

Construction and Innovation of Education System from the Perspective of Artificial Intelligence

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Abstract

The Artificial Intelligence in Education: Challenges and Opportunities for Sustainable Development officially released by UNESCO, has drawn up a blueprint and implementation manual for the development of artificial intelligence in education. Grasping the connotation and development trend and analyzing the characteristics of education in the era of artificial intelligence, will help promote teacher education reform in the new era, and provide a strong foundation for the realization of educational modernization goals.

Keywords

Artificial Intelligence; Education; System.

1. Introduction

The advent of the era and the rapid development of artificial intelligence technology are profoundly affecting and changing all aspects of human economy, society and life, and also presenting huge challenges to education. Its impact and significance are far-reaching. In the face of increasing competition worldwide, nothing is more important to the future of our country than the education of future citizens. Facing the new needs and new challenges in the era of artificial intelligence, how to train future teachers who are more suitable for high quality and prepare normal students for the era of artificial intelligence through education is the common requirements of educational decision makers, researchers and practitioners who have to face.

2. The Connotation of Artificial Intelligence+ Education

Since its birth at the Dartmouth Conference in 1956, the field of artificial intelligence (AI) has been receiving widespread attention. Artificial intelligence is a technology science that studies the use of advanced digital technologies to enable machines to perform highly complex tasks (thinking, reasoning, etc.) as effectively as human beings. It is regarded as an important technology that affects and changes the society of the future (Yin Shifei, Zhang Wei.2019). After more than 60 years of development, the field of artificial intelligence has developed rapidly in recent years. At present, the global research on artificial intelligence mainly focuses on the following aspects: artificial intelligence learning, artificial intelligence reasoning, artificial intelligence problem solving, artificial intelligence perception, and the use of artificial intelligence language. With the re-emergence of artificial intelligence, the view that "artificial intelligence is an important driving force for future educational reform" has been generally accepted (Ning Hong, Lai Limin.2019). In the year 2016-2019, UNESCO successively released working papers or reports such as Education 2030 Agenda, Artificial Intelligence in Education: Challenges and Opportunities for Sustainable Development, and held a number of global conferences to explore the potential of artificial intelligence for educational change(Huang Ronghuai, etc.2019). In March 2019, UNESCO officially released the report Artificial Intelligence in Education Challenges and Opportunities for Sustainable Development, which systematically summarized the education application situation and related experience of artificial intelligence in various countries in the world, and became a new guide to drive the healthy development of global artificial intelligence + education in the future.

3. The trend of development of Artificial Intelligence+Education

Artificial intelligence provides new facilities for educational development and change by providing new educational technology and improving the educational environment. Therefore, countries are beginning to raise artificial intelligence to the national strategy and put forward corresponding policies and measures to promote the development of artificial intelligence from the national government to seize the high point of artificial intelligence technology. South Korea is the first country to plan the development of intelligent education in that early year of 2011, including the popularization of digital teaching materials, the promotion of online learning and evaluation, the creation of an environment for free use of educational resources, and the promotion of the ability of the teachers applied intelligent education into practice. The above strategic tasks based on the cloud computing-based education service foundation are strengthened. In 2016, the United States first released a report on the future of artificial intelligence: National Artificial Intelligence Research and Development Strategic Planning and the like. In 2018, the United States has also held an AI Summit in the White House, emphasizing the use of STEM education, training and life-long learning, and other ways of training new people of artificial intelligence (Li Hongbao, Yuan Mingyuan, and Wang Haiying,2019). In February 2019, the United States released the United States AI Initiative signed by President Trump. In April 2018, the UK published a report named British artificial intelligence: preparation, will and capacity that in the early stage of education, children need to be fully prepared for the use of artificial intelligence. Japan issued an artificial intelligence draft in September 2018 and proposed to train of the elite in the field of information technology and digital science to improve the basic ability of all-nation artificial intelligence.

China has made some new thinking and planning in promoting the integration of artificial intelligence and education, and has made some positive explorations and attempts. In July 2017, the State Council issued the New Generation Artificial Intelligence Development Plan, which put forward the guiding ideology, strategic objectives, key tasks and safeguard measures for the development of the new generation of artificial intelligence in China by 2030 and explicitly proposed to improve the artificial intelligence education system, build artificial intelligence disciplines, and set up artificial intelligence related courses in primary and secondary schools (State Council of China,2018). In April 2018, the Ministry of Education released the Action Plan for Artificial Intelligence Innovation in Colleges and Universities. In May 2018, the Ministry of Education issued the Education Informatization 2.0 Action Plan, which marked the rise of Chinese artificial intelligence to the national strategic level, and the integration of artificial intelligence and education has begun. On May 16 2019, China in cooperation with the United Nations Educational, Scientific and Cultural Organization, organized the International Conference on artificial Intelligence and Education and published the Beijing Consensus on artificial intelligence, and representatives from all over the world gathered together to explore the road to the development of global education in the era of artificial intelligence.

4. The Features of Artificial Intelligence +Education

The coming of the era of artificial intelligence indicates the great changes of the social career prospect and the great changes of the life and working style of human beings, which poses a great challenge to the future education system of training talents. Understanding the trends and trends of future education development is an important basis for promoting the reform of teacher education system. AI + Education is not on-line education, but a revolutionary idea, which is to take sustainable development and high-quality development as innovative elements, and to innovate the organization, service and teaching mode of Education Then construct the new education ecological system in the artificial intelligence age.

4.1 Sustainable Lifelong Education System

According to the United Nations Educational, Scientific and Cultural Organization, Sustainable Development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Education will be the engine for sustainable development

and the key to a better world. As the inevitable choice of future education development, life-long education is not only the rational guidance of individual life value, but also the inevitable way of human civilization development (Sun Gang, Zhang Dan. 2018). The right to education will run through the entire existence of life. As far as the essence of life-long learning is concerned, it covers the learning activities in different life backgrounds of people of all ages, and is rooted in the high agreement between learning and life through various ways of co-occurrence to meet a wide range of learning needs (National Research Centre for the development of education thematic group, 2016). Lifelong learning as the cornerstone of a learning society means that each individual must continue to learn throughout his or her life (United Nations Educational, Scientific and Cultural Organization.1996). In the Education 2030 framework for action released in 2015, the education objective of the Sustainable Development Goals (SDG4) is to ensure inclusive and equitable quality education and to promote lifelong Learning opportunities for all. The United Nations Educational, Scientific and Cultural Organization and the United Nations Communications Technology Agency (ITU), collaborated to hold Mobile Learning Week from 2011 with the goal to help United Nations Educational, Scientific and Cultural Organization members and others understand how technology can be used to address challenges in education. This year's theme is artificial intelligence for sustainable development, focusing directly on the sustainable development of education. Therefore, teacher education should also aim at constructing sustainable development system for life-long development.

4.2 Education Management System based on data evidence

In recent years, evidence-based education (EBCE) has been paid more and more attention by education researchers and relevant administrations all over the world. EBCE has become a new driving force of education reform and innovation (Deng Minjie, Zhang Yichun, Fan Wenxiang, 2019). From a scientific operational point of view, evidence-based education provides not only scientific methods for creating evidence, but also reasonable steps for applying evidence (Liu Chunyan, 2018). In the age of artificial intelligence, it will be possible to further translate data into appropriate educational policies, and data driven decision making will become one of the central tasks of educational reform in schools and regions. Deep Learning and big data are inseparable in the age of artificial intelligence. Deep learning can extract valuable data, knowledge, or patterns from big data that were previously unimaginable. With the aid of artificial intelligence technology, the Education Management Information System will change from a simple school administration system to an integrated and dynamic data management system. Artificial intelligence technology can automatically analyze various educational data for the education management departments and schools to better formulate and implement the decision-making, to provide a good basis for local conditions to improve school education in various regions. A well-designed and well-functioning education management system can help education management to obtain timely and effective information, develop feasible and appropriate education plans and policies, and monitor and evaluate education processes and results. Based on education data, education authorities and schools are better able to formulate and implement decisions and improve them in a timely manner.

4.3 A more open, diverse and equitable education system

Artificial intelligence not only changes the space-time structure of previous educational activities, but also changes the distribution of learning resources and changes the relationship between educators and students. Under the influence of modern mobile information technology, people's learning is more and more unconstrained by time and place (Woolf B P, Lane H C, Chaudhri V K, et al.2013). MOOC and other massive open online courses and online learning platforms bring together online courses in AI Education from the world's top universities. Learning is no longer confined to a certain place and practice within the activities, but can happen at any time anywhere. Faced with the sweeping artificial intelligence technology, educators are both the demand side and the supply side of artificial intelligence. On the one hand, artificial intelligence has great potential to improve the education system. It helps learners, teachers, managers and decision makers to learn and obtain data. On the

other hand, the education system is expected to train learners of the skills needed in an AI society and developers of Ai Technologies. In the era of the rapid development of artificial intelligence, the traditional, assembly-line-like form of education will eventually disappear, but education will still exist, only to shift the focus to artificial intelligence cannot replace the work, to the growth and improvement of people themselves.[16] Artificial intelligence + education breaks the wall of traditional knowledge to some extent, breaks the closed school system, breaks the traditional teaching structure and breaks the fixed organizational form of the school through online education Let learners of different time and space, different regions and different cultural backgrounds become classmates, school education is no longer subject to the constraints of time and space and field, thus promoting the innovation of education and teaching models. At the same time, the government, industry and other social institutions should be strengthened to explore and develop AI education. The education reform should be carried out from the angle of constructing good ecology, and the cooperative mechanism between school and outside society should be established to form a new pattern with high-level sharing of resources and seamless flow.

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References

- [1] Yin Shifei , Zhang Wei: RESEARCH ON TRENDS IN UK higher education reform in the age of artificial intelligence, *Comparative Education Research*, (2019) No.1: p.3-8.
- [2] Ning Hong, Lai Limin : AI + education. *Intermediate Constitutive Existence*, *Educational Research*, (2019) No.6: p.27-37.
- [3] Huang Ronghuai , etc. Ai Promotes Education 2030 agenda. *China Education News*, May 18,2019.http://paper.jyb.cn/zgjyb/html/2019-05/18/content_518534.htm?div=-1.
- [4] Li Hongbao , Yuan Mingyuan, Wang Haiying: The driving force of AI + education: A new guide —— A UNESCO report on Ai in education, *the Journal of Distance Education*, (2019) No.7: p. 3-12.
- [5] State Council of China. Circular on the development plan of the new generation of artificial intelligence.http://www.gov.cn/zhengce/content/2017-07/20/content_5211996.htm.
- [6] Sun Gang, Zhang Dan. The philosophy of lifelong education and its value orientation based on the Education 2030 action framework, *adult education*, (2018) No.1: p.1-5.
- [7] National Research Centre for the development of education thematic group. Towards comprehensive, equitable, quality education and lifelong learning for all: Overall goals and strategic approaches in the education 2030 framework for action, *World Education Information*, (2016) No.1: p. 12-15.
- [8]United Nations Educational, Scientific and Cultural Organization. *Learn to Survive*. Institute of Comparative Education, East China Normal University, Translation. (BEIJING: Science Press. 1996: p. 12).
- [9] Deng Minjie , Zhang Yichun , Fan Wenxiang , the development, application and main experience of evidence-based education in the United States, *Comparative Education Research* , vol. 41(2019) No.4, p. 91-97.
- [10] Liu Chunyan : educational technology: FROM EVIDENCE-BASED TO WISDOM EDUCATION, *Audio-visual Education in China*, vol. 10 (2018), p. 40-48.
- [11]Woolf B P, Lane H C, Chaudhri V K, et al.: AI Grand Challenges for Education. *AI Magazine*, (2013) No.4, p. 66.