

The Challenge and Development of Vocational Education Under the Background of Artificial Intelligence

Jinhua Ma

Shandong Vocational College of Science and Technology, Weifang, Shandong, 261053

809352845@qq.com

Keywords: Vocational education, Artificial intelligence.

Abstract. With the development of artificial intelligence, vocational education is facing unprecedented development opportunities, including the support and guidance of national policies, artificial intelligence technology support. At the same time, the arrival of the era of artificial intelligence has also brought new challenges to the development of vocational education, mainly in the form of vocational education, professional construction and teaching content and other aspects of the transformation and innovation. Faced with the opportunities and challenges in the new era, vocational education should deepen its reform and reform from the aspects of specialty setting, teaching content and teachers, so as to meet the talent training objectives in the era of artificial intelligence.

1. Introduction

In 1956, the concept of "artificial intelligence" was first proposed at the Dartmouth meeting. In 1997, the IBM supercomputer "Deep Blue" defeated chess world champion Kasparov. In 2016, AlphaGo, an artificial intelligence Go program developed by Google's deep learning company DeepMind, defeated World Go champion Li Shishi. Then the field of artificial intelligence applications continues to evolve, like financial robots, driverless, voice and face recognition. In the field of education, the application of artificial intelligence has also achieved a major breakthrough. During the 2017 college entrance examination, robot Ada challenged the college entrance examination mathematics, completed the exam in 10 minutes, and scored 134 points.

2. Development of artificial intelligence

The artificial intelligence of English is Artificial Intelligence, referred to as AI. Regarding the concept of artificial intelligence, no unified opinions have been formed at home and abroad. But it is generally believed that artificial intelligence is about the intelligent behavior of artifacts, including perception, reasoning, learning, communication, and behavior in complex environments. According to the strength of the function, artificial intelligence can be divided into three categories, namely "weak artificial intelligence, strong artificial intelligence, super artificial intelligence".

The development of artificial intelligence has gone through three stages. The first stage was mainly in the 1960s and was mainly represented by knowledge expressions such as propositional logic and predicate logic and heuristic search algorithms. The second stage was in the 1970s. With the gradual improvement of semiconductor technology computing hardware capabilities, artificial intelligence gradually began to break through; the third stage began in the late 20th century, and began to enter the era of big data and self-learning cognitive intelligence in about 2006. . With the rapid development of the mobile Internet, the application scenarios of artificial intelligence have also begun to increase, and huge breakthroughs have been achieved in deep learning algorithms, voice and visual recognition.

China published artificial intelligence in the National "Eleventh Five-Year" Basic Research and Development Plan published in 2006, but it was only one of the branches of computing science. In

July 2016, in the “13th Five-Year National Science and Technology Innovation Plan” issued by the State Council (hereinafter referred to as “Planning”), artificial intelligence was included in the planning as a new generation of information technology, and the plan clearly pointed out It is necessary to focus on the development of big data-driven human-like intelligent technology methods, break through the human-centered human-mass fusion theory and key technologies, and develop related equipment, tools and platforms. Domestic technology companies, such as Baidu, Ali, Tencent, and Huawei, have already deployed artificial intelligence. Baidu’s artificial intelligence project “Baidu Brain” has achieved great success, with a speech recognition success rate of 97% and a face recognition accuracy rate of 99.7%.

3. Research on the Dilemma of Vocational Education Development

The impact of artificial intelligence on vocational education is deep and long-term. Depending on the nature, artificial intelligence will have a great impact and challenge in the following aspects of vocational education.

3.1 Artificial intelligence will have a great impact on the training position of vocational education

According to UNESCO's forecast, artificial intelligence will replace 2 billion jobs by 2020. Most of these positions are positions for the training of vocational education. The reason is that the talents trained in vocational education are mostly engaged in basic work and have strong substitution. The skills of low-tech and repetitive skills cultivated by the vocational education model will be digitized and intelligent, and will eventually be replaced by industrial robots. At the same time, society and enterprises will have higher requirements for the quality of personnel training in vocational education. The original vocational education talent training model will be difficult to adapt to the future industrial development needs. In the future, vocational education must re-distribute the job characteristics of vocational education and rebuild occupations. The talent training mode of education reconstructs the knowledge structure and knowledge system of professional talents.

3.2 Artificial intelligence will have a great impact on the teaching mode of vocational education

While artificial intelligence threatens the employment of vocational education, it also brings certain opportunities and challenges to vocational education itself. The development of artificial intelligence education will continue to break through time and space constraints, so that quality education resources can be scientifically configured and integrated. In addition, artificial intelligence education will pay more attention to the personalized learning of vocational students, reflecting the higher value of vocational education, such as students' creativity, curiosity, multidisciplinary thinking ability, creativity, critical thinking and problem-solving ability. In addition, the development of artificial intelligence education will be based on the analysis of students' advantages and disadvantages and personality characteristics, correcting their study habits and behavioral habits, and being able to teach according to their aptitude, tailoring, advancing and evaluating individualized according to their own characteristics. Study plans to enhance their hobbies.

4. Research on the Countermeasures for the Development of Vocational Education

4.1 Emancipate the mind and change the concept

Vocational education should incorporate artificial intelligence and other related concepts and techniques in the teaching and management process. At the same time, its school orientation, talent training program, professional construction, course content, assessment criteria and other aspects

need to be improved accordingly. For example, in most non-computer majors in vocational colleges, information technology courses have less class hours, and there are few data processing, programming or artificial intelligence courses. Such an arrangement is not conducive to improving students' information literacy and must be made. The corresponding adjustment. At the same time, appropriately reduce the class hours of skills courses that can be replaced by artificial intelligence applications in the future, such as computerized accounting, environmental monitoring, and so on.

4.2 Using Artificial Intelligence to Improve Teaching and Management

In the context of artificial intelligence, teachers can free up more time and pay more attention to the individual differences of students, thus providing learners with more accurate personalized learning services. Teachers can also adjust teaching methods and methods in a timely manner, optimize teaching evaluation methods, supplement teaching resources, reduce repetitive work in preparing lessons, improve teaching efficiency, and truly do “teaching students according to their aptitude” . At the same time, the learning methods and methods of students will be reconstructed to varying degrees. There are a large number of intelligent online learning platforms based on big data. Different schools, disciplines and professional courses are no longer closed, and learning can be carried out from time to time. Fragmentation and personalized learning will become more and more popular. The teacher can completely track the whole learning process of the students, and can perform intelligent analysis based on the monitoring data, which is beneficial to the process evaluation of the students more effectively and comprehensively. These changes brought by the above artificial intelligence to the teaching require both network hardware facilities and related software systems to support, and teachers who need vocational education continue to improve information skills, deepen and strengthen information literacy.

4.3 Deepen the integration of production and education, optimize training and build employment

In the era of artificial intelligence, vocational colleges should coordinate development with relevant industries, deepen the integration of production and education, and broaden the ways for enterprises to participate. Support and guide enterprises to deeply participate in the education and teaching reform of vocational colleges, and participate in school professional planning, textbook development, teaching design, curriculum setting, and internship training in various ways to promote the integration of enterprise needs into talent training. Encourage the use of enterprises to lead schools, introduce schools into schools, and integrate schools with schools to attract and build a productive production training base. Fully implement the modern apprenticeship system and the new apprenticeship system of enterprises, and promote the seamless connection between school employment and enterprise recruitment.

4.4 Improve the vocational education system for lifelong learning

With the in-depth promotion of artificial intelligence applications, if the skills acquired by skilled talents in vocational colleges are not upgraded in time, the repetitive work in the middle and low end will face the danger of being replaced by intelligent robots to varying degrees. . Therefore, for many skill posts, the era of "keeping a technology to eat a lifetime" will never return. Therefore, vocational education should continue to improve the lifelong education system, paving a "deep" channel for the "charging" upgrade of vocational education students.

4.5 Focus on literacy improvement

In the development of artificial intelligence, simple and repetitive work will be replaced, and more people will be freed from repeated and cumbersome tasks and will be transferred to more creative and innovative work. These jobs require cooperation and communication between people. Therefore, vocational education should pay more attention to the improvement of students' literacy, the cultivation of ideological and moral level and the comprehensive quality of humanities. On this

basis, students are encouraged to learn initiative and creativity, promote the formation of cross-border thinking, and better grasp the relevant professional post knowledge and corresponding intelligent skills in the era of artificial intelligence.

5. Conclusion

Vocational education serves the national strategy and social and economic development. It must face up to the challenges and opportunities brought by artificial intelligence and actively transform and develop. It is necessary to learn for artificial intelligence and artificial intelligence to learn to cultivate international high-skilled talents to meet the needs of the growing society, and to make the advancement of China's artificial intelligence strategy and the realization of the goal of manufacturing a strong country.

References

- [1] Fu Cairui, Guan Xin, Zhu Huayong, et al. Pen Talk on "Artificial Intelligence and Future Education" (Part II) , *Journal of East China Normal University: Educational Science Edition*, 2017 (5).
- [2] Jiang Zhijian, Zhao Xingmin, Lu Desheng, Strategies for the development of vocational education under the background of artificial intelligence, *China Vocational and Technical Education*, 2017 (30).
- [3] Wu Yonghe, Liu Bowen, Ma Xiaoling, Building an Ecological System of Artificial Intelligence + Education, *Journal of Distance Education*, 2017(5).
- [4] Zhang Yuwu, How to deal with the era of artificial intelligence in vocational education, *Vocational and Technical Education*, 2017 (21).
- [5] Zhang Weiyuan, Xie Qingsong, Research on the Level and Standard of Qualification Framework, *Open Education Research*, 2017(2).