Teaching Application and Interactive Learning Design of Artificial Intelligence in Human Resource Management Courses in Colleges and Universities

Lin Li

Business School, Dongguan City University, Dongguan, China
linli@dgcu.edu.cn

Abstract: With the swift advancement of artificial intelligence, its role in higher education is expanding significantly, particularly in refining curriculum content, automating assessments, and tailoring learning experiences, demonstrating immense promise. As a key discipline aimed at shaping future managerial professionals, human resource management education in universities encounters obstacles such as monotonous instructional approaches, limited engagement, and challenges in precisely evaluating student progress. This paper delves into the integration of AI in this domain, emphasizing the enhancement of course material through intelligent optimization, the establishment of an AI-driven interactive learning framework, and the implementation of adaptive learning trajectories alongside automated evaluation mechanisms. Findings indicate that AI not only bolsters instructional effectiveness but also fosters richer teacher-learner interactions and amplifies educational outcomes. Additionally, this paper examines the constraints of AI-driven pedagogy and envisions its prospective trajectory.

Keywords: Artificial Intelligence, College Teaching, Human Resource Management, Interactive Learning, Smart Teaching

1. Introduction

As a fundamental branch of management studies, human resource management courses in higher education institutions are designed to equip students with expertise and hands-on capabilities in workforce planning, talent acquisition, performance oversight, employee development, and training. However, conventional instructional approaches exhibit notable shortcomings in curriculum design, student engagement, and learning evaluation. Predominantly reliant on theoretical lectures with minimal interactive components, traditional pedagogy often struggles to ignite students' enthusiasm for learning or cultivate their ability to conduct independent inquiry[1]. Moreover, assessing students' comprehension and academic progress with precision remains a challenge, thereby constraining the overall effectiveness of instruction[2].

With the accelerating progress of artificial intelligence (AI) technology, its integration into education is becoming increasingly sophisticated, paving the way for transformative advancements in university-level teaching[3]. Through the application of natural language processing, machine learning, and big data analytics, AI has the capacity to refine instructional content, enhance classroom engagement, and enable personalized learning pathways along with intelligent evaluation mechanisms[4]. These innovations not only enrich students' educational experiences but also alleviate educators' workload, fostering a more streamlined and intelligent teaching process.

This paper examines the role of artificial intelligence in reshaping human resource management education in universities, focusing on AI-driven curriculum enhancement, the development of interactive learning frameworks, and the implementation of adaptive learning strategies and assessment methods[5]. By dissecting the specific mechanisms and challenges associated with AI-supported instruction, this study aims to offer fresh perspectives on pedagogical innovation in human resource management courses while envisioning future trajectories for its advancement[6].

2. Application and Development of Artificial Intelligence and Virtual Reality in Education

2.1. The current situation of the application of artificial intelligence in teaching in colleges and universities

In recent years, the incorporation of artificial intelligence technology into higher education has expanded significantly, serving as a powerful catalyst for pedagogical innovation in universities. AI not only refines instructional content but also enhances interactive engagement in teaching, thereby improving both instructional efficiency and learning outcomes[7]. With advancements in deep learning, natural language processing, and big data analytics, AI's role in education has steadily diversified, extending its influence to classroom instruction, learning evaluation, intelligent tutoring, and beyond[8].

Artificial intelligence plays a pivotal role in the refinement of course content. Leveraging machine learning and natural language processing, AI enables automated structuring of educational materials, intelligent recommendation of instructional resources, and the generation of personalized learning content. AI-driven recommendation systems can analyze students' learning behaviors and performance data to identify and provide the most suitable educational materials, empowering learners to acquire knowledge more effectively. At the same time, AI can also assist teachers to improve curriculum design, so that the teaching content is more in line with the personalized needs of students, as shown in Figure 1:
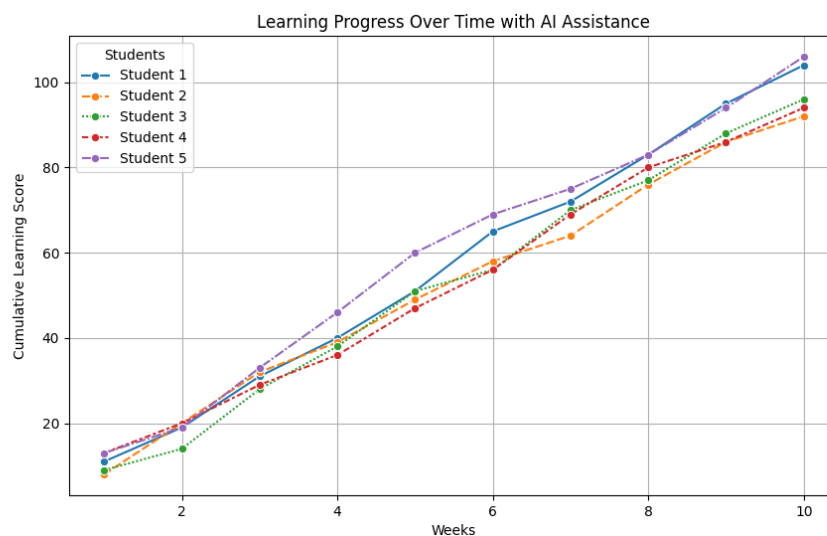

Figure 1 Learning Progress Over Time with AI Assistance

Artificial intelligence exhibits significant promise in intelligent assessment and learning analytics. Traditional evaluation methods predominantly depend on manual grading by educators, which is inherently subjective and often entails prolonged feedback cycles[9]. AI-driven assessment systems, however, can analyze students' learning performance in real time through automated grading mechanisms and behavioral data analytics, offering precise, data-informed learning recommendations[10]. Additionally, AI-powered adaptive testing dynamically adjusts question difficulty based on a student's proficiency, ensuring that assessments are more personalized, targeted, and scientifically grounded, ultimately enhancing their effectiveness.

AI also plays a crucial role in fostering interactive learning environments. The integration of intelligent Q&A systems, virtual instructors, and AI-powered teaching assistants has significantly enriched classroom engagement. Natural language processing-based Q&A platforms can instantly respond to students' queries, boosting learning efficiency, while virtual instructors and AI teaching assistants provide round-the-clock tutoring, elevating the overall learning experience. These innovations not only enhance students' autonomy in learning but also encourage more dynamic and meaningful interactions between educators and learners.

Artificial intelligence is driving a paradigm shift in university teaching, steadily advancing the intelligence and efficiency of educational models. While challenges such as high technological costs and data privacy concerns persist, continuous advancements in AI are paving the way for its deeper integration into higher education. To fully harness its potential, universities should actively explore and

implement AI-enhanced instructional strategies, striving to optimize teaching quality and student engagement while laying a robust foundation for the future of education.

2.2. Teaching design of artificial intelligence-enabled human resource management courses

The integration of artificial intelligence technology presents new possibilities for the reform of human resource management education in universities. Traditional courses in this field are often heavily lecture-based, with limited practical application and insufficient interactivity, making it challenging to cater to students' needs for personalized learning and self-directed exploration. AI-driven innovations not only refine course content but also introduce intelligent teaching tools that enhance classroom engagement and improve learning outcomes.Artificial intelligence supports the instructional design of human resource management courses in three key areas: first, leveraging intelligent technologies to optimize course content, ensuring higher-quality and better-matched teaching resources; second, establishing an AI-powered interactive learning platform that fosters more efficient teacher-student communication while enhancing immersion and engagement in the learning process; and third, utilizing AI-driven learning analytics to enable personalized learning path recommendations and intelligent assessment, thereby providing more precise and effective learning experiences for students.

2.2.1. Intelligent course content generation and optimization

The swift advancement of artificial intelligence technology offers a novel perspective on optimizing the content of human resource management courses in higher education. Traditionally, course design has predominantly relied on instructors' expertise and academic research findings, often resulting in lengthy update cycles that struggle to keep pace with the latest industry trends. And artificial intelligence can use big data analysis, natural language processing (NLP) and other technologies to automatically organize and optimize the teaching content, so that the course is more intelligent, dynamic and personalized to better adapt to modern teaching needs, as shown in Figure 2 :
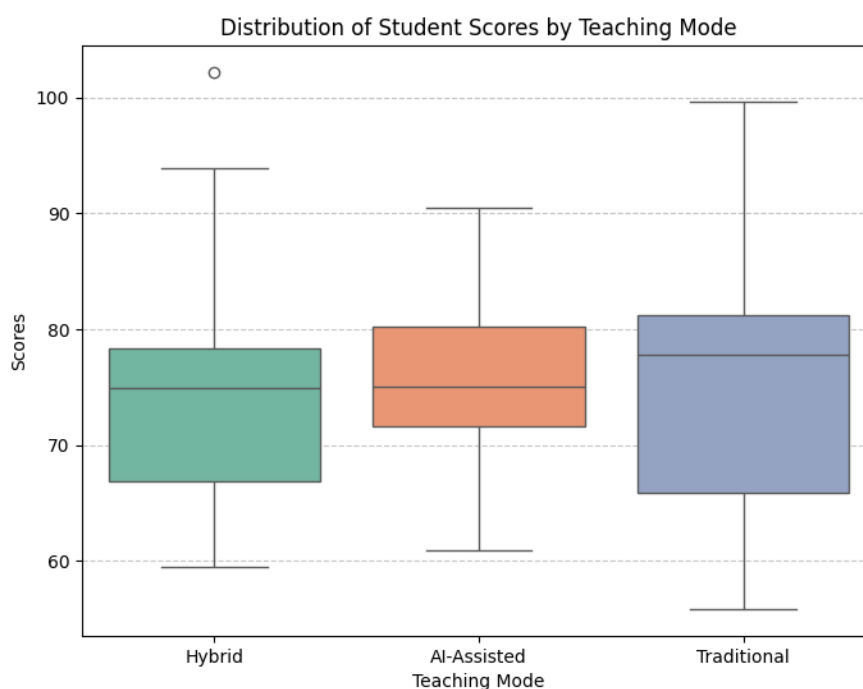

Figure 2 Distribution of Student Scores by Teaching Mode

AI can systematically analyze vast volumes of academic literature, industry reports, and policy documents, offering a scientific foundation for updating course content. Utilizing natural language processing (NLP) technology, AI rapidly extracts and synthesizes the latest research findings in human resource management, enabling educators to efficiently integrate cutting-edge knowledge into classroom instruction. Additionally, AI can automatically curate relevant case studies, ensuring that teaching materials remain closely aligned with real-world industry practices and enhancing students' ability to apply theoretical concepts in practical scenarios.

Intelligent content generation technologies further enable personalized recommendations for teaching

resources. Traditional textbooks and courseware often follow a rigid structure, lacking adaptability to individual students' learning needs. In contrast, AI can assess students' knowledge proficiency and areas of interest based on their learning data, dynamically recommending customized educational materials such as targeted readings, video lectures, and interactive exercises. This tailored approach enhances learning efficiency and fosters a more engaging educational experience.AI can optimize the way teaching content is presented, making complex topics more accessible and visually engaging. By leveraging machine learning and data visualization techniques, AI can convert intricate theoretical concepts into intuitive infographics, dynamic simulations, or interactive experiments. This is particularly beneficial for subjects involving extensive data analysis and model-based reasoning, such as organizational behavior and performance management, where AI-powered visualization tools can help students grasp abstract ideas more effectively and deepen their understanding.

The integration of AI-driven course content generation and optimization not only improves the quality and timeliness of teaching materials but also enhances the personalization and interactivity of learning experiences. As artificial intelligence technology continues to evolve, human resource management courses in higher education will become more precise, adaptive, and engaging, providing students with enriched learning opportunities while fostering innovative advancements in university teaching methodologies.

2.2.2. Construction of interactive learning platform

Interactive learning has become a key focus in modern higher education reform, and the integration of artificial intelligence offers robust technical support for building interactive learning platforms. Compared with traditional lecture-based teaching, where students passively absorb knowledge, AI-powered interactive platforms foster real-time teacher-student communication, enhance student engagement, and provide a more intelligent and personalized learning experience. By incorporating intelligent Q&A systems, virtual instructors, AI-driven assessments, and automated feedback mechanisms, these platforms not only improve teaching efficiency but also support individualized learning pathways.

The implementation of intelligent Q&A systems enables instant academic support while streamlining teacher-student interactions. AI-powered chatbots, leveraging natural language processing (NLP), can respond to students' queries in real time, offer immediate feedback, and mitigate learning disruptions caused by unresolved questions. Additionally, these systems can analyze frequently asked questions to identify common learning challenges, providing instructors with data-driven insights to refine their teaching strategies and enhance course relevance.

The use of virtual teachers and AI-assisted teaching aids further enhances classroom interactivity and personalization. Virtual instructors, equipped with speech recognition and synthesis capabilities, can simulate the teaching styles of human educators, delivering intelligent explanations tailored to students' needs. Simultaneously, AI teaching assistants analyze individual learning data to offer personalized study recommendations, such as targeted revision materials and relevant case studies, thus improving both the precision and autonomy of the learning process.

AI-driven assessment and feedback systems introduce a more dynamic and personalized learning experience. Traditional grading methods rely heavily on manual evaluation, leading to slow feedback cycles and increased teacher workload. In contrast, AI-powered assessment tools can efficiently evaluate assignments, provide instant grading, and generate in-depth learning analytics. These systems identify students' knowledge gaps and recommend customized learning resources, enabling continuous improvement and more effective knowledge retention.

The integration of AI into interactive learning platforms not only elevates the intelligence of teaching but also enhances student engagement and classroom dynamics. As artificial intelligence technology continues to evolve, these platforms will play an increasingly pivotal role in human resource management education, driving transformative changes in teaching methodologies and opening new possibilities for the future of intelligent education.

2.2.3. Personalized learning path and learning effect assessment

The integration of artificial intelligence technology into human resource management courses in higher education allows for the creation of personalized learning paths tailored to students' unique learning characteristics and needs, while also enabling precise learning outcome assessments. Traditional teaching models often follow a standardized curriculum and uniform assessment criteria, making it difficult to accommodate individual differences among students. AI leverages big data analytics, machine

learning, and intelligent assessment tools to deeply analyze students' learning behaviors, dynamically adjust teaching strategies, and enhance learning effectiveness.

AI-driven learning data analysis facilitates the customization of personalized learning paths. By collecting and processing students' learning records, assignment scores, and classroom interaction data, AI constructs individualized learning profiles and recommends course content accordingly. For students struggling with foundational concepts, the system can provide additional explanatory resources, while those with stronger capabilities can be guided toward advanced coursework or complex case studies. This adaptive learning approach optimizes knowledge acquisition, allowing students to progress at a pace best suited to their abilities.

Artificial intelligence also enables dynamic learning progress adjustments to ensure an optimal learning experience. Given the varying learning speeds and comprehension levels of students, traditional teaching models often struggle to accommodate everyone's needs. AI continuously monitors students' progress, assesses their grasp of key concepts, and modifies the content difficulty accordingly. For students who frequently make errors in specific areas, AI can generate targeted practice exercises, while those demonstrating strong performance receive recommendations for more advanced learning materials, thereby achieving a truly tailored educational experience.

Furthermore, AI-powered intelligent assessment systems offer instant and precise evaluations of learning outcomes. Unlike conventional assessments that primarily rely on test scores, AI-based evaluation systems integrate multiple dimensions of student performance, including classroom engagement, homework completion, and Q&A interactions. Natural language processing (NLP)-enabled grading systems can analyze essays or reports with remarkable efficiency, providing detailed feedback for improvement. Meanwhile, adaptive testing systems adjust question difficulty in real time based on students' responses, ensuring a more accurate and scientifically grounded assessment process.

By enhancing both learning efficiency and instructional precision, AI-powered personalized learning paths and intelligent assessments pave the way for a more flexible and student-centric educational model. As AI technology continues to advance, human resource management courses in higher education will become increasingly intelligent and adaptive, ultimately improving teaching quality and fostering the development of highly skilled management professionals.

3. Challenges and development trend of artificial intelligence teaching mode

The application of artificial intelligence in human resource management courses in colleges and universities has greatly improved teaching efficiency and personalization, but its promotion and application still face many challenges. With the continuous development of artificial intelligence technology, the future teaching mode will also evolve in the direction of more intelligent, immersive and personalized. An in-depth discussion of the challenges of artificial intelligence teaching mode and a look at its future development trend is of great significance for promoting educational reform in colleges and universities.

One of the main challenges facing the AI teaching mode is the problem of technology cost and infrastructure construction. The development and maintenance of AI systems require a large amount of capital investment, including hardware equipment, data storage, algorithm optimization and so on. Colleges and universities need to be equipped with corresponding computing resources and network environments when introducing AI technology, which may be under greater pressure for colleges and universities with limited funds. How to reduce the technical cost of AI teaching and improve the adaptability of colleges and universities to intelligent teaching systems is a current problem that needs to be solved, as shown in Table 1 :

Table 1 Average Student Achievement in Different Modes of Instruction

Teaching Mode	Average Score	Std Deviation
Traditional	77.8	9.13
AI-Assisted	73.15	5.37
Hybrid	79.77	6.53

Data privacy and ethical issues are also important challenges that must be attended to during the promotion of AI teaching models. Artificial intelligence systems need to collect and analyze a large amount of students' learning data for personalized recommendation and intelligent assessment. The

security, privacy protection, and reasonable use of these data have become urgent issues. If the data is not managed properly, it may lead to the leakage of student information and even affect the fairness of education. Colleges and universities need to strictly abide by data security norms when using AI technology and establish a sound data protection mechanism to ensure the compliance and safety of AI teaching.

The AI teaching mode will further integrate with other cutting-edge technologies to promote the intelligent upgrading of teaching methods. Artificial intelligence combined with virtual reality (VR) and augmented reality (AR) technology can build a more immersive learning environment, making case teaching in HRM courses more intuitive and vivid. With the development of big models and natural language processing technology, intelligent teacher assistants will be more intelligent, not only able to provide personalized teaching content, but also to carry out in-depth contextual simulation and interaction to improve students' learning experience.

The artificial intelligence teaching model still faces many challenges, but its application in the field of college education has a broad prospect. Colleges and universities should actively explore the in-depth integration of artificial intelligence and teaching, continuously optimize the intelligent teaching system, and improve the quality and efficiency of teaching. In the process of technology application, it is also necessary to continuously improve the relevant policies and management systems to ensure the sustainable development of artificial intelligence teaching. Through continuous innovation and practice, artificial intelligence will provide more intelligent and efficient solutions for the teaching reform of human resource management courses in colleges and universities.

4. Conclusion

The rapid advancement of artificial intelligence technology has created new opportunities for the reform of human resource management education in colleges and universities. This paper explores the application of AI in this field, focusing on intelligent course content optimization, the construction of interactive learning platforms, and the implementation of personalized learning paths and intelligent assessment methods. AI not only enhances the quality and efficiency of teaching content updates but also fosters greater classroom interactivity, enables precise personalized instruction, and significantly improves students' learning experiences and outcomes.

The widespread adoption of AI-driven teaching models faces challenges, including high technological costs, data privacy concerns, and ethical considerations. To ensure the effective and responsible integration of AI into education, universities must establish robust data security management frameworks and enhance faculty and student adaptability to intelligent teaching tools. Addressing these challenges will be key to realizing the full potential of AI in higher education.

As AI technology continues to evolve, its integration with virtual reality, augmented reality, and big data analytics will further drive innovations in teaching methodologies. Universities should actively explore AI-powered educational models, continuously refine instructional strategies, and improve teaching quality to meet the evolving demands of talent development in the digital era. The application of AI in human resource management education is not merely a shift in teaching methods but a crucial step toward the intelligent transformation of higher education. By leveraging AI effectively, universities can build a more efficient, personalized, and interactive learning ecosystem, providing strong support for cultivating high-caliber management professionals for the future.

References

[1] Thomaz A L , Breazeal C .Teachable robots: Understanding human teaching behavior to build more effective robot learners[J].Artificial Intelligence, 2008, 172(6 － 7):716-737. DOI:10.1016/j.artint.2007.09.009.
[2] Silverthorn, D. U .Teaching and learning in the interactive classroom[J].Advances in Physiology Education, 2006, 30(4):135-140.DOI:10.1152/advan.00087.2006.
[3] Davidovitch L , Parush A , Shtub A .Simulation-based Learning in Engineering Education: Performance and Transfer in Learning Project Management[J].Journal of Engineering Education, 2006, 95(4):289－299.DOI:10.1002/j.2168-9830.2006.tb00904.x.
[4] Shiang H P , Van d S M .Feedback-Driven Interactive Learning in Dynamic Wireless Resource Management for Delay-Sensitive Users[J].IEEE Transactions on Vehicular Technology, 2009, 58(4):2030-2043.DOI:10.1109/TVT.2008.2003361.

[5] Villiers M R R D .An Action Research Approach to the Design, Development and Evaluation of an Interactive E-Learning Tutorial in a Cognitive Domain[J].Journal of Information Technology Education:Research, 2007, 6(6):455-479.DOI:10.28945/227.

[6] Dybala T , Tecuci G , Rezazad H .The shared expertise model for teaching interactive design assistants[J]. Engineering Applications of Artificial Intelligence, 1996, 9(6):611-626. DOI:10.1016/S0952-1976(96)00056-5.

[7] Nilsson A ,Marianne Andrén, Engstrm M .E-assessment of prior learning: a pilot study of interactive assessment of staff with no formal education who are working in Swedish elderly care[J].Bmc Geriatrics, 2014, 14(1):52.DOI:10.1186/1471-2318-14-52.

[8] Dai Y , Liu A , Morrison J ,et al.Systemic Design of Interactive Learning Environment for Global Engineering Courses[J].The international journal of engineering education, 2016, 32(6):2597-2611.

[9] Liang X , Haiping L , Liu J ,et al.Reform of English interactive teaching mode based on cloud computing artificial intelligence – a practice analysis[J].Journal of Intelligent and Fuzzy Systems, 2020, 40(5):1-13.DOI:10.3233/JIFS-189397.

[10] Steif P S , Dollar A .Study of Usage Patterns and Learning Gains in a Web‑based Interactive Static Course[J].Journal of Engineering Education, 2009, 98(4):321 – 333.DOI:10.1002/j.2168-9830.2009.tb01030.x.