

Research on Undergraduate Vocational Education Talent Training Based on the Deep Integration of Artificial Intelligence and Education

Shaobing Ye

Guangdong Business and Technology University, Zhaoqing, 526020, China

Keywords: Artificial Intelligence, Undergraduate Vocational Education, Deep Fusion, Personnel Training

Abstract: The education reform in the new era emphasizes the effective integration between artificial intelligence and education, which promotes industrial upgrading and cultivates outstanding talents to adapt to social development. This paper discusses the deep integration of education and artificial intelligence from the perspective of the comprehensive development of vocational education at the undergraduate level, and discusses the intelligent education mode that conforms to the development of the current era. Undergraduate vocational education should conform to the development of the times, clarify the development opportunities and challenges of the current education reform, and clarify the demand characteristics of the artificial intelligence talent training mode. Improving the quality of classroom teaching from different perspectives, such as professional model, curriculum model and teaching methods, is an important way to get rid of the practical difficulties and deepen the reform of talent training.

1. Introduction

In order to further develop vocational education at the undergraduate level, we should promote the deepening development of education reform in the new era, cultivate excellent vocational talents that meet the needs of the development of the times, and consider the in-depth integration of AI and education.[1] In teaching, we should adjust the existing teaching mode, combine artificial intelligence with the call of the national education reform, and reflect the new mode of vocational education developing towards the undergraduate level. Artificial intelligence is a hot word that has been mentioned in recent years, and it is a manifestation of the change of life by current science and technology. The teaching work of the school deeply guides students to realize the current development trend of the times by integrating the education concept and education method of artificial intelligence, which lays a good foundation for building vocational education talents at the undergraduate level.[2]

2. Analysis on the demand characteristics of artificial intelligence talents

Thinking from the perspective of the characteristics of the current demand for AI professionals, it is found that more and more AI products have come into the public's view with the development of Internet technology. With the application of current big data technology, Internet technology and other

technologies, more AI products can complete high-speed data computing, and can make intelligent responses and judgments in the shortest time. Relatively speaking, AI products have changed the development of all walks of life and brought new changes to people's lives. However, the further development of the AI industry cannot be separated from the promotion of excellent professionals, and cultivating excellent professionals has become an important prerequisite for the development of the AI industry.[3]

From the perspective of education, the cultivation of excellent talents of artificial intelligence is still in a stage of exploration and development. Among them, the training of talents is insufficient and the awareness of talent training is not strong, leading to the unsatisfactory effect of professional talent training. From the analysis of the characteristics of talent training demand, it is found that AI is mainly used in some traditional industries and traditional industries in China to change the operation mode and production mode of traditional industries, and the upgrading of these industries reflects the changes in talent demand positions and talent demand specifications.[4] In order to optimize the regional talent demand structure, it is necessary to strengthen the integration between artificial intelligence and education at the education stage, so that students can form good knowledge learning and ability at school, reflecting the unified development of knowledge integration and refinement, and promoting the integrated development of industry intelligence and mechanization. From the long-term perspective of AI, students are required to have higher learning ability. This includes students' ability to innovate, learn and transfer, and adapt. Only by mastering advanced technology can we further promote the rapid development of artificial intelligence.[5]

3. Status Quo of artificial intelligence undergraduate vocational education Talent training

3.1. Unclear educational objectives

The integration of AI into education has become an important trend in the current education reform, especially for the cultivation of vocational education talents at the undergraduate level, which needs to reflect the new development trend of AI talent cultivation, but there are still many problems in the integration process. First of all, due to the complexity of the types of undergraduate education, the training objectives of students are not clear, and there is a phenomenon of dislocation of training objectives. Due to more applied undergraduate level vocational education, schools are imprisoned by traditional education ideas, and the awareness of vocational education is not strong enough. In the context of the transformation of modern education, talent training lacks foresight, and the goal of adaptive talent training is unclear.[6] Because the vocational education at the undergraduate level and the general undergraduate education belong to different types of education, but many application-oriented colleges and universities downplay the idea of type, ignore the basic characteristics of the undergraduate education level, copy the education method of the general undergraduate or follow the education method of the previous vocational education, resulting in the status quo of mutual separation between talent training and vocational education. In terms of students' training objectives and training concepts, there are still many problems in the artificial intelligence talent training mode due to the lack of pioneering and innovative thinking.[7]

3.2. Lack of cross-border thinking in education and training

The training of AI professionals is a development mode between AI and industrial integration. In the process of education and training, it is necessary to reflect the cross-border integration of AI technology and different industries. Artificial intelligence education needs to reflect the cross-border integration of multi-disciplinary development.[8] Through artificial intelligence technology, outstanding talents in traditional post technology are combined with existing mechanical intelligence

and automation talents, reflecting the innovative mode of comprehensive talent development.[9] At present, AI technicians must have a wide range of basic knowledge in various disciplines, and pay attention to the cultivation of talents' aesthetic, communication, innovation, application and other abilities. However, in the current education model, teaching lacks cross-border thinking, and does not break the barriers of disciplines and specialties in the cultivation of comprehensive talent ability. It is affected by the solidified thinking of disciplines and specialties, and relatively difficult to cultivate highly specialized technical comprehensive talents, which is not in line with the development mode of education integration and excellent talent cultivation in the era of artificial intelligence.

3.3. The curriculum system lacks reform and innovation

The current curriculum education system for AI professionals lacks innovation, and curriculum innovation does not meet the needs of the development of the current AI era. Relatively speaking, the training of AI talents is at an initial stage. In the process of curriculum innovation, it is necessary to integrate AI, craftsman spirit, ideological and political courses into the teaching activities of AI talents' professional courses. However, there are some limitations in the development of the current professional curriculum system, and the secondary development and utilization of textbooks are insufficient.[10] The traditional solidification of teaching materials and teaching is the curriculum education system, lacking the implementation concept of artificial intelligence and education integration. The lack of integration of teaching ideas in the new era in curriculum teaching cannot reflect the innovative era value and craftsmanship spirit of students' development, resulting in more chain reactions and poor effect of students' comprehensive ability training.

4. Talent training strategy of artificial intelligence undergraduate vocational education

4.1. Re positioning the AI talent training target system

Based on the current situation and problems in the process of AI talent training, it is necessary to reposition the goal and specification of talent training, and conduct the specification and positioning of talent training from the basic development goal of vocational education talent training at the undergraduate level. It is mainly to clarify what kind of talents to cultivate as the basic development problem, based on the fundamental task of education of morality and talent, and focusing on the current industrial development of artificial intelligence, the goal of skilled personnel training, the level of vocational education development, the needs of society, and so on. Therefore, the undergraduate level vocational education should carry out the deep integration between AI and education from the perspective of composite excellent skilled talents, so that the talent training can truly face production service management and provide important help for the positioning of AI training. On the macro level, the orientation of talent cultivation can reflect the cultivation of excellent skilled talents with all-round development of morality, intelligence, physique, beauty and labor, and the cultivation of comprehensive talents with innovative consciousness and development ability. Facing the current intelligent development of new formats, talents can have a certain degree of humanistic quality, apply the professional knowledge learned by themselves to practice, and solve the problem of unclear talent training objectives.[11]

4.2. Creating a composite professional education model

By creating a professional education model, taking artificial intelligence as the main education guidance, and combining professional curriculum teaching, it reflects the new development model of new industries. The construction of professional model of vocational education should reflect the

trend of compound development. Through the "1+x" concept of vocational certificate education and the education attribute of undergraduate level, the cross integration between AI education and traditional discipline education should be explored. Actively carry out research and practice of new engineering education, and integrate artificial intelligence education and professional discipline education. Based on the cross-border thinking of education, it comprehensively guides students to develop their abilities in various aspects, reflecting the adaptability between vocational education and discipline education and the pertinence of education.

4.3. Contents of innovative curriculum education system

In terms of curriculum education content, it is necessary to change the existing curriculum education mode in combination with the characteristics of the educational development of artificial intelligence. The curriculum content needs to reflect the secondary development of the traditional curriculum system and the characteristics of intelligent education development. We should set up courses related to general knowledge of artificial intelligence to explain the development trend, opportunities and in-depth learning theory of artificial intelligence industry to students. Courses related to cognition and neural network are offered to lay a good foundation for students' all-round development. The development of intelligent courses has promoted the deep integration of teaching between artificial intelligence and education, and has presented a digital and three-dimensional development model. It has truly realized the full coverage of the educational function of the curriculum, and the basic educational task is to cultivate people by virtue, so as to give play to the educational function of the school, and enhance the craftsmanship awareness of students.

4.4. School-enterprise linkage to build the "artificial intelligence +" compound talent training system

The course plays an important role in cultivating students. It is more important to build a perfect AI curriculum system. It emphasizes the establishment of computing model from top to bottom, and emphasizes the intersection of artificial intelligence and computer in all aspects. In the basic courses, in addition to mathematics, programming, there are mechanics, electromagnetism, quality courses, and some professional courses. At present, domestic universities in artificial intelligence are still in the curriculum in the field of artificial intelligence is still in its infancy. Most universities are based on foreign teaching models, and not a complete curriculum system has been formed.

Therefore, in the face of the new situation of artificial intelligence industry development new requirements, colleges and universities must take moral education as the fundamental task, to "industry demand oriented", "from adapt to service to support lead" as the discipline construction concept, with core technology as the main line, with cutting-edge application for traction, mining artificial intelligence professional knowledge connotation. In order to meet the social needs for AI work and key technologies, schools and enterprises can jointly set up a sustainable curriculum system of "school-enterprise cooperation". The curriculum system covers general education, including ideological and political theory courses, special education courses, etc., laying a solid foundation for the AI subject to expand the knowledge field. The course content also covers professional courses, including professional basic courses, professional core courses, artificial intelligence + courses (involving artificial intelligence technology and application), laying a solid professional core technology foundation for students. Make a good top-level design for the construction of artificial intelligence curriculum system.

According to the requirements of the National Standards for Teaching Quality of Undergraduate Majors in Ordinary Institutions of Higher Learning, and combined with the national development strategy, vigorously promote the deep integration of artificial intelligence and industry, and adapt to

the actual situation of enterprises, the top-level design of the curriculum system has been formulated. Strengthen the foundation of mathematics, strengthen computer thinking, teaching students in accordance with their aptitude, hierarchical training. Establish a basic mathematics course with artificial intelligence as the core; if the AI major students want to have a solid foundation in mathematics, the "artificial intelligence foundation" course must be established to lay a good foundation for the future AI subject. Carry out the construction of basic theories and professional basic courses of artificial intelligence disciplines. According to the basic concepts of artificial intelligence and computing, several basic courses including computer software, hardware, software and other basic knowledge; the core courses of artificial intelligence discipline, combined with the national strategy and the needs of the enterprise industry, cover all fields in the field of artificial intelligence, to lay a solid professional and technical foundation for students.

5. Conclusion

To sum up, the deep integration between AI and education is a major trend in the development of undergraduate level vocational education personnel training. In this process, we need to understand common educational problems, think from the perspective of talent training and innovation system, and set up multiple courses, innovate curriculum education content to realize the comprehensive development of students.

Acknowledgement

Fund Project: Guangdong Business and Technology University Undergraduate Vocational Education Pilot Reform Theory and Practice Research and Planning Project: "Research on Undergraduate Vocational Education Talent Training Based on the Deep Integration of Artificial Intelligence and Education" (Project No.:GDGSGY2020024).

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