

Exploration into the Construction of Employment Guidance Systems in Application-oriented Undergraduate Universities in China in the Era of Artificial Intelligence

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ABSTRACT

In the era of artificial intelligence, students face both opportunities and challenges in their employment. Artificial intelligence is reshaping the country's economic, educational, and cultural ecosystems. To respond to these changes, universities need to construct an employment guidance system for the AI era, integrating it into the holistic education process that aims to cultivate students' core competitiveness and their ability to respond to the impacts of artificial intelligence. First and foremost, universities should incorporate employment guidance services into the concept of employment-oriented education to ensure that students receive a well-rounded education that includes professional knowledge, humanities, innovation skills, and professional ethics. This involves building a comprehensive employment guidance service system that provides all-around guidance from enrollment to graduation. Secondly, universities should focus on the needs of society for talents, guiding students to actively pay attention to the development of AI technologies. This includes regularly analyzing industry trends, forecasting future talent demands, and timely adjusting teaching content and methods. Additionally, services such as career counseling and skill certification should be offered to help students improve themselves and enhance their employability. Lastly, universities should cultivate a good sense of social responsibility and professional ethics through practical examples. In summary, by constructing a comprehensive and integrated system for employment guidance and career development, universities can help students achieve high-quality employment in the era of artificial intelligence.

Keywords: *Artificial intelligence, Application-oriented undergraduate universities, Employment guidance system, High-quality employment.*

1. INTRODUCTION

The “New Generation Artificial Intelligence Development Plan” highlights the critical importance of studying the influence of artificial intelligence on employment patterns and work modes, as well as the need to explore emerging professions and their skill requirements. The plan emphasizes the immediate necessity to enhance the professional skills of the workforce to meet the demand for high-tech, innovation-driven, and autonomous jobs driven by artificial intelligence advancement in China. The current rapid growth of artificial intelligence development in the country is driving economic transformation, upgrading, and

social progress. This growth is expected to have a gradual deepening impact on students' employment.[1] The issue of students' employment is not only crucial for the national economy and socialist development but also holds significant societal importance in ensuring high-quality employment opportunities for students. Therefore, it is vital to conduct a thorough analysis of the development and application of artificial intelligence in various sectors to understand its impact on students' employment. Based on this analysis, establishing an effective student employment guidance system, enhancing the quality of graduates' employment, and supporting student growth and success are essential goals.

2. THE IMPACT AND CHALLENGES OF ARTIFICIAL INTELLIGENCE ON THE ENTIRE SOCIAL EMPLOYMENT STRUCTURE

Artificial intelligence has become a key force in driving a new round of technological revolution and industrial transformation. Its development and application have sparked widespread concern about machines replacing workers across all sectors. The growth and implementation of artificial intelligence technology will inevitably change the structure of the labor market, reducing the demand for some traditional professions while simultaneously creating new job opportunities. There has been an increased demand for high skills, innovation capability, and interdisciplinary abilities, while the need for simple, repetitive labor has decreased. The changes in work methods brought about by artificial intelligence also pose new requirements for the psychological and social adaptability of workers. Maintaining workers' sense of involvement and satisfaction in a highly automated and human-machine collaborative work environment presents a new challenge.

Firstly, the impact of artificial intelligence on the overall number of jobs is limited. Although the development of AI technology has made some positions redundant, it also simultaneously spawns new industries and employment opportunities. Therefore, when viewed as a whole, this technological advancement does not have a significant negative effect on the total number of jobs available. This perspective highlights the dynamic nature of the job market, where technological progress not only disrupts existing roles but also creates avenues for new types of employment, demanding different skills and competencies. This suggests the importance of adaptability and lifelong learning for the workforce to thrive in an evolving digital economy.[2]

Secondly, the advancements in artificial intelligence technology have had a positive impact on improving job quality.[3] By automating a significant volume of repetitive tasks, AI significantly enhances work efficiency. The application of AI in smart office environments and production processes can optimize working conditions, reduce the intensity of labor, and improve the comfort and safety of work. Moreover, AI's application in remote work and flexible work arrangements can assist professionals in better balancing work with life, thereby improving their quality of life. These improvements signify a

transformation in how work is conducted and valued, emphasizing the importance of mental and physical well-being of employees, alongside productivity. In essence, as AI takes over more of the routine and physically demanding tasks, it allows human workers to focus on more strategic, creative, and interpersonal aspects of work, potentially leading to more fulfilling and meaningful career paths. This transition also underscores the need for continuous skill development and adaptation, as the job market evolves with these technological advancements.

Thirdly, the impact of artificial intelligence on employment structure has shown a pronounced polarization effect. The rapid development and application of AI technology have altered the operational methods of many traditional industries and professions, leading to new changes in the job market and significant adjustments in the employment structure. AI exacerbates the differences between skilled positions, leading to a diversification of employment opportunities. Workers who can master artificial intelligence and related technologies will gain access to higher salaries and better quality job opportunities. However, workers with insufficient professional skills or those in positions heavily impacted by AI may face employment difficulties, leading to a polarization between job skills and job opportunities. This transformation will gradually squeeze the workspace of mid-level skilled jobs while simultaneously promoting the parallel growth of high-income, high-skill positions and low-income, low-skill positions, potentially exacerbating inequality in the job market. High-skill workers are more likely to adapt to emerging professions and benefit from technological advancements, while low-skill workers may face the risk of unemployment or declining incomes.[4] This dynamic underscores the importance of policies and educational programs that can help the workforce transition. It suggests a need for lifelong learning and re-skilling initiatives to ensure workers are not left behind as the demand for skills evolves. Governments and organizations might need to invest in training programs and educational infrastructure to help workers acquire new skills that are in demand in an AI-driven economy, thereby mitigating the polarization effect and fostering a more inclusive job market.

3. THE SUBSTITUTION AND CREATION EFFECTS ON APPLICATION-ORIENTED UNDERGRADUATE UNIVERSITIES STUDENTS' EMPLOYMENT IN THE AGE OF ARTIFICIAL INTELLIGENCE

The development of artificial intelligence has had a dual impact on the employment prospects of students, bringing unprecedented opportunities as well as challenges and risks. The effect of artificial intelligence on application-oriented undergraduate universities students' employment can be divided into the substitution effect and the creation effect, both of which together shape a complex employment landscape where opportunities and challenges coexist.

3.1 Substitution Effect

3.1.1 Increased Unemployment Risk

Although, currently, artificial intelligence has not replaced graduates' jobs on a wide scale, the continuous advancement of technology and the pressure to reduce costs will encourage companies to favor the adoption of robots. As we enter the era of strong artificial intelligence, the scope of substituting workers will quickly expand, and students who fail to improve their skills will face the risk of being replaced.[5]

3.1.2 Uncertain Employment Prospects

The widespread adoption of artificial intelligence technology may lead to unpredictable complex employment dilemmas. Furthermore, when artificial intelligence masters professional skills and operates at a lower cost, students in related fields may be replaced on a large scale. This requires students to possess a strong ability to psychologically adjust to employment situations.

3.1.3 Continual Skill Updating Is Required

The future labor market will demand that workers frequently change job positions, necessitating mastery of transferable job skills.[6] Students must engage in continuous learning and enhance their core skills to maintain their competitiveness in the job market.

3.2 Creation Effect

3.2.1 Human-Machine Collaboration Model

In future work environments, the human-machine collaboration model will become a mainstream trend. Through deep integration of laborers with intelligent technology, this model will greatly optimize workflow, reduce working hours, and alleviate employees' psychological and physiological stress, thereby enhancing overall work efficiency and personal job satisfaction. The core of this model lies in fully leveraging the computational power and automation features of machines to complement and expand human creativity, decision-making, and analytical abilities.

3.2.2 Innovation Capability Becomes a Key Advantage

University students, who possess the capability to execute complex and innovative tasks, will maintain a certain advantage. This emphasizes that as AI continues to evolve and automate more routine tasks, the value placed on human creativity, complex problem-solving, and innovative thinking becomes more pronounced. In industries where innovation drives growth, highly educated individuals who can blend creative thought with technical skills will find themselves at a competitive edge. The development of these skills, often nurtured through advanced education, positions them to lead, create, and innovate in ways that AI cannot replicate.

3.2.3 Creating New Opportunities and Positions

Artificial intelligence is poised to create a variety of new jobs that are currently hard to predict.[7] As outlined in the "New Generation Artificial Intelligence Development Plan," AI is expected to significantly drive industrial growth, offering a vast array of employment opportunities for university graduates. This expansion goes beyond merely replacing existing jobs with automation; it involves the evolution of entire industries and the emergence of fields that leverage AI technologies. For university graduates, this shift means an increasing demand for roles that require an understanding of AI and its applications, including jobs focused on developing, managing, tuning, and applying AI systems across different sectors. Additionally, the integration of AI into

various industries will necessitate roles dedicated to ethical considerations, privacy protection, and AI regulation, thereby expanding the job market in unforeseen directions. This trend highlights the importance of adaptability, lifelong learning, and the acquisition of skills that enable individuals to work alongside these evolving technologies.

4. BUILDING A COMPREHENSIVE EMPLOYMENT SYSTEM FOR APPLICATION-ORIENTED UNDERGRADUATE UNIVERSITIES IN THE AGE OF ARTIFICIAL INTELLIGENCE

In the era of artificial intelligence, constructing a comprehensive employment system for application-oriented undergraduate universities requires a combination of measures aimed at enhancing students' competitiveness in the job market and meeting the future demands of the labor market. These application-oriented undergraduate universities should integrate employment guidance services into their holistic education strategies, combining them with professional courses to provide education and training that match the needs of the AI era, thus helping students succeed in the future job market and creating a coherent system of employment guidance. By building a comprehensive employment system, students are nurtured to possess skills and comprehensive qualities that are not easily replaced by AI, improving their innovation capabilities, critical thinking, interdisciplinary collaboration abilities, and foundational knowledge in AI. This initiative aims to ignite their passion for lifelong learning, encourage the concept of lifelong education, and help graduates keep pace with technological and industry developments.

4.1 Building an Integrated Employment Guidance System

4.1.1 Strengthening the Construction of Specialized Employment Guidance Teams

Currently, the number of employment guidance teachers in many application-oriented undergraduate universities is insufficient, and they often rely on part-time or outsourced teachers. This cannot meet the country's goal of transforming into a human resources powerhouse, nor can it effectively address the challenges of the artificial

intelligence era. Therefore, application-oriented undergraduate universities must prioritize the construction of employment guidance teams, creating a team of professional, full-time employment guidance instructors. By establishing specialized institutions to train teams of experts focused on researching the employment patterns and trends of the artificial intelligence era, the professionalism of employment guidance can be enhanced.

4.1.2 Establishing a Comprehensive Vocational Competence Curriculum System

Employment guidance should not be limited to classroom teaching and individual counseling but should significantly increase practical activities, focusing on cultivating students' professional competence, especially abilities that are not easily replaced by artificial intelligence. Application-oriented undergraduate universities should offer a broad range of job capability and professional competence enhancement courses, utilizing diverse teaching methods such as group counseling and vocational adaptability training. This approach aims to improve students' communication abilities, teamwork, and other key general skills, thus fully preparing them for the challenges of the workplace in the era of artificial intelligence.

4.1.3 Building an Employment Dynamics Monitoring System Based on Big Data

In order to gather comprehensive employment information, application-oriented undergraduate universities can utilize big data technology to establish a comprehensive employment dynamics monitoring system for continuous tracking and analysis of the job market from both corporate and student perspectives. By establishing early warning mechanisms and employment risk management, continuously study employment patterns and trends, timely adjust teaching and training plans, universities can ensure that their vocational education aligns with market demands. At the same time, developing artificial intelligence employment guidance products based on the person-job matching model can provide personalized employment guidance services. This approach helps students obtain precise employment information, maximizing the creative effects brought about by artificial intelligence while minimizing the negative impact of its substitution effect.

4.2 Constructing an Integrated and Comprehensive Employment Curriculum System

4.2.1 Requirements of Creating an Integrated and Comprehensive Employment Guidance Curriculum System

Creating an integrated and comprehensive employment guidance curriculum system requires the design of a comprehensive and coordinated plan that fully covers all aspects of job preparation and integrates them organically. First, a multi-dimensional course design is adopted, including vocational awareness education, practical skills training, enhancement of practical experience, and guidance on occupational mental health, ensuring students are prepared in multiple aspects. Then, enhancing interaction and feedback through one-on-one career planning guidance, industry expert lectures, and peer help groups, promotes active learning and practice among students. At the same time, it is necessary to keep the curriculum updated in a timely manner, tracking the latest trends in the job market and actively exploring the application of new technologies, such as artificial intelligence and big data in job guidance, to improve educational efficiency and specificity. Last but not least, the curriculum system also should focus on personalization and diversification, so that can provide customized guidance services and adopt a variety of teaching methods to accommodate students with different learning styles. Through such an educational system, the aim is to enhance students' competitive edge in employment, help them adapt to the changing workplace environment, and fully realize their potential.

4.2.2 Strengthening Vocational Ideal Education

It is particularly necessary to conduct proper vocational ideal education in a timely manner for some students who lack a sense of professional responsibility, lack motivation to strive, and have misunderstandings about the standards of success. It is important to guide students to establish a positive work attitude and a strong sense of social responsibility, and to make contributions to the sustainable development of society. In addition, students should be encouraged to develop innovative thinking and cultivate the ability to solve problems with a future-oriented approach. At the

same time, the importance of lifelong learning should be emphasized to enable students to adapt to the continuous changes in technology and professional environments, and to actively adapt to and even lead the trend of technological development. While cultivating students' mastery of artificial intelligence and related technical skills, it is also important to strengthen the education of humanistic spirit and professional ethics, help students understand the social impact and ethical responsibilities of technological development, and promote the development of social productivity as the ultimate pursuit of personal career, which not only promotes the comprehensive growth of students but also has a profound impact on the future development of the country.

4.3 Constructing an Employment Service System Oriented to Social Needs

Facing the rapid development of artificial intelligence in the new era, application-oriented undergraduate universities should closely pay attention to the needs of the future talent market and deeply integrate core quality education into the talent training system. This practice is crucial for cultivating future leaders of scientific and technological innovation and promoting a strategic transformation from "Made in China" to "Created in China" based on maintaining a strong foundation in manufacturing. Application-oriented undergraduate universities need to foster forward-thinking in students to meet the demands of high-quality economic development and the great rejuvenation of the nation.

- Adopting the teaching philosophy of "Teaching for the Unknown," university faculty should guide their instruction toward preparing students for a rapidly evolving future, particularly in light of technological advancements like artificial intelligence (AI). This entails an organic integration of forming values, transferring knowledge, and fostering skills to cultivate students' core competencies, especially in areas unlikely to be overtaken by AI. Effective strategies include fostering critical thinking and problem-solving abilities, encouraging adaptability and lifelong learning, promoting emotional intelligence and interpersonal skills, emphasizing interdisciplinary learning, encouraging innovation and creativity, developing ethical judgment and integrity, and enhancing cultural awareness and a global perspective. By focusing on these

areas, educators can prepare students not just for today's job market but for unforeseen future opportunities and challenges, ensuring graduates are resilient, adaptable, and capable of leading in an AI-dominated future by leveraging their uniquely human capabilities.

- In the process of constructing "first-class" undergraduate courses, it is crucial to strengthen the integration of professional knowledge with artificial intelligence (AI). This means incorporating AI technologies into various disciplines such as management, economics, and engineering, thus facilitating a deep integration of these fields with AI technology. This approach not only represents an embrace of innovation and technological change in the field of education but also serves as an important step in the deep-seated reform of the supply side of professional education for application-oriented undergraduate universities. By integrating AI, education can not only enhance the practicality and foresight of academic studies but also provide students with up-to-date skills and knowledge, enabling them to adapt to rapidly changing work environments and technological requirements. Furthermore, this integration can promote the development of students' innovative thinking, allowing them to use advanced technologies like AI to solve real-world problems in their future careers, thereby driving societal and economic development.
- To cultivate students' all-rounded intelligence in the development of new engineering, business, and humanities disciplines, it's essential to focus on comprehensively improving students' IQ, emotional intelligence (EQ), adaptability to artificial intelligence, and information retrieval skills. This involves strengthening students' capabilities in self-directed learning, adaptive learning, and learning in bite-sized pieces. Simultaneously, students should be motivated to embrace the concept of lifelong learning, preparing them to meet the various challenges presented by emerging industries, business models, and patterns.
- In the education of students, emphasis should be placed on integrating soft and hard knowledge to foster creativity, work attitude, and a sense of social responsibility, thereby helping students build their unique knowledge frameworks. This includes not only the emerging and forming soft

knowledge but also the established hard knowledge. Through such comprehensive knowledge education, it ensures that students are not only able to adapt to the changes brought about by the AI era but also actively participate in the development of this field, leading its direction forward.

5. CONCLUSION

In summary, by aligning with the future employment skills demanded by the AI era, effectively helping students to adapt to the challenges of the AI era, and cultivating talents who are both highly skilled and possess a strong sense of social responsibility, contributes to the development of society and the economy. Achieving high-quality employment not only meets the actual needs of students but is also a key task in cultivating qualified constructors and successors for the new era of socialism.

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