Application of Artificial Intelligence in Modern Vocational Education Technology

Xi Wu*
Shanghai Urban Construction Vocational College, Shanghai, China

*Corresponding author e-mail: wuxi@succ.edu.cn

Abstract. In recent years, with the rapid development of network technology and information technology, artificial intelligence has become the development trend of modern technology. Over the past 50 years, scientists from various countries around the world have continuously explored artificial intelligence technology. Up to now, artificial intelligence has achieved great results. Compared with traditional modern technology, artificial intelligence has broken through the shackles of traditional technology, and has been highly sought after in various fields for its advantages such as being more convenient, more effective, saving time, labor and cost. Modern vocational education is an effective part of China’s higher education, mainly providing professional technical talents for the society. At present, vocational education has not been developing in China for a long time, and the application of computer technology in vocational education is even later. In recent years, although the rapid development of computer technology in China has promoted the development of vocational education to a certain extent, the actual application of computer technology in modern vocational education has lagged far behind the development of computer science itself. While many disciplines of artificial intelligence based on “knowledge engineering” have achieved certain results, modern vocational education still evolves traditional computer technology. Obviously, modern vocational education is far from artificial intelligence technology in computer application. How to effectively apply artificial intelligence technology to the summary of modern vocational education, make full use of the potential of computer technology itself, and bring new development opportunities for the development of modern vocational education has become an important issue that modern vocational education workers need to solve urgently. From the perspective of artificial intelligence technology, this paper deeply analyzes the current status and problems of the application of artificial intelligence technology in modern vocational education in China. And on this basis, this paper puts forward the feasibility suggestions for introducing artificial intelligence into modern vocational education technology. The main purpose of the research in this article is to urge our modern vocational education colleges to pay enough attention to artificial intelligence technology and to stimulate the interest of modern vocational education scholars on artificial intelligence. Furthermore, the artificial intelligence technology can be fully and efficiently implemented into modern vocational education, and more high-quality professional and technical personnel can be cultivated for the society.
Keywords: Artificial Intelligence; Modern Vocational Education; Application of Technologies

1. Decryption of Artificial Intelligence Technology
Artificial intelligence is a cutting-edge discipline, an extension and extension of computer technology and information technology. It includes not only the computer technology, but also the content of control, system science, and philosophy. Not only is this technology more accurate and convenient than traditional computer technology, but its efficiency has also attracted much attention in many fields. Therefore, artificial intelligence technology is also regarded as the product of the third industrial revolution, which effectively promoted the progress of the times and technological changes. Although artificial intelligence has been developed for decades, the mechanism currently has no clear conceptual definition of artificial intelligence. According to the characteristics of artificial intelligence, some scholars currently define artificial intelligence as a subject that combines intelligence and computers. Its main purpose is to study how to make intelligent machines (intelligent computers) or intelligent systems, so that it can simulate, diffract and expand the subject of human intelligence. In short, the so-called artificial intelligence is a discipline on how to make machines simulate human thinking and perform various actions.

Facing the rapid development of information technology, traditional computer technology can no longer meet the development needs of the times, and many problems in various fields require accurate judgment of human thinking. From the perspective of vocational education, vocational education focuses more on practical teaching. These teaching content and practical operations need artificial intelligence simulation to be better quantified and more intuitively displayed in front of students. At present, due to the lack of artificial intelligence technology in modern vocational education, it is difficult for some experienced scholars to effectively realize their maximum potential, which greatly reduces the effectiveness of teaching. Therefore, the introduction of artificial intelligence technology in modern vocational education has an important role in promoting the development of modern vocational education.

| Main contents of artificial intelligence | Main application of artificial intelligence technology |
|----------------------------------------|------------------------------------------------------|
| Automatic recognition of video content | Compare video content sample root content files, identify content by its own characteristics |
| Automatic language translation         | It can automatically recognize human speech and instantly translate it into different languages |
| Context-aware computing                | Automatically sense the surrounding environment and the context in which it is used to adjust its behavior |
| Smart robot                           | Help learners learn from their own experience, and then act autonomously according to the surrounding environment |
| Computer vision, image recognition    | This technology can process images in specific use cases in vertical domains |

2. Problems in Introducing Artificial Intelligence in Modern Vocational Education
Although the development of artificial intelligence has been developed and researched for several years, some artificial intelligence technologies are currently used in the field of industrial production. However, the use of artificial intelligence in modern vocational education has just begun. In modern vocational education, we must first clearly understand the advantages of artificial intelligence and how to effectively use it. Only in this way can we benefit and avoid disadvantages in the modern vocational education in the future, and not use artificial intelligence blindly, so as to maximize the effectiveness of artificial intelligence.

2.1. It is Difficult to Develop and Use Artificial Intelligence in Modern Vocational Education
Although artificial intelligence has been explored by many scholars, and some achievements have been used in various fields of production, artificial intelligence is rarely used in modern education. Many modern vocational education scholars know relatively little about artificial intelligence, even at the stage of cognition. In addition, artificial intelligence technology is involved in subject knowledge in multiple fields. Therefore, developers not only have relevant professional knowledge, but also have comprehensive literacy in multiple fields such as systems engineering and software development. This is more difficult for modern professional educators who are limited to professional knowledge. Even some computer scientists with rich experience due to the lack of relevant theoretical knowledge such as engineering control will make it difficult to explore artificial intelligence. The core and foundation of artificial intelligence is human knowledge and experience. In order to effectively develop artificial intelligence, it is necessary to move from traditional numerical computer programming to programming centered on knowledge symbol processing. Obviously, there are many obstacles to realize the transformation of this thinking concept. In addition, the artificial intelligence system is a complex discipline, and its development has a long period. In the development process, not only must have excellent software and hardware equipment, but also the long-term and unremitting efforts of developers. Compared with projects in which it is easier to obtain professional subjects in a short period of time, research on the use of artificial intelligence technology in vocational education may be more easily ignored.

Table 2. The Status Quo of Teachers’ Application of Artificial Intelligence Technology at Higher Vocational Colleges

| Item                                           | Proportion (%) |
| -----------------------------------------------|---------------|
| Rich in artificial intelligence technology     | 33%           |
| Lack of relevant theoretical knowledge and insufficient experience | 33%           |
| Little is known about artificial intelligence technology | 64%           |

2.2. Artificial Intelligence and Modern Vocational Education Are Relatively Inter-independent and it is Difficult to Integrate the Two

At present, artificial intelligence technology has been developed for decades, but artificial intelligence technology is mainly used in the production field, and the application in modern vocational education discipline has hardly been involved. The current research on artificial intelligence technology is mainly focused on the application in the field of industrial control and socioeconomic systems or military. In general, these areas are more likely to achieve greater results in a shorter period of time. The use of artificial intelligence in modern vocational education takes a long time, and the research on the application of this field is almost blank [1]. At the same time, many modern vocational education scholars still follow the traditional teaching model based on traditional experience and skills. This teaching idea is relatively outdated, and lagging teaching ideas have led these teaching workers to be reluctant to accept and try to use new technology to innovate teaching modes. This has greatly increased the use of artificial intelligence technology in modern vocational education to a certain extent. In summary, only through the penetration and integration of artificial intelligence into modern vocational education can we effectively promote the effective application of artificial skills in modern vocational education [2-4]. However, it is obviously not optimistic to achieve the integration and penetration of the two at present, and a strong bond is required to promote the mutual fusion of the two.

2.3. Limitations of Artificial Intelligence Technology

Although artificial intelligence technology has been researched for decades, these studies are mainly aimed at the study of artificial intelligence machines and the use of distributed artificial intelligence and basic reasoning knowledge. In particular, the application of expert systems, an important branch of artificial intelligence, has made breakthrough progress in this field. Although China has made some achievements in artificial intelligence, compared with other countries, there is still a large gap. In
particular, the use of artificial intelligence in the fields of education and scientific research is still relatively incomplete and still requires a long period of research.

2.4. Constraints in the Funds Invested in Computer Software and Hardware
Artificial intelligence technology is a comprehensive discipline based on computer technology. It requires strong computer software and hardware support, and it also requires huge capital investment in computer software and hardware systems. Basically, personal PC-based modern vocational education research is not enough to pay for huge educational capital investment, which also severely restricts the development and use of artificial intelligence in modern vocational education.

3. Opportunities for the Development of Modern Vocational Education Using Artificial Intelligence
Although the research on artificial intelligence technology in the related fields of education and scientific research is still in its infancy, the effective integration of artificial intelligence and modern vocational education technology is almost blank. In addition, for a long time, the research on artificial intelligence technology in China has mainly focused on the control of intelligent systems and military fields, and there is a lack of research and theoretical guidance in the field of education. This has led to the lagging development of the use of artificial intelligence technology in modern vocational education in China [5]. However, this does not effectively indicate that the artificial intelligence in our country cannot be effectively integrated and applied to modern vocational education. Because of this, the application of artificial intelligence technology in the field of modern vocational education still has great development potential and broad development space. In this regard, we must give sufficient trust to the development of artificial intelligence technology in modern vocational education. It is believed that we can make full use of the existing achievements of artificial intelligence in the near future to deeply tap the potential of modern education and promote the development of modern vocational education to a new stage. Specifically, the following favorable conditions provide great opportunities for the development of artificial intelligence technology in the development of modern vocational education:

3.1. Widespread Application of Computers
At present, computers have entered millions of households. Chinese citizens have a comprehensive understanding of computers. Primary and middle school students have also received computer theory teaching from an early age [6]. Computers are the basis of artificial intelligence. Therefore, the popularity and widespread use of computers have laid a solid foundation for the use of artificial intelligence in modern vocational education technology.

3.2. Great Achievements Have Been Made in Equipment Development and Personnel Training
Artificial intelligence is a breakthrough and new achievement made by China's computer computing discipline in the new era. In recent years, countries around the world have been continuously exploring the field of artificial intelligence [7]. The same is true in China. China attaches great importance to artificial intelligence technology and provides comprehensive support from equipment to scientific research personnel. Up to now, China’s artificial intelligence technology has achieved initial results. In the future, with the development of science and technology, the potential of various fields of artificial intelligence technology will be continuously tapped, and artificial intelligence technology will also be applied in various fields. Therefore, the maturity and improvement of artificial intelligence equipment and talents provide effective guarantee for the use of artificial intelligence in modern vocational education.

3.3. Promotion and Implementation of Modern Educational Technology Based on Artificial Intelligence
Computer technology has been introduced into modern vocational education in China for decades. And with the development of network technology, computer technology has also risen to a completely new stage of development, and many modern vocational education has achieved the effective integration of computer and vocational education. Artificial intelligence attracts more and more modern vocational educators with its convenience and effectiveness. Artificial intelligence also appears in the theory of modern vocational education in its most basic form, such as fuzzy teaching, software engineering, etc. These are the most primitive forms of artificial intelligence. These theories have also gradually penetrated into modern vocational education, prompting modern education to become daily vocational education such as multimedia education, distance learning, and practical training.

3.4. Continuous Expansion and Extension of Vocational Education and Research

Compared with traditional higher education, vocational education pays more attention to scientific research and practice, which is the characteristic of modern vocational education. With the society's demand for special professional talents, modern vocational education is urgently required to invest in scientific research, especially in the current era of artificial intelligence technology has become the mainstream of social development in the new era, and artificial intelligence has become an important content of modern vocational education. Therefore, these factors provide effective development opportunities for the introduction of artificial intelligence in modern vocational education.

4. Development Direction of Modern Artificial Education Technology and Practical Artificial Intelligence

Judging from the current development status of artificial intelligence technology, the application of artificial intelligence to modern vocational education technology will be the main research direction of future vocational education and artificial intelligence. In particular, the network technology of vocational education resources and integrated distributed intelligent systems are the focus of research. The research of vocational education resource network technology is mainly to take vocational education and practical skills as the main direction, and it is an effective teaching method to simulate vocational education resources on-site through artificial intelligence. The latter is a learning environment for artificial intelligence, that is, the effective unification of various artificial intelligence technologies and various information management technologies. On this basis, an efficient online artificial intelligence learning system is formed to make complex vocational education easy and simple. Although both are the main research directions of artificial intelligence in vocational education, the former pays more attention to the effectiveness of artificial intelligence in modern education. Therefore, network technology of vocational education resources has become the main focus of applied research on modern vocational education. This has certain practical significance for improving the overall teaching quality of modern vocational education in China. In addition, the author believes that to achieve the effective combination of modern vocational education technology and artificial intelligence, it is necessary to further explore the following directions: develop a practical expert system suitable for various modern vocational education technologies, train artificial intelligence professionals with high quality and skills, and explore the effective integration of artificial intelligence and modern vocational education.

5. Conclusion

The characteristics of vocational education determine its special teaching method that emphasizes practicality and professional technology. Artificial intelligence is an effective fusion of modern network technology, information technology, and control technology. If artificial intelligence is applied to modern vocational education, it will greatly improve the level of modern vocational education, and make complex network teaching easy and simple. However, as far as the current status quo is concerned, it seems that it will take some time to achieve effective integration of the two. The reason is that artificial intelligence is scarce in modern vocational education research. Secondly, the
The effective integration of modern vocational education and artificial intelligence requires the exploration and practice of Guangda scholars. Therefore, it is not realistic to apply artificial intelligence to modern vocational education technology.

Acknowledgement
Shanghai vocational college teacher enterprise practice results, (No.: 2018 higher education 6-119).

References
[1] Nie Xunke. Application and development of artificial intelligence in modern vocational education technology [J]. Shaanxi Education (Higher Education Edition), 2008 (02): 37 + 51.
[2] Dilierba · Ke Yimu, Liu Jie, Huang Guan. Application Status and Prospects of Artificial Intelligence Technology in Distance Education [J]. Journal of Xinjiang Normal University (Philosophy and Social Sciences Edition), 2006 (04): 127-130.
[3] Liu Jian. Discussion on the Application of Artificial Intelligence in Network Education [J]. Computer CD-ROM Software and Application, 2014 (06): 251-253.
[4] Feng Yuting, Shi Junhua. Research on the Application of Artificial Intelligence in Network Education [J]. Journal of Hefei Teachers College, 2015 (06): 94-96.
[5] Hou Yan. Application of artificial intelligence in network education [J]. Electronic Technology and Software Engineering, 2016 (19): 261-261.
[6] Feng Yuting, Shi Junhua. Research on the Application of Artificial Intelligence in Network Education [J]. Journal of Hefei Teachers College, 2015, v.33; No.182 (06): 94-96.
[7] Hu Yan, He Jian. Discussion on the Application of Artificial Intelligence in Distance Education [J]. Journal of Hainan Radio and TV University, 2007 (02): 86-90.