connects the future and popularizes the public, China has paid attention to artificial intelligence education from the national level [8].

3.2. Artificial intelligence education advantage

(1) Learners can access and participate in anytime, anywhere; in an adaptive learning environment, the learner's level of learning can achieve the best possible learning experience [9].

(2) Self-learning, questioning, interpersonal communication, innovative thinking [10] and the ability to plan for the future [11].

(3) It is helpful to cultivate students' creative ability, and it is possible for each student to better understand their talents, stimulate their interest in learning, and activate creativity.

(4) Avoid sea tactics, you can use machine learning and deep neural network learning algorithms

to check for leaks.

(5) The average distribution of teachers is conducive to solving the problem of imbalance and inequality in education; the rapid update of educational resources is also more portable [12].

(6) It can provide individualized learning for learners, promote and enhance learners' literacy and abilities in all aspects, and reduce teachers' repetitive work [13].

(7) Make up for the inadequacies of traditional teaching, improve and improve the quality of teaching, stimulate students' learning motivation and teachers' enthusiasm for teaching, and at the same time reduce the irritability of students in the learning process and improve students' problem solving. The comprehensive quality of efficient learning, career planning, etc., to achieve the original intention of education.

3.3. Artificial intelligence education value

Based on the data system of Frey et al [14-15], the BBC analyzed the possibility that more than 360 occupations will be replaced by artificial intelligence in the future. As a result, the probability of teachers being replaced is only 0.4%, which indicates the particularity of education. Domestic scholars believe that artificial intelligence has the greatest impact on personalized learning. Artificial intelligence education can solve many repetitive tasks of teachers, which relieves teachers' stress and burden to some extent [16]. Yu Shengquan believes that in the future, artificial intelligence teachers may assume 12 roles such as teaching assistants, analysts, and intelligent tutors and intelligent agents; Jia Jiyou believes that artificial intelligence education will have positive effects on education. Promote the role, but we still need to do a lot of work in solving educational problems [17].

In the face of choice, we always negate and criticize tradition, and it is not advisable to categorize technology and education. There are two main value orientations for artificial intelligence education applications. One is advocating technology-orientedism, paying too much attention to the application of artificial intelligence, ignoring the role of teachers. Another is to over-emphasize the role of teachers, to dilute or even ignore the profound impact of artificial intelligence on education. They believe that artificial intelligence is still only a tool for education.

(1) Teaching assistant

Automatically issue questions for different learners, and realize automatic diagnosis and feedback of learning obstacles, correcting assignments, collecting and collecting learning materials, and arranging examinations, in order to achieve online and offline teaching through the Internet.

(2) Analyst

Analyze and provide immediate feedback on learners' learning disabilities in the learning process, and provide immediate answers, such as improving children's innovative thinking ability, problem analysis and solving ability, making up for the shortcomings of traditional education, and cultivating students' ability.

(3) Learning coach

In project-based learning, collaborative classroom teachers assess the development of students' problem-solving skills, including cognitive ability, practical operation ability, and knowledge integration ability.

(4) Psychological counselor

In daily learning, collaborative teachers have an in-depth understanding of the comprehensive psychological qualities of students' knowledge and abilities, which facilitates immediate intervention.

(5) Health care doctor

Whether we are at school or at home, a healthy body is the most basic guarantee. It is vital for students to realize that a healthy lifestyle is a way to encourage students to exercise on their own and to enhance their sense of self-monitoring.

(6) Comprehensive assessment class teacher

Provide comprehensive, objective and scientific data support comprehensive assessment reports for parents and students in real time at key time points.

(7) Study guidance consultant

Provide personalized intelligent teaching that varies from person to person and from situation to situation, that is, realize personalized teaching, intelligent evaluation and management.

(8) Student's intelligent tutor

In the process of learning, student problems will also be diversified due to individual student differences. With robots, we use human-machine dialogue to understand students' learning needs and respond and feedback based on student needs.

(9) Career Planner

Help students to recognize and discover their own interests, assist in the completion of intelligent recommendation of students' growth and development, and help students' future career development. It mainly provides development suggestions on subject selection and professional choices by collecting academic achievements and specialties at different stages of the students.

(10) Mutual help companions

In this process, it mainly acts as a mutual help partner, and its main focus is to help teachers achieve learning problems and mutual help improvement among peers, such as finding problems and taking timely measures.

(11) Intelligent agent

Querying and integrating learning resources according to the individualized characteristics of students will realize a big change from finding resources to finding resources. That is to say, based on the needs of students to provide personalized learning, this transformation needs to do a lot of content, and it is obviously unrealistic to rely on people to develop all of this knowledge content.

(12) Education decision assistant

In the role of educational decision-making assistants, we prefer to use human-computer collaborative methods to achieve macro-decision and policy research in education. That is to provide analytical models and data support for different decisions, and to provide decision-making for the governance of modern education.

The launch of educational information engineering has accelerated the pace of artificial intelligence education, but we cannot overestimate the role of artificial intelligence. The emergence of the "Little Shuai 5.0" intelligent robot has created an illusion that artificial intelligence has reached the same level as human intelligence. With voice and semantic recognition, people can fully communicate with people. Artificial intelligence can't completely replace it at present. artificial intelligence. Such as: 1AlphaGO victory event, people's thinking is complex, Go is regular; 2 college entrance examination robot can make multiple-choice questions and fill in the blank questions, behind the support of the question bank; 3 Xiaoshuai 5.0 can explain the exercises Due to the huge amount of educational resources stored on the cloud platform.

4. Conclusion

In short, the traditional education model of relying on rote memorization and mechanical imitation in the future education era will be gradually eliminated, and the future will be an era in which teachers and artificial intelligence teachers coexist in harmony. Artificial intelligence education can now assist teachers in accomplishing many tasks that human brain and physical strength cannot accomplish. Teaching needs to consider many factors, and it is complex and flexible. In the near future, it will never have a substantial impact on the learning essence of learners. Artificial intelligence cannot be as proficient as a teacher and study students, and it is impossible. Competent heuristic teaching, adaptable, and flexible interaction with students. However, teachers are no longer the instructors of knowledge. They spend more time optimizing instructional design and promoting personalized learning, focusing more on emotional interaction with students and improving high-level thinking skills.

References

[1] Shengquan Yu. Human-computer cooperation: the transformation of teachers' roles and thinking

in the era of artificial intelligence. Digital teaching in primary and secondary schools, 2018 (3): 24-26.

[2] Siauk.Impact of Aritificial Intelligence, Robotics, and Au-tomation on Highner Education [EB/OL].http://alise.ais-net.org/cgi/viewcontent.cgi?article=1579&content=a-mcis2017, 2018-03-21.

[3] Kaiquan Chen, He Yao, Zhong Guoqiang. The Information Literacy Connotation Transformation and the Orientation of AI Education in the Perspective of Artificial Intelligence——Also on the AI Curriculum and Teaching Implementation Path in the Basic Education Stage. Journal of Distance Education, 2018, (1): 61-71.

[4] Yujing Liang. Cold thinking of artificial intelligence education. Primary and secondary school audio-visual education, 2018 (06): 22-24.

[5] Jiyou Jia. The Dialectical Relationship between Artificial Intelligence and Education. Education and Culture Forum, 2018, 10 (04): 137.

[6] Zhanyuan Du. Artificial Intelligence and Future Education Reform. China's National Conditions, 2018 (01): 6-8+5.

[7] Weiwei Tang, Liting Guo, Yueguang Xie, Shaochun Zhong.Study on STEM Interdisciplinary Integration Model Based on Educational Artificial Intelligence. China Electro-chemical Education,2017(08):46-52.

[8] Huilai. Zou The warning and enlightenment of AlphaGo to artificial intelligence education in China. Computer Education, 2017(3): 78-80.

[9] Jingjing Wu. Several Issues on the Application of Artificial Intelligence Education. Education and Teaching Forum, 2012(09): 159-160.

[10] Qingshui Xue, Fengying Li. Security Risks and Countermeasures in Artificial Intelligence Education Applications. Journal of Distance Education, 2018, 36(4): 88-94.

[11] Weiwei Chen. The Development and Application of Artificial Intelligence Technology in the Horizon of Multiple Intelligences. Research on Electron Education, 2018, 39(7): 12-19.

[12] Wei Yang. On the development status of domestic artificial intelligence education. Information Technology and Informatization, 2018 (07): 148-151.

[13] Yingli Liang, Liu Chen. Analysis of current situation, typical characteristics and development trend of artificial intelligence education application. China Electro-education Education, 2018 (3): 24-30.

[14] Zhen Li, Zhou Dongyu, Liu Na, Ouyang Meng. Research on Educational Artificial Intelligence under the Background of Artificial Intelligence Application. Modern Educational Technology, 2018, 28(09): 19-25.

[15] Zhijia Mou. Rethinking and Opening the Theory of Personalized Learning in the Age of Artificial Intelligence. Journal of Distance Education, 2017, 35(3): 22-30.

[16] Zhiming Yan, Tang Xiaxia, Qin Wei, et al. The Connotation, Key Technologies and Application Trends of Educational Artificial Intelligence (EAI): Analysis of the US "Preparing for the Future of Artificial Intelligence" and "National Artificial Intelligence R&D Strategic Planning" Report. Journal of Distance Education, 2017, (1): 26-35.

[17] Zhijia Mou. Rethinking and Opening the Theory of Personalized Learning in the Age of Artificial Intelligence. Journal of Distance Education, 2017, 35(3):22-30.