Exploring Higher Education Curriculum Reform under the Wave of Artificial Intelligence

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Abstract: Artificial intelligence has triggered a global wave of the times with its breakthrough intelligent technology features such as autonomous learning ability, self-attention, and reasoning ability, which has also led to a huge change in the demand for talents in the society, and various industries are inclined to the composite innovative and high-quality talents with cross-field and multi-disciplinary backgrounds, so that the reform of higher education curriculum empowered by artificial intelligence has become an inevitable trend. It is found that although many colleges and universities have gradually opened general education and professional education on artificial intelligence, the reform of higher education curriculum still faces various problems such as monotonous teaching mode, lagging teaching content, academic ethics and morality. In order to effectively deal with these problems, this paper provides corresponding suggestions from the perspective of expecting the joint efforts and close collaboration between universities and enterprises.

Keywords: Artificial Intelligence; Higher Education; Curriculum Reform; Compound Talents

1. Introduction

Some researchers and scholars believe that the future of artificial intelligence may eliminate some jobs, while some other jobs will be changed or created, it can be said that artificial intelligence has gradually become a key force to promote economic growth, social progress and industrial upgrading, so we need to rethink the way to use technology to solve problems. As an important base for talent cultivation, in order to meet the development needs of the new quality productivity, universities at home and abroad have been using AI to empower the reform of higher education curricula to carry out general education and professional education on AI, with a view to cultivating more innovative talents with cross-field and multi-disciplinary backgrounds. However, the process of AI-enabled higher education curriculum reform is still faced with various problems such as the transformation of educational concepts, monotonous teaching modes, and limitations in the application of technology, which requires the joint efforts of colleges and universities, enterprises, and all walks of life to strengthen cooperation and communication, and to think about the development of higher education curriculum reform under the wave of AI.

2. Artificial intelligence empowers higher education curriculum reform

The development of artificial intelligence provides strong support for the reconstruction of the talent training model, and at present, colleges and universities are urgently required to solve three tasks in order to cultivate "artificial intelligence + X" composite innovative and high-quality talents.

The first is to cultivate professionals in artificial intelligence. At present, many domestic and foreign colleges are carrying out general education in artificial intelligence, expanding professional education in artificial intelligence, expanding the audience of artificial intelligence education, cultivating a group of compound innovative and high-quality talents adapted to the needs of the country, localities, industries and industrial development, and cultivating a new era of workforce for the scientific and technological progress and industrial development of China.

Secondly, cultivate professional composite talents adapted to the background of artificial intelligence. Colleges and universities should not only carry out artificial intelligence professional education and general education, but also broaden the content of artificial intelligence professional education on the basis of the original specialties, and build a mechanism for cultivating talents based on the intersection of disciplines, cultivating "AI+X" top-notch composite talents of various specialties.

Thirdly, cultivate innovative and entrepreneurial talents adapted to the needs of society. Artificial intelligence technology has been rapidly rising since 2017 and slowly penetrating into all aspects of human daily life, including health, transportation, education, medical and

business, etc. Accordingly, the U.S. Bureau of Labor Statistics expects that the number of jobs for data scientists, information security analysts, statisticians, software developers, and other related fields will grow by 25-35% in the next ten years, which urgently requires artificial intelligence to This urgently requires AI to empower the reform of higher education curricula, integrate knowledge transfer into the process of students' discovery and creation of knowledge, and cultivate innovative and entrepreneurial talents who can adapt to the needs of the future society.

3. The dilemma of higher education curriculum reform under the wave of artificial intelligence

3.1 Teaching model not upgraded

Many colleges and universities at home and abroad have upgraded their traditional disciplines, set up artificial intelligence majors, and built artificial intelligence colleges or artificial intelligence research institutes, but there is still a wide range of new curriculum resources are not enough and the problem of unbalanced educational resources, and most of them have not set up a new type of multidisciplinary cross-fertilization of the teaching and research platform of artificial intelligence, which is too much focused on the teaching of theoretical knowledge and lacks the practical application of links between production and education, and the separation of production and education.

3.2 Integration of disciplines is at risk

Although AI has been developing rapidly in recent years, it is very different from humans in terms of learning, thinking, and generating explanatory capabilities, and its ability to make value judgments is no different from that of a child's, which may generate inappropriate or meaningless outputs without warning. Therefore, the current cross-fertilization of AI with other disciplines carries certain risks in terms of personal privacy and data protection, data acquisition, algorithm design, technology development and ethics, as well as the phenomenon of algorithmic bias.

3.3 Disconnect between teaching content and market demand

The development of artificial intelligence technology is rapidly changing, and new algorithms, models and applications are constantly emerging, and the teaching content in higher education often lags behind the pace of the development of these technologies, resulting in a gap between what students learn and the market demand. Although many colleges and universities have begun to try multidisciplinary cross-fertilization teaching, the degree of integration is often not deep enough, and it is difficult for students to combine what they have learned with practical applications, so it is difficult to truly meet the standards of market demand.

4. The Development of Higher Education Curriculum Reform under the Wave of Artificial Intelligence

In the era of artificial intelligence, schools play a crucial role, covering education, scientific research,technology dissemination,as well as ethics and social responsibility. As far as curriculum reform is concerned, in order to meet the actual demand for knowledge and skills of talents in the future market, schools need to track the latest development of AI technology and update the teaching content accordingly; at the same time, deepen the intelligent change of the teaching mode, in addition to the theoretical teaching of the curriculum, increase the practical aspects, the combination of industry and education, and improve the students' practical ability and problem-solving ability; the talents needed by the future market will definitely be the composite innovative talents who are capable of solving complex problems. The talents needed in the future social market must be compound innovative talents who can solve complex problems, so the school should focus on the cultivation of innovative talents in the curriculum reform, and cultivate students' ability to solve problems by comprehensively applying multidisciplinary knowledge.

As the main body of technological innovation, enterprises usually stand at the forefront of technological development. Under the wave of artificial intelligence, the curriculum reform of higher education needs to follow the pace of technological development, which means that the cooperation between schools and related enterprises is a necessary way to meet the market demand in the era of artificial intelligence, so as to introduce the latest technological achievements and cutting-edge knowledge into the curriculum system, and to ensure that the content

of the curriculum is timely and practical; and enterprises can provide advanced experimental equipment and technical platforms for the practice of related courses in schools. Or cooperate with schools to build practice bases.

5. Conclusion

Under the dual background of accelerated technological development and popularization of higher education, talent cultivation as an important mission of universities will face many new challenges in this context, so universities need to reshape their talent cultivation goals to create a new system of talent cultivation that adapts to the context of the times and guarantees the sustainable development and high-quality development of China's talent cultivation under the dual background. At present, domestic and foreign colleges and universities have opened artificial intelligence general courses and professional courses to cultivate "artificial intelligence + X" composite innovative and high-quality talents, to meet the needs of the development of the new quality of social productivity, but the current curriculum reform is still faced with the imperfection of the new model of industry-teaching fusion, academic ethics and the limitations of the application of technology. To cope with the dilemma this requires collaborative cooperation between universities and enterprises and other parties.

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