Digital Transformation of Human Resources Management in the Era of Artificial Intelligence

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Abstract

In the era of artificial intelligence, higher education human resource management faces new opportunities and challenges. As an important place for knowledge inheritance and innovation, the level of human resource management in universities is crucial for their development. The digital transformation of human resource management aims to break the limitations of traditional management models through digital means, achieve efficient information circulation and sharing, thereby improving management efficiency, and provide more high‑quality and personalized services for teachers and students. This article analyzes the necessity of the digital transformation of human resource management in universities, discusses the challenges faced by the digital transformation of human resource management in universities, and proposes corresponding transformation strategies to improve the level of human resource management in universities.

Keywords: Artificial Intelligence, Human Resources Management, Digital Transformation, Literature Analysis

Introduction

Currently, artificial intelligence is profoundly changing the operation models of various industries and fields. As an important place for knowledge inheritance, innovation, and talent cultivation, the human resource management of universities is inevitably deeply affected by artificial intelligence.

Digital transformation is a high‑level transformation based on digital transformation and digital upgrading, touching the core business of the company, aiming to create a new business model. It is in line with the trend of technological revolution and industrial transformation, deepening the application of the new generation of information technology, stimulating the innovative driving potential of data elements, and creating

a process to enhance the survival and development capabilities in the information age, and realizing transformation and upgrading and innovative development.[4]

The traditional human resource management model of universities often relies on manual operations and experience-based judgments, and it has problems such as low efficiency, insufficient accuracy, and a lack of personalized services.[5]

With the expansion of university scale and the increase in management affairs, the traditional human resource management model is no longer able to meet the new demands of modern university development, and digital transformation has provided a new opportunity for university human resource management. With advanced technical means, universities can effectively improve the efficiency and accuracy of human resource management and provide personalized services.[6]

Therefore, exploring the digital transformation of university human resource management is of great significance in promoting the healthy and stable development of universities.

With the continuous deepening of smart campus construction, the phenomenon of information islands within universities is gradually eliminated, and data resources are efficiently integrated and utilized. This not only provides more comprehensive and accurate decision‑making support for university management, but also lays a solid foundation for the digital transformation of human resource management.[7]

Continuously breaking through traditional management models and concepts, actively improving human resources management levels, it can be seen that the human resources management of colleges and universities is of great significance in enhancing the comprehensive strength of colleges and universities and promoting the improvement of internal management efficiency.[8]

This study mainly adopts the literature analysis method to examine the application, challenges, and methods of digital transformation in university human resource management in the era of artificial intelligence.

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[4] Zhang, J., & Chen, Z. Exploring human resource management digital transformation in the digital age. **Journal of Knowledge Economics** (2023):1-17.

[5] Guo Shasha. Research on the Realistic Dilemmas and Countermeasures of Human Resources Management in Colleges and Universities, **Economist**07(2022): 259-260.

[6] Su Wenguang & Deng Shan. Exploration of the Reform Path of Personnel Management in Higher Education Institutions in the New Era. **Journal of Guangdong AIB Polytechnic College**01(2022):53-57.

[7] Jingchen Chen.The Digital Transformation of Human Resources Management in Colleges and Universities under the Framework of Smart Campus. **China Strategic Emerging Industries**29(2024): 66-68.

[8] Wang Yuzhi.Exploring the Deepening Transformation of Personnel Management in Colleges and Universities from the Perspective of the Concept of Development.**China Market**36(2017):104-106.

1. The necessity of digital transformation in human resource management in colleges and universities in the era of artificial intelligence

With the help of an intelligent employee service platform, universities can provide planning and advice for the professional development of their staff. Specifically, the platform can combine information such as employees' educational background, work experience, hobbies, and career goals to plan personalized career development paths for them. For example, for the teacher group, the platform can recommend suitable research directions to help them achieve breakthroughs in the academic field; provide development opportunities for teaching positions to help teachers improve their teaching abilities; introduce interdisciplinary cooperative projects to teachers, etc., providing strong support for their personal growth and professional development.

1.1 Enhancing Management Efficiency

In traditional recruitment processes, manually screening resumes is a very tedious and time-consuming task. However, the application of artificial intelligence technology has realized the automation of resume screening, greatly improving the efficiency of human resource management. Among them, natural language processing algorithms can quickly identify key information such as education background, major, and work experience in resumes, and accurately match them with job requirements, thereby greatly shortening the time for resume screening.[9]

In terms of attendance management, traditional sign‑in and clock‑in methods often lead to issues such as proxy signing and missed signing, while intelligent attendance systems adopt technologies such as facial recognition, fingerprint recognition, or electronic positioning to record employees' attendance in real‑time and accurately. At the same time, intelligent attendance systems can also automatically count and analyze attendance data, reducing errors that may occur during manual statistics, thus significantly improving management efficiency.

In addition, human resource management in colleges and universities involves various types of data, including employee performance, training, salary, and other aspects. By applying big data analysis technology, colleges and universities can predict human resource needs based on their own development strategies, discipline construction requirements, and personnel flow in previous years, thus planning recruitment, training, and personnel allocation in advance, making human resource management more scientific and efficient.

1.2 Improving Management Precision

In the field of human resources management, artificial intelligence plays a significant role. In the personnel recruitment process, artificial intelligence can accurately screen out the most suitable talents from a large number of applicants based on specific job requirements.

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[9] Zhang Jianguo. Exploration on the Digital Transformation of Human Resource Management in Private Colleges and Universities in the Era of Artificial Intelligence. **Market Weekly**37(2024):183-186.

For example, when hiring teachers, universities can use artificial intelligence technology to screen out outstanding talents who not only have a solid professional knowledge base but also possess rich teaching experience, good teamwork spirit, and innovative capabilities, thus avoiding omissions and biases that may occur in traditional screening methods.

At the same time, in the aspect of training needs analysis, artificial intelligence also shows remarkable advantages. It can conduct in‑depth analysis of various data, such as employees' work performance, knowledge and skill levels, and career development plans, to clearly identify the training needs of employees in different positions. For example, if a specialized course teacher lacks knowledge reserves in a new academic field, the university can apply artificial intelligence technology to recommend appropriate online or offline training courses for them. This not only helps to improve teachers' professional quality and abilities but also solves the problem of traditional single training models that waste resources and cannot meet the actual needs of employees.[10]

1.3 Promoting Personalized Services

Through intelligent employee service platforms, employees can quickly query information such as salary and welfare, title evaluation progress, and training arrangements without having to visit various departments or search for documents. At the same time, this platform can provide personalized reminder services based on the employee's personal settings. For example, before the title evaluation begins, the platform will timely release information to remind teachers to prepare relevant materials; on the employee's birthday or when they reach a certain work anniversary, the platform will send personalized greetings, making employees feel cared for and valued.

In addition, with the help of intelligent employee service platforms, universities can provide career development planning and advice for employees. Specifically, the platform can combine the employee's educational background, work experience, hobbies, and career goals to plan personalized career development paths. For example, for the teacher group, the platform can recommend appropriate research directions to help them achieve breakthroughs in the academic field; provide teaching position development opportunities to help teachers improve their teaching abilities; introduce interdisciplinary cooperation projects to teachers, providing strong support for their personal growth and career development.

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[10] Wang Jun. Analysis of Innovative Human Resource Management in Universities in the Era of Digital Economy.**Sichuan Labor Security**06(2024):122-123.

2. Challenges Faced by the Digital Transformation of University Human Resource Management in the Era of Artificial Intelligence.

2.1 Challenges in the Application of Technology

During the process of human resource management transformation, universities need to integrate various artificial intelligence technologies, such as the artificial intelligence screening system in the recruitment process, which requires the application of natural language processing, machine learning, and other technologies. These technologies collaborate to complete resume screening more efficiently and accurately. However, the technical solutions provided by different technology suppliers may not be compatible, making the selection of technology more challenging.

When selecting the appropriate technology and integrating it into the existing human resource management system, universities must comprehensively consider the compatibility, stability, and interconnectivity with other management systems. Only by ensuring seamless integration and collaborative work among systems can the effectiveness of artificial intelligence technology be fully realized.

At the same time, with the continuous development of artificial intelligence technology and the continuous emergence of new algorithms and models, universities must closely monitor the situation of technological updates to ensure the advancement of human resource management. However, technological updates often come with increased costs and a greater need for personnel training, which presents a significant challenge for universities. Universities need to make use of limited resources, balance technological updates with actual needs, and explore development paths suitable for themselves.[11]

2.2 Challenges in Personnel Concepts and Abilities

Currently, some human resources managers in universities still adopt traditional human resources management methods, lacking sufficient understanding of the necessity and advantages of digital transformation. They may have a "fear of technology" mindset, worrying that new technologies will replace their jobs, or believe that the new digital management systems are too complex, not as simple and convenient as traditional methods. To change this traditional concept, universities need to strengthen guidance, through regular training, organizing exchanges, and other ways, to help human resources managers understand the actual significance and value of digital transformation.

At the same time, digital transformation also puts forward new requirements for the digital technology capabilities of human resources managers. They need to have the corresponding digital technology literacy. However, currently, some universities' human resources managers lack computer operation skills, and their level

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[11] Zeng Ge,Leng Dejun, Gao Jiawei, et al. Research on the Digital Transformation of Human Resource Management in Private Colleges and Universities under the Background of Big Data.**Economist** 06,(2024):204-206.

of informatization is not high. In the process of promoting the digital transformation of human resources management, they are unable to operate new digital tools proficiently, or find it difficult to participate in the design and optimization of digital systems. To solve this problem, universities should conduct targeted skill training to enhance the digital technology capabilities of human resources managers, in order to promote the digital transformation of human resources management.

2.3 Challenges in Data Security and Privacy Protection

University human resources management involves many sensitive data, including employees' salaries, personal health information, scientific research achievements, etc. In the process of promoting digital transformation, these data will be stored in the cloud or digital systems, which are prone to security risks such as network attacks and data leaks. Once data is leaked, the personal interests of employees and the reputation of universities may be seriously damaged.

In addition, with the application of artificial intelligence technology in human resources management, how to protect employee privacy while utilizing data has become an important issue. For example, when analyzing training needs through employee training data, universities must ensure that they do not leak personal privacy information of employees. This requires universities to establish a sound data privacy protection system and mechanisms, with clear specifications and regulatory measures at all stages from data collection, storage, use to sharing, in order to ensure data security and protect employee privacy.

3. Strategies for the Digital Transformation of Human Resource Management in Universities in the Era of Artificial Intelligence

3.1 Strengthening the Construction of Technical Infrastructure

Universities need to increase capital investment to build an artificial intelligence management platform with functions such as personnel recruitment, training, and performance management.[12]

This platform should have good compatibility, able to integrate advanced technologies and software tools from different suppliers, ensuring seamless connection of data from different recruitment software and the ability of the training system to work in coordination with the performance evaluation system. At the same time, universities should strengthen the stability of the platform, through establishing a sound data backup and recovery mechanism and a network security protection system, etc., to ensure the stability of platform operation, thus avoiding the impact on the normal operation of human resource management due to system failures.

Additionally, universities should establish a special technical update fund for updating the artificial intelligence technology in the platform; at the same time, they should cooperate with external technology research

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[12] Xue Yibing. Exploration of the Digital Transformation Path of Human Resource Management in Universities. **Assets and Finances in Administrative Institutions** 10 (2024):112-114.

and development institutions to introduce new technologies in a timely manner, in order to improve the level of intelligence in human resource management, making human resource management more efficient and accurate.

3.2 Promoting the Transformation of Personnel Concepts and the Enhancement of Ability

Universities should carry out digital management training for human resource management personnel, inviting technical experts to explain the application principles, advantages, and development trends of artificial intelligence in human resource management. Through professional interpretation, human resource management personnel can gain a deeper understanding of the core points of digital management and master the application methods of related technologies. At the same time, universities need to carry out publicity and education activities through internal meetings, lectures, and other means to promote the importance of digital human resource management to all employees, in order to eliminate employees' doubts about digital transformation and guide them to change their thinking and concepts. Universities should recruit composite talents who understand both human resource management and digital technology to enrich the human resource management team.

Furthermore, universities can also encourage human resource management personnel to form interdisciplinary teams with information technology professionals, jointly develop digital transformation plans for human resource management suitable for universities, and promote mutual learning and progress between the two parties in practice, thus enhancing the digital technology capabilities of relevant personnel and promoting the transformation of university human resource management towards digitalization and intelligence.

3.3 Improving Data Security and Privacy Protection Mechanisms

Universities need to establish a data security management system, formulate strict data security management specifications and standards, to regulate the data collection, storage, use, and sharing processes. At the same time, universities should classify and grade data management, taking different security protection measures according to the sensitivity of the data. For example, for highly sensitive data such as employees' salaries and health conditions, universities should encrypt the storage and set strict access control permissions to prevent data leakage.

Additionally, it is crucial to improve the data privacy protection mechanism. During the process of data mining and analysis, universities should adopt anonymization, blurring, and other technical means to protect the privacy of employees, and clearly inform employees of the purpose, scope, and methods of data use; establish a data privacy supervision mechanism, regularly review the situation of data privacy protection, so as to timely discover and solve existing problems, ensuring the effective implementation of data privacy protection work and thus ensuring the security of human resource management data.

3.4 Optimizing Human Resource Management Processes and Systems

Universities need to optimize human resource management processes according to the requirements of digital management. Taking the recruitment process as an example, universities should combine the traditional face‑to‑face interview with online virtual interviews and intelligent assessments to build a new recruitment

process. Online virtual interviews can break the regional restrictions, and intelligent assessments can scientifically analyze the abilities of applicants, while simplifying the application process, thus improving recruitment efficiency.[13]

In terms of performance management, universities should use artificial intelligence technology for real-time performance tracking and intelligent evaluation, changing the previous regular evaluation model, to improve the timeliness and accuracy of evaluation. In addition, universities need to formulate human resource management systems that are compatible with digital transformation. For example, in terms of employee training, universities need to establish a training credit system based on the digital human resource management system, clearly defining the completion indicators of employee training tasks, to encourage employees to actively participate in training; in terms of employee assessment, universities need to clearly define data-driven assessment criteria and weights to ensure that the results of digital management can be reasonably applied, thus improving the overall effectiveness of human resource management.

Conclusion

In the era of vigorous development of artificial intelligence, digital transformation has been deeply integrated into the field of human resource management, becoming a key path for various organizations to enhance their competitiveness. For universities, as the core battlefield for knowledge inheritance and innovation, their level of human resource management directly relates to their own development prospects.

This article integrates multiple related studies, using the method of literature research, and deeply analyzes the importance, application models, challenges, and coping strategies of digital transformation in human resource management. In terms of the practice of digital transformation in human resource management in universities, it reveals the development trends through systematic analysis, providing comprehensive theoretical and practical references for the digital transformation of human resource management, and helping organizations to improve management efficiency and enhance competitiveness.

Focusing on the digital transformation of human resource management in universities, this is not only an inevitable choice to adapt to the development of the times but also an effective means to break the limitations of traditional management models. With the help of digital technology, it can achieve efficient information circulation and sharing, thereby improving management efficiency and providing more high‑quality and personalized services for teachers and students.

The article also further analyzes the necessity of digital transformation in human resource management in universities, and deeply discusses the challenges faced during the transformation process, such as the

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[13] Li Hongdan. Challenges, Opportunities and Optimization Paths of Enterprise Digital Transformation and Human Resource Management. **China's Collective Economy** 10 (2024):97-100.

complexity of technology application, the mismatch between personnel concepts and abilities, and the difficulties of data security and privacy protection, and proposes corresponding transformation strategies, including strengthening the construction of technical infrastructure, promoting the transformation of personnel concepts and the enhancement of abilities, improving data security and privacy protection mechanisms, and optimizing human resource management processes and systems, aiming to effectively improve the level of human resource management in universities and promote the continuous and healthy development of universities.

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