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Development Path of Labor Education in the Era of Artificial Intelligence in China

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Abstract

This article elucidates the logical relationship between artificial intelligence and the development of labor education in China. Taking the perspective of Marxist labor theory, it points out that the rise of artificial intelligence is an inevitable outcome of the development of social production relations and productivity. It raises new questions and challenges regarding the essence and role of labor. The article emphasizes the new requirements of artificial intelligence for the quality of workers, highlighting new opportunities and challenges for labor education in adapting to future labor market demands, including technological barriers, digital divides, and the innovation of educational systems and institutions.In conclusion, the article proposes a development path for labor education utilizing artificial intelligence technology. It underscores the upgrading of labor education theories, focuses on the application of artificial intelligence technology in labor education practices, and suggests the establishment of a diversified labor education evaluation system. This aims to cultivate students' innovative practical abilities, emphasizing interdisciplinary integration and collaborative mechanisms to collectively promote the development of labor education.

Keywords: Artificial Intelligence; Chinese Labor Education; Marxist Theory of Labor.

1 INTRODUCTION

The widespread application of artificial intelligence technology has led to a profound transformation of forms of labor, shifting from traditional physical labor to intelligent labor, virtual labor, data labor, and other directions. This necessitates workers to possess higher levels of creative thinking and collaborative abilities. Labor education in China is endowed with a special meaning, combining education with productive labor and considering labor education as an essential element in nurturing socialist successors and builders. In the background of the era of artificial intelligence, workers need the ability to adapt to new forms of labor. Therefore, it is imperative to comprehensively recognize the intrinsic connection between artificial intelligence and labor education, fully understand and adapt to the labor education demands of the era of artificial intelligence, and better play a role in cultivating workers more suited to the development of the times.

2 LOGICAL RELATIONSHIP BETWEEN ARTIFICIAL INTELLIGENCE AND DEVELOPMENT OF LABOR EDUCATION IN CHINA

2.1 Product of the Marxist Labor View in the Era

"Labor creates man himself" . From the perspective of the Marxist labor view, Marxism focuses on the impact of social systems and modes of production on labor. It asserts that labor is the foundation of the existence and development of human society. Artificial intelligence, as an advanced technology, not only enhances productivity but also changes traditional modes of production, driving the evolution of production relations, effectively improving labor efficiency, and promoting the modernization of social, economic, cultural, and political development . In this process, the nature, use, and essence of labor have been profoundly affected, posing new questions and challenges to the essence and role of labor. The development of artificial intelligence continues to advance along the track of labor creating people, creating society, and creating value . It reflects the specific embodiment of Marxism's emphasis on the development of productive forces as a driving force for social transformation and the specific manifestation of Marxist labor views in modern development. With the application of artificial intelligence, labor forms become more intelligent and efficient, prompting a reevaluation of labor concepts, value systems, and labor education. There is a need to reexamine the essence of labor and the role of workers. Meanwhile, Marxism argues that innovation is a crucial force driving social development. In the era of artificial intelligence, workers need higher-level abilities, including collaborative skills with intelligent technology and innovative capabilities. Therefore, the rise of artificial intelligence is inherently connected to the basic ideas of Marxism regarding the development of productive forces and changes in labor relations; it is a product of the era of Marxist development of productive forces and transformation of production relations.

2.2 Inherent Connection between Artificial Intelligence and the Development of Labor Education

In Marx's view, tools of labor are created by humans through labor. The rise of artificial intelligence is a major trend in current technological development, closely linked to the demands of the times. The transformation of artificial intelligence technology leads to a significant risk of unemployment for traditional workers, deeply impacting the requirements of the new labor market and professions. The demand for traditional technical occupations and positions related to algorithms and data development engineers is rapidly increasing. The purpose of labor education is to cultivate new types of workers who can adapt to the development of social production. It poses new challenges and opportunities to the philosophy and practical methods of labor education. In the era of artificial intelligence, workers need to possess higher-level intelligence, innovative capabilities, and the ability to adapt to complex technological environments. The core competitiveness of workers no longer relies solely on physical strength or simple machine operation skills. It involves enhancing students' Artificial Intelligence Quotient (AIQ), enabling them to have the ability to use technology to identify and solve problems with artificial intelligence. Labor education must incorporate

the relevant knowledge, skills, and thinking patterns required by artificial intelligence, and it must comprehensively construct a labor education system that reflects the characteristics of the times. It emphasizes the comprehensive qualities of workers, promoting the free and comprehensive development of individuals. The so-called comprehensive development of individuals is "in a comprehensive way, that is, as a complete person, possessing one's comprehensive essence".

2.3New Connotation of Labor Education in the Era of Artificial Intelligence

Labor education plays a role in nurturing individuals through labor, engaging students in educational activities that foster love for labor and the laboring people. It revolves around cultivating the correct labor values as its core, including new labor consciousness, attitudes, and spirit. In the era of artificial intelligence, the essence and main forms of Chinese labor education are undergoing transformation. Labor education needs to keep pace with the progress of the times and meet the urgent requirements of the new era. The concept of labor has evolved from being mechanical and simple to becoming intelligent. While traditional labor education emphasizes the cultivation of basic skills, in the era of artificial intelligence, labor takes on more diverse forms, including virtual labor, data labor, and innovative labor. The aim is to cultivate students' ability to use intelligent technology in different fields. Labor education needs to focus on cultivating students' ability to adapt to artificial intelligence technology, including skills in data analysis, algorithm application, and human-machine collaboration. In the era of artificial intelligence, labor education needs to primarily focus on cultivating creative labor, fostering students' creative thinking, stimulating innovation, enabling them to face various labor challenges in the complex era of intelligence. This involves not only the cultivation of skills but also the holistic development of individuals, including intelligence, emotions, teamwork, and more. It points towards acquiring a social norm and a value base for oneself.

3 OPPORTUNITIES AND CHALLENGES OF LABOR EDUCATION IN THE ERA OF ARTIFICIAL INTELLIGENCE

3.1 pportunities for Labor Education in the Era of Artificial Intelligence

3.1.1Theoretical Innovation of Chinese Labor Education based on Artificial Intelligence Technology

Human understanding and expression of things are not solely dependent on language but more on material and practice. The rapid development of artificial intelligence is leading labor education towards scientific and intelligent cognitive models, shifting from traditional physical labor to a comprehensive education system emphasizing intelligence, innovation, and data application. The theoretical innovation of Chinese labor education based on artificial intelligence technology expands and deepens traditional labor education concepts and methods. It aims to better adapt labor education to the needs of the intelligent era, cultivating capabilities and qualities required for the future labor market. The innovation emphasizes the importance of intelligent labor, virtual labor, and innovative labor, requiring students to undergo in-depth learning of artificial intelligence theory. This involves understanding the application of artificial intelligence in labor, fostering a positive attitude towards intelligent labor, and developing the ability to actively participate. The focus is on promoting a collaborative labor model between humans and artificial intelligence, where labor education not only nurtures independent thinking and problem-solving skills but also emphasizes skills in working collaboratively with artificial intelligence systems.

3.1.2Paradigm Innovation of Chinese Labor Education based on Artificial Intelligence Technology

In the era of artificial intelligence, Chinese labor education is undergoing a profound transformation in educational paradigms, mainly due to the widespread application of artificial intelligence technology. The paradigm innovation aims to break the traditional monotonous pattern and non-verbal cognitive situations of labor education. Through means such as intelligence, personalization, and virtual reality, it promotes multidimensional interaction integration between "present space" and "absent space," constructing a flexi-

ble, dynamic, and contextual embodied learning space tailored to learners' needs. With artificial intelligence technology, labor education can achieve precise personalized teaching based on big data analysis, meeting each student's growth needs with customized learning content and teaching methods. Personalized learning helps stimulate students' interest, enhance learning effectiveness, and unlock labor potential. Virtual reality technology in labor education creates authentic work scenarios, allowing students to practice and deepen their understanding of various labor skills in a virtual environment while reducing real-world safety risks. The innovation brought about by artificial intelligence technology in labor education emphasizes adapting to the needs of the intelligent era, cultivating students' creative problem-solving abilities in the face of unknown challenges, and fostering teamwork skills for collaboration with artificial intelligence systems. The revolution in artificial intelligence technology not only trains labor skills, hones practical abilities, and instills a work ethic but also elevates thinking, creativity, and learning abilities in individuals.

3.1.3Achievement of Goals in Chinese Labor Education based on Artificial Intelligence Technology

Since the founding of the People's Republic of China, labor education has experienced five stages of exploration and innovation, leaps and deviations, regularization and imbalance, integration and weakening, and reshaping and reinitiation. It has consistently adhered to Marxist guidance, aiming to achieve comprehensive human development and gradually building a labor education system with Chinese characteristics. In the era of artificial intelligence, the focus is not only on students' mastery of specific labor skills but also on the cultivation of creative labor capabilities and systematic methodologies. The goal is to nurture comprehensive qualities, innovative abilities, global awareness, and adaptability to future labor challenges, creating a new generation of workers suitable for the times. The achievement of labor education goals is not only a response to the requirements of the era but also an inevitable choice in cultivating new types of workers. Utilizing artificial intelligence technology, such as robots, smart classrooms, virtual reality, and remote collaborative labor platforms, broadens students' perspectives and practical experiences, enabling labor education to integrate better into interdisciplinary knowledge systems. This integration helps students adapt and lead future developments in labor. Based on artificial intelligence technology, labor education transcends national borders, participating in globalized labor cooperation through networks. This allows students to understand various labor practices in different cultures and backgrounds, fostering an international labor perspective, enhancing students' cross-cultural communication abilities and global awareness.

3.2 Challenges of Labor Education in the Era of Artificial Intelligence

3.2.1Development Limitations of Artificial Intelligence Technology Barriers

Firstly, the development of personalized recommendations in artificial intelligence algorithms has limitations in content homogenization. "Precision pushing" confines students' interests and development directions, potentially leading to a narrow-minded focus on knowledge similar to their previous preferences. This may, to some extent, narrow students' thinking, trapping them in an "information cocoon," and exacerbating one-dimensional development. This technological barrier may result in the isolation of disciplines and knowledge, making it difficult for non-technical majors to integrate with intelligent technology. Secondly, due to the rapid development and application of artificial intelligence technology, there is a technological gap between universities, regions, and different social groups. This imbalance will increase the competitiveness of students in the labor market of the intelligent era. Additionally, artificial intelligence technology requires substantial computing resources and high-performance equipment support. Some schools may face problems such as outdated equipment and insufficient funds, restricting their adaptability to the intelligent era's working environment. Furthermore, "artificial intelligence has redefined the way knowledge is created; teachers are no longer the sole source of knowledge or authority". This necessitates higher knowledge and skill requirements for teachers and school management, potentially causing a lack of guidance in labor education for a deep understanding of artificial intelligence technology, affecting the cultivation of students' innovation capabilities in the intelligent era. Some universities, due to limited collaboration channels, may

struggle to access the latest artificial intelligence technology, limiting the practical content and quality of labor education. Finally, the development of intelligent technology may come with a range of ethical issues, such as privacy protection and data misuse. Labor education urgently needs to guide students to be sensitive to these ethical issues and have the ability to handle them correctly.

3.2.2 Evolutionary Risks of Labor Education Value Concepts

In the era of artificial intelligence, the evolutionary risks of labor education value concepts become crucial. Labor education has always been a platform not only for imparting skills but also for shaping the values, life views, and social views necessary for students' comprehensive development. With the rapid development of artificial intelligence, there is a risk of overemphasizing technology itself and neglecting the humanistic care behind labor. Labor is not merely mechanical work; it also encompasses elements such as interpersonal relationships and creative thinking. Students may lack an understanding of humanistic care, with decreasing attention to the pleasantness of subjective interaction and pro-sociality. Labor in the era of artificial intelligence may lead people to focus more on the utilitarian aspects of work, emphasizing the economic benefits of work while neglecting the intrinsic value and personal significance of labor to society. It may even become a means to acquire money rather than a meaningful human activity. Students may lack an understanding of the multiple values of labor, including contributions to themselves, society, and the environment. This erosion affects students' active sensory and rational thinking. With the widespread use of artificial intelligence technology, certain forms of labor may become more prominent while others are marginalized. This could lead students to concentrate only on developing skills in a specific field, overlooking the diversity and multiplicity of labor in other areas.

3.2.3 Organizational Requirements for Labor Education Activities in the Era of Artificial Intelligence

In the era of artificial intelligence, the supply of labor education resources shifts from the "cinema model" to the "supermarket model". Labor education activities face new organizational requirements and challenges. These challenges involve efficiently utilizing massive resources, accelerating knowledge production, and better integrating artificial intelligence technology to ensure students can develop comprehensively through practical experiences. Integrating artificial intelligence technology requires corresponding technological integration, including the construction of educational platforms, the establishment of virtual practice environments, positioning of artificial intelligence technology, and information dissemination. Achieving a scientific cognitive process and addressing issues such as students lacking cognitive foundations and difficulties in embedding into virtual environments are crucial. In the era of artificial intelligence, labor education places a greater emphasis on developing comprehensive abilities, requiring interdisciplinary collaboration and comprehensive integration with other disciplines. These challenges represent a significant hurdle for schools and educational institutions. In the era of artificial intelligence, technological and knowledge updates are rapid, and the content of labor education needs to keep pace with societal needs. Timely updating and maintaining educational content closer to practical societal demands require increased social participation and broader social cooperation and support. In the face of these challenges, labor education needs continuous innovation and adaptation, forming a close collaborative network with various stakeholders to ensure students can achieve comprehensive development in the era of artificial intelligence. It also requires joint efforts from the government, schools, businesses, and other entities to create a more favorable development environment for labor education.

4 DEVELOPMENT PATH OF LABOR EDUCATION IN THE ERA OF ARTIFICIAL INTELLIGENCE TECHNOLOGY

4.1Theoretical Development Path of Labor Education in the Era of Artificial Intelligence

4.1.1Comprehensive Reflection on the Development of Labor Education Theory

The application of technology in the era of artificial intelligence has profoundly transformed the forms of labor. We need a comprehensive theoretical reflection on the development of labor education theory. This involves not only providing a historical interpretation of artificial intelligence as educational content but also contemplating how to achieve theoretical innovation and enhancement in labor education through the empowerment of artificial intelligence technology. Emphasis should be placed on practical-oriented theoretical research, focusing on the application of artificial intelligence technology in labor education practices. It is crucial to explore the promoting role of artificial intelligence in labor education across different fields and levels, forming a new theoretical logic and system that combines theory with practice. In line with the development of artificial intelligence technology, a reexamination of the social status of labor is necessary, awakening and promoting the educational subjectivity of "human". It involves addressing the evolutionary risks in artificial intelligence labor education and establishing a theoretical framework more in line with the requirements of the times, thereby advancing the theoretical innovation of the Marxist labor perspective.

4.1.2Focus on the Paradigm Shift in Labor Education

The era of artificial intelligence imposes higher demands on new types of workers, requiring a reevaluation of the training paradigm of labor education. This involves aligning with the value orientation of labor and cultivating abilities such as innovation, collaboration, and adaptability. Considering the characteristics of artificial intelligence, it is necessary to update the training goals of labor education, guiding students through intelligent labor to correctly understand the contemporary value of intelligent labor. This includes analyzing the differences between "intelligent labor" in mechanical production and the "individual labor" of human-created value. The emphasis should be on fostering students' innovative spirit, teamwork, and self-directed learning abilities, enabling them to better adapt to the job requirements of the intelligent era. In the era of artificial intelligence, with diverse forms of labor, labor education also needs more flexible forms to accommodate this diversity. Exploring and advocating for the diversified development path of labor education, including but not limited to school-enterprise cooperation, online practices, virtual labor, etc., will better address the varied needs of students and enhance the effectiveness of labor education.

4.2Practical Development Path of Labor Education in the Era of Artificial Intelligence

4.2.2Establishing a Diverse Labor Education Evaluation System

With the rapid development of artificial intelligence, its application in labor education will profoundly impact student training. To ensure the diversified development of labor education, it is necessary to establish an evaluation system incorporating quantitative, comprehensive, and formative assessment methods. Analyzing the limitations of the current education evaluation system on labor education, exploring the use of intelligent technologies such as big data, cloud computing, and deep learning for a more comprehensive and scientific evaluation is crucial. Creating personalized "user models" to analyze students' mastery of labor knowledge and skills, as well as the specific circumstances of labor practices, is essential. This includes improving and constructing labor education courses, fostering a collaborative and open innovation social domain, constructing a diversified labor education comprehensive evaluation system, examining the students' ability to apply artificial intelligence technology in practice during labor education, and assessing the overall achievement of the objectives in the management of labor education in the era of artificial intelligence.

4.2.3Intelligent Curriculum Design and Innovative Teaching Methods

Utilizing artificial intelligence technology to develop intelligent curriculum designs and implementing a human-machine collaborative teaching model, where artificial intelligence robots assist teachers in classroom teaching, is a novel approach to better meet the personalized needs of students. Developing intelligent-assisted teaching based on students' academic interests and learning styles to provide personalized learning suggestions, emphasizing students' embodied practices and cognitive development. Using virtual reality (VR) and augmented reality (AR) technologies to create virtual practice environments for students, allowing them to engage in practical operations and problem-solving within simulated scenarios, providing broader practical opportunities.

4.2.4Strengthening Data Labor and Practical Application Abilities

Integrating data science and artificial intelligence technology into teaching practices to cultivate students' abilities to handle and analyze data in real-world work situations, promoting the transformation of labor education from "teaching determines learning" to "learning determines teaching". Through collaboration with enterprises, involving students in real practical projects, and applying what they have learned to real-life situations. Utilizing artificial intelligence technology to create intelligent mentor systems based on students' interests, professional choices, etc., offering targeted advice, providing personalized academic guidance, and career planning suggestions to help students better plan for the future.

4.2.5Encouraging Interdisciplinary Integration and Labor Innovation

Encouraging interdisciplinary integration, with the ability to solve problems using computational methods and technology as the core, combining knowledge from various fields such as computer science, engineering, humanities, and social sciences with labor education. This enables students to better respond to the complex and ever-changing work demands of the intelligent era, fostering students' comprehensive literacy. By collecting students' learning data and feedback information, using big data analysis techniques to monitor and evaluate the process and effectiveness of labor education, optimizing teaching plans in a timely manner, enhancing the quality of labor education, and better integrating artificial intelligence technology to promote labor education in line with the development of the times, cultivating a new type of worker adapted to the intelligent era.

4.2.6Collaboration Among Schools, Enterprises, and Governments

Firstly, establishing joint laboratories and industry-university-research cooperation platforms, promoting closer cooperation between universities and industries, expanding the practical venues for labor education, and providing a platform guarantee for the implementation of school labor education . Sharing advanced artificial intelligence technology and resources to ensure students gain the latest practical experience. Secondly, addressing the issue of insufficient teaching resources by implementing training programs in the field of artificial intelligence, encouraging schools to establish multidisciplinary, interdisciplinary teams, and enhancing teachers' understanding and application levels of artificial intelligence technology. Thirdly, promoting the popularization of artificial intelligence knowledge, strengthening public education, raising awareness of artificial intelligence technology in society, enabling society to better understand its importance in the field of labor, establishing an effective shared operating mechanism to genuinely and effectively guarantee the effectiveness of labor education .

5 CONCLUSION

Labor education is the starting point and foundation of the construction of the national education system, as well as the comprehensive cultivation of morality, intelligence, physical fitness, aesthetics, and labor. The development of artificial intelligence is closely related to the development of labor education in China, presenting new issues and challenges. Through theoretical innovation and the reform of educational paradigms,

labor education in the era of artificial intelligence will have the opportunity to better cultivate students' comprehensive qualities. However, faced with technological barriers, the digital divide, and challenges in the education system, collective efforts are required. Through means such as theoretical innovation, policy innovation, and practical innovation, we can ensure that labor education in the era of artificial intelligence is more fair, comprehensive, and effective.

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