

Opportunities and Challenges Faced by Higher Vocational Education under the Background of Artificial Intelligence

Shaofei Pan

Leshan Vocational and Technical College, Leshan, China

Abstract: With the rapid development of artificial intelligence technology, its profound influence on economic and social fields is increasingly apparent. Higher vocational education, as an important position to cultivate technical and skilled talents, has not only ushered in unprecedented development opportunities, but also faced many challenges under the background of artificial intelligence. The purpose of this paper is to explore the influence of artificial intelligence technology on higher vocational education, analyze the opportunities and challenges faced by higher vocational education in the era of artificial intelligence, and put forward corresponding countermeasures with specific cases, in order to provide theoretical reference and practical guidance for the high-quality development of higher vocational education.

Keywords: Artificial Intelligence Background, Higher Vocational Education, Opportunities and Challenges

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I. Introduction

After more than a decade of development, the number and quality of awards won in vocational skills comp Since artificial intelligence was first written in the government work report of the State Council in 2017, artificial intelligence technology has rapidly become a national strategy and an important force to promote economic and social development. Under the strong advocacy of the national level, the whole society has set off a wave of artificial intelligence technology innovation, and all walks of life have explored the application and integration of artificial intelligence technology. Higher vocational education, as the education type most closely related to economic and social development, is inevitably deeply influenced by artificial intelligence technology. From the perspective of the relationship between productivity and production, this paper will deeply analyze the opportunities and challenges faced by higher vocational education under the background of artificial intelligence, and discuss them with practical cases.

II. The profound influence of artificial intelligence on higher vocational education

2.1 changes in productivity

Artificial intelligence is essentially a profound change in productivity. It greatly improves the production efficiency and automation level by imitating, extending and expanding human intelligence^[1]. In the field of production, the application of artificial intelligence technology has promoted the intelligent upgrading of traditional manufacturing industry, and the introduction of a large number of intelligent robots and automation equipment has gradually replaced simple and repetitive mechanical jobs. For example, the implementation of Germany's "Industry 4.0" strategy has greatly improved the production efficiency of its manufacturing industry, and at the same time, the skills requirements for workers have also changed. Workers on traditional production lines need to master more knowledge and skills related to intelligent equipment to adapt to the new production mode^[2].

2.2 Reconstruction of production relations

The transformation of productive forces will inevitably lead to the reconstruction of production relations. Under the background of artificial intelligence, higher vocational education, as one of the suppliers of labor force, must actively respond to the changes in production relations. On the one hand, with the wide application of artificial intelligence technology, some traditional jobs will gradually decrease, which will have a direct impact on the employment structure of graduates of higher vocational education; On the other hand, the development of emerging industries has spawned a large number of new jobs, put forward higher requirements for the knowledge structure and skill level of talents, and provided new development opportunities for higher vocational education. For example, in China's "new infrastructure" strategy, artificial intelligence is an important part, which provides new employment directions for graduates of higher vocational education, such as data analysts and machine learning engineers.

III Opportunities of Higher Vocational Education under the Background of Artificial Intelligence

3.1 New opportunities for personnel training

The rapid development of artificial intelligence technology provides new opportunities for talent training in higher vocational education^[3]. Facing the rise of emerging industries and the transformation and upgrading of traditional industries, higher vocational education can actively adjust specialty settings and talent training programs, strengthen the construction and development of artificial intelligence-related majors, and cultivate high-quality technical and skilled talents that meet market demand. For example, a higher vocational college in Beijing has set up a major of artificial intelligence technology application. Through cooperation with enterprises, it has worked out a talent training plan and a teaching plan, focusing on cultivating students' practical ability and innovative thinking. The graduates of this school are widely welcomed in the job market, with an employment rate of over 95%.

3.2 Innovation of educational model

The application of artificial intelligence technology provides the possibility for the innovation of higher vocational education mode. The traditional mode of higher vocational education often pays attention to imparting knowledge and training skills, but ignores students' subjectivity and individualized needs. Under the background of artificial intelligence, by introducing intelligent teaching system and personalized learning platform, real-time monitoring and accurate analysis of students' learning process can be realized, and tailor-made learning programs and teaching resources can be provided for each student. For example, a vocational college in Shanghai has introduced an intelligent tutoring system, which can provide personalized learning suggestions and exercises according to students' learning progress and mastery. By using this system, students' learning efficiency has been significantly improved, and their academic performance has also been significantly improved.

3.3 Modernization of governance system

The application of artificial intelligence technology also helps to promote the modernization of the governance system of higher vocational education. By establishing a big data center and management service platform, and using big data analysis, business modeling, data visualization and other technical means, comprehensive, accurate and scientific decision-making on vocational education management can be realized. For example, a higher vocational college in Jiangsu has established a student information management system, which can collect and analyze students' study, life, employment and other data in real time. Through this system, the school management can know the needs and problems of students in time and make corresponding decisions and adjustments. This not only improves the management efficiency and service level, but also enhances the communication and interaction between schools and students.

IV. Challenges of Higher Vocational Education under the Background of Artificial Intelligence

4.1 structural unemployment of graduates has intensified.

With the wide application of artificial intelligence technology, some traditional jobs will be gradually replaced, which will aggravate the structural unemployment of graduates^[4]. On the one hand, the demand of enterprises for simple and repetitive mechanical work decreases, and the demand for talents with advanced skills and comprehensive quality increases; On the other hand, graduates of higher vocational education often lack the knowledge structure and skill level suitable for the development of emerging industries, and it is difficult to meet the market demand. For example, the reduction of some traditional manufacturing jobs makes graduates of related majors face employment difficulties. This contradiction between supply and demand not only aggravates the employment difficulty of graduates, but also poses a severe challenge to the sustainable development of higher vocational education. In order to meet this challenge, higher vocational education needs to strengthen cooperation with enterprises, jointly develop courses and practical projects that meet market demand, and improve students' practical ability and employment competitiveness.

4.2 The problem of imperfect governance system appears.

Under the background of artificial intelligence, the imperfection of the governance system of higher vocational education is further revealed. On the one hand, the traditional management system and governance methods are difficult to meet the needs of the intelligent era; On the other hand, the extensive application of modern information technology puts forward higher requirements for the governance ability and level of higher vocational education. For example, when some higher vocational colleges introduce intelligent teaching systems, students and parents are worried and dissatisfied because of inadequate data security and personal privacy protection measures. In order to improve the governance system, higher vocational education needs to strengthen the informatization construction and improve the management level, establish a perfect data security and personal privacy protection mechanism, and ensure the smooth progress of informatization teaching.

4.3 Education and teaching reform pressure increased

The application of artificial intelligence technology puts forward higher requirements for the teaching mode and method of higher vocational education. The traditional passive and indoctrination teaching mode has been difficult to meet the needs of the intelligent era. Students pay more attention to equal communication, sharing interaction and personalized learning experience. Therefore, higher vocational education must accelerate the pace of education and teaching reform, introduce advanced technical means such as intelligent teaching system and personalized learning platform, and promote the innovation and development of teaching models and methods. However, this change not only needs a lot of financial and technical support, but also needs the active participation and cooperation of teachers and students. For example, when faced with the introduction of intelligent teaching system, some teachers feel at a loss because of the lack of relevant training and support, which affects the teaching effect. Therefore, higher vocational education needs to strengthen the training and support for teachers, improve teachers' professional quality and teaching ability, so as to meet the teaching needs of the intelligent era.

V. Coping strategies and suggestions

5.1 Strengthen professional construction and personnel training

Facing the challenges and opportunities in the era of artificial intelligence, higher vocational education should actively adjust the specialty setting and talent training program. On the one hand, it is necessary to strengthen the construction and development of artificial intelligence-related majors and cultivate high-quality talents with innovative and practical abilities; On the other hand, we should pay attention to the upgrading and cross-integration of traditional majors, so that students can have interdisciplinary comprehensive quality and adaptability. For example, some higher vocational colleges cooperate with enterprises to jointly develop courses and practical projects, so that students can better master practical application skills. At the same time, we should pay attention to cultivating students' comprehensive quality and innovative ability to meet the needs of future career development. In addition, students' innovative thinking and practical ability can be stimulated by setting up innovation and entrepreneurship centers and launching scientific and technological competitions.

5.2 Promote the innovation of governance model

Under the background of artificial intelligence, it is very important to promote the innovation of governance model of higher vocational education. On the one hand, it is necessary to establish and improve the big data center and management service platform to realize comprehensive, accurate and scientific decision-making on vocational education management; On the other hand, it is necessary to build a multi-collaborative governance mechanism to mobilize the enthusiasm and creativity of all parties. For example, some higher vocational colleges have established the cooperation mechanism between schools and enterprises, and the integration mechanism of Industry-University-Research's use, etc., and jointly worked out the talent training scheme and teaching plan with enterprises, thus realizing the deep integration of education and industry. At the same time, it is necessary to strengthen policy guidance and support and promote the innovation and development of governance models. The government can introduce relevant policies to encourage higher vocational education to cooperate with enterprises and scientific research institutions to jointly promote the innovation and practice of governance model.

5.3 Strengthen the construction of teaching staff

Teachers are an important guarantee for the development of higher vocational education. Under the background of artificial intelligence, it is particularly important to strengthen the construction of teaching staff. On the one hand, it is necessary to strengthen teachers' professional training and skills upgrading, so that they can adapt to the teaching needs of the intelligent era; On the other hand, teachers should be encouraged to actively participate in education and teaching reform and innovative practice, so as to improve their teaching level and ability. For example, some higher vocational colleges improve teachers' professional quality and teaching ability by organizing teachers to participate in professional training and academic seminars. At the same time, we should pay attention to introducing and cultivating a group of outstanding talents with high quality and innovative ability to enrich the teaching staff of higher vocational education. In addition, teachers' teaching enthusiasm and teamwork ability can be improved by establishing teachers' incentive mechanism and strengthening the construction of teachers' team.

5.4 Strengthen international cooperation and exchanges

Under the background of globalization, strengthening international cooperation and exchange is one of the important ways to promote the development of higher vocational education. By establishing cooperative relations with higher vocational education institutions in advanced countries and regions, we can learn from their successful experiences and advanced practices and promote the development and innovation of higher vocational education in China. For example, some higher vocational colleges have established cooperative relations with

well-known foreign universities to jointly carry out scientific research projects and academic exchange activities, thus enhancing their international influence and academic level. At the same time, we can strengthen students' international vision and cross-cultural communication ability through international exchange programs and student exchange programs to meet the needs of future globalization. In addition, we can strengthen the contact and cooperation with the international higher vocational education community by participating in international vocational education organizations and joining international educational cooperation projects.

VI. Conclusion and prospect

The rapid development of artificial intelligence technology has brought unprecedented opportunities and challenges to higher vocational education. Faced with these opportunities and challenges, higher vocational education must actively respond and innovate to realize its leap-forward development. By strengthening specialty construction and personnel training, promoting innovation of governance model, strengthening the construction of teaching staff and strengthening international cooperation and exchanges, we can continuously improve the teaching quality and school-running level of higher vocational education and cultivate more high-quality technical and technical talents for economic and social development. Looking forward to the future, with the continuous development and application of artificial intelligence technology, higher vocational education will usher in a broader development space and a better development prospect. While meeting the challenge, higher vocational education should also actively seize the opportunity and constantly innovate and develop.

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