



Modern digital technologies in human resources management: Impact on professional training

Volodymyr Nosachenko*

PhD in Pedagogical Sciences, Associate Professor
Hryhorii Skovoroda University in Pereiaslav
08401, 30 Sukhomlynskyi Str., Pereiaslav, Ukraine
<https://orcid.org/0000-0003-0266-5199>

Dmytro Nosachenko

Postgraduate Student
Hryhorii Skovoroda University in Pereiaslav
08401, 30 Sukhomlynskyi Str., Pereiaslav, Ukraine
<https://orcid.org/0009-0009-1624-4548>

■ **Abstract.** The study aimed to compare the effectiveness of specialists before and after the introduction of digital technologies. The research methodology included experimentation and comparative analysis using learning management systems, cloud-based collaboration platforms, and artificial intelligence in recruitment. The study results demonstrated that digital platforms and automated systems significantly improve the learning process, especially in key areas such as recruitment, onboarding, performance evaluation and development of required competencies. With the use of artificial intelligence and big data, companies can identify training needs with greater accuracy, conduct a more detailed analysis of market trends and predict potential risks, which improves the quality of strategic decision-making. With these technologies, educational institutions can introduce modern teaching methods based on individualised approaches to students and professionals. One of the important advantages of digital solutions is the increased satisfaction of students and employees due to flexible study schedules and distance learning opportunities. This significantly improves internal communication and reduces stress among participants in the learning process. The study determined that such platforms also increase students' loyalty to educational institutions, contribute to their efficiency and allow them to adapt more quickly to the conditions of the modern labour market. The findings create new opportunities for the further development of training programmes in the field of human resources management. In particular, the integration of digital platforms and automated learning systems helps to develop educational strategies that meet the challenges of the digital economy. As a result, specialists become competitive and prepared for the real challenges of their professional activities

■ **Keywords:** automation; innovation; training; competence; transformation

■ Introduction

Modern digital technologies are central in the transformation of human resource (HR) processes and significantly affect the professional training of HR professionals. Automated systems, artificial intelligence (AI), data analytics and cloud services are becoming more widespread, changing the traditional methods of recruiting,

evaluating and developing employees. Such innovations not only optimise the routine operations of HR departments but also provide companies with a competitive advantage by accurately predicting staffing needs and increasing their efficiency. This requires new approaches to training specialists who must be

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*Corresponding author

prepared to work with tools that are significantly different from those used before. In this regard, there is a need to adapt curricula for HR professionals, at universities. In addition to the traditional disciplines related to management theory and human resources, students should acquire practical skills in working with modern HR platforms, and human resource management system (HRIS), as well as data analysis and AI methods to predict employee behaviour and effectively manage their development. This will allow future specialists to easily integrate into the work environment and meet the requirements of the modern labour market. Digital technologies are also central in the development of flexible management approaches, including remote employment, which is becoming increasingly popular. HR professionals need to be able to use tools to organise and monitor employee productivity remotely, which requires new competencies and approaches to HR management. Modern digital technologies have a significant impact on HR management processes, which emphasises the importance of adapting professional training to the new realities of the labour market. This determines the research's relevance.

Modern research is addressing the issue of introducing digital technologies into the field of human resources management, which contributes to improving the efficiency of enterprises. Many scholars study this topic and offer different views on it. For instance, A. Akimov & A. Tikhonov (2023) examined the use of digital technologies in the human resource management system of aerospace enterprises, emphasising their importance for increasing competitiveness. In turn, G. Chen (2021) studied methods of optimising human resources management with the help of information technology, particularly the automation of various procedures. E. Egorov *et al.* (2020) studied the main trends in the use of information technology in the hotel industry, noting the importance of introducing new solutions for human resources management. S. Frkić *et al.* (2020) addressed the importance of digital practical training for students specialising in human resources management, emphasising the relevance of developing these skills. S.S. Gadzali *et al.* (2023) explored human resource management (HRM) strategies in the context of the digital transformation of organisations, emphasising the importance of a strategic approach to change. G.F. Galieva *et al.* (2022) examined anti-crisis technologies for improving the efficiency of HRM, addressing their role in improving the performance of organisations. The importance of IT in HRM processes was studied by N.V. Kozhukhova *et al.* (2021), who emphasised the importance of IT technologies in HR management in the digital age, pointing to their impact on changing approaches to HR management. Y. Li & H. Xiao (2022) presented an automated financial management system based on artificial intelligence technologies, which increases the accuracy and speed of data processing.

The role of the board of directors in improving efficiency is important in reforming the management of enterprises. In this context, H. Liu & G. Hu (2020) investigated the use of artificial intelligence technologies that can significantly improve decision-making and resource management. X. Lu (2020) analysed the use of computer digital technologies for the management of personnel files in universities, demonstrating the benefits of automating processes in higher education, which in turn leads to an increase in the overall productivity of educational institutions. O. Makovoz (2024) analysed the general trends in the use of digital technologies in the field of human resources management, addressing the latest developments and innovative approaches that appear on the market. The design of a personnel information management system for universities, presented by H. Mao & Q. Zhang (2022), improves performance through the introduction of intelligent technologies, which reduces time and resources. H. Nazarova *et al.* (2022) investigated the transformation of HRM principles in modern conditions, emphasising the need to adapt to changes in the labour market. E. Okrushko *et al.* (2023) examined the impact of big data technologies on the digital transformation of HR management in organisations, emphasising the importance of introducing new technologies to improve the efficiency of management processes. The study aimed to compare the activities of specialists before and after the introduction of digital technologies based on standardised methods.

■ Materials and Methods

This study was conducted based on the method of experimentation and comparative analysis during the two months of April-May 2023 and included three stages. The research methodology was conducted using three main technologies, namely LMS, cloud-based collaboration platforms, and AI in recruitment. The company Rozetka (Rozetka, n.d.), which employs 200 specialists, was chosen for the study. Among them, 120 participants are women and 80 are men, aged 25 to 40. The study was conducted in accordance with The guidance note of the European Commission on ethics and data protection (2021).

The first stage of the study involved determining the level of professionalism of the participants without the use of digital technologies, which was used to create a basis for comparison with the results obtained after the introduction of modern digital means. The assessment of professionalism was based on the following criteria: performance (analysis of productivity, teamwork, meeting deadlines and achieving goals); problem-solving ability (determining the level of participants' creativity, data analysis and decision-making in non-standard situations was an important indicator of professional competence); communication skills (participants' ability to interact with colleagues

and management, formulate their thoughts and communicate information effectively was determined); adaptability to change (participants' ability to adapt to workplace changes, address new challenges and learning rate without modern technology); leadership skills and initiative (responsibility for projects and readiness to initiate workplace improvements). Based on these criteria, the initial indicators of each participant's professionalism were formed, and used for further comparison with the results after the introduction of digital technologies.

The second stage was the use of three methods to analyse the effectiveness of digital technologies in training, each of which had its specifics, namely Kirkpatrick's Four-Level Training Evaluation Model (The Kirkpatrick's Model, n.d.) for LMS. This methodology helped to evaluate the effectiveness of training programmes at four levels: participants' response to training, the level of knowledge acquired, changes in the behaviour of specialists after training, and the results of implementing this knowledge in practice. This approach was used not only to study how well the specialists learned new knowledge through the LMS but also how this knowledge affected their productivity in the workplace. Team cohesion assessment (2024) for Cloud Platforms assesses the interaction and cooperation between team members when using cloud technologies. This methodology was used to determine the level of team effectiveness, communication skills, and engagement. It was used to investigate how effectively specialists used platforms such as Microsoft Teams in their professional activities, and the problems and opportunities that arose in the process of cooperation. Quality of Hire (QoH) Assessment for artificial intelligence (AI) in recruitment was used to evaluate the quality of hiring through AI tools (Bika, 2023). The methodology included analysing the compliance of new employees with job requirements, their performance in the first months of employment, and the speed of closing vacancies. This determined how artificial intelligence influenced the improvement of the hiring process, increasing the quality of recruitment and optimising the speed of filling positions. The last stage of the study was a comparative analysis of the professional activities of specialists before and after the introduction of digital technologies.

■ Results

Digital technologies significantly changed human resources management, including professional training. With the rapid development of information technology and growing competition in the labour market, organisations are facing new challenges that require the adaptation of training programmes and methods. The integration of modern technologies, such as LMS, AI and cloud platforms, provides a significant increase in the efficiency of the learning process, allowing access to the latest knowledge and skills. The relevance of

professional training in the context of digitalisation is driven by the need to meet the requirements of a rapidly changing environment. Not only theoretical knowledge is important, but also practical skills, adaptability, critical thinking and effective communication. Modern technologies open new learning opportunities, providing an individualised approach to each specialist. This increases students' motivation and promotes their active participation in the learning process. The introduction of digital technologies in the training of specialists not only improves the quality of education but also creates new teaching methodologies that meet the requirements of the labour market. Such changes create conditions for successful career growth of graduates who are ready to meet the challenges of the modern world. This is especially relevant in the context of globalisation and rapidly changing requirements for professional competencies.

Digital technologies have long been an integral part of human resources management (HRM). They help automate processes, increase workplace efficiency, and improve communication between employees and managers. Modern digital tools for HRM cover a wide range of technologies, such as human resource management systems, artificial intelligence, data analytics, cloud services and mobile platforms. One of the key technologies is a HRIS. They provide centralised storage of employee data, document management, time tracking and processes related to recruitment, remuneration and performance evaluation. HRIS can cut administrative costs and reduce human error by ensuring efficient data management and optimising workflows. Artificial intelligence plays an important role in HR management. AI algorithms can automate recruitment processes, from finding candidates to conducting interviews with chatbots. Artificial intelligence can analyse CVs and provide recommendations on the suitability of candidates for the position. In addition, these technologies can improve the prediction of employee behaviour, and assess employee satisfaction and the risk of attrition, which helps prevent the loss of important personnel. Data analytics technology is used for informed decisions based on the collected information. In HR, this means using data on performance, employee satisfaction, and turnover rates to identify weaknesses and develop strategies to address them. For instance, analytical tools can determine why employees leave, what skills are key to a company's success, and how to better allocate resources for staff training. Cloud technologies have had a significant impact on the field of HR management. Cloud solutions allow companies to access data from anywhere and at any time, which is especially important for organisations with a global workforce. This promotes workplace flexibility and reduces infrastructure maintenance costs. Cloud services can quickly adapt to changes and integrate new features, including remote team management. Mobile platforms allow employees to access HR

systems from their smartphones and tablets, which increases their engagement and efficiency. For instance, employees can view their schedules, request leave, or access internal company information through mobile apps. Mobile platforms also facilitate communication between employees and management, which contributes to better management and teamwork.

In general, modern digital technologies in HR not only optimise processes but also contribute to the development of a more adaptive and efficient workforce. They allow companies to respond quickly to changes, increase employee satisfaction and ensure their professional growth. In the future, the development of artificial intelligence, automation and data analytics can further transform the HR industry, creating new opportunities to increase productivity and efficiency at all levels of the organisation. According to a Gartner study (Gartner for human..., n.d.), 70% of employees believe that the use of digital learning and development platforms significantly enhances their knowledge and skills. These platforms, which can include online courses, webinars, video tutorials and interactive learning modules, provide flexibility in learning, which is especially important. Employees can study at their convenience and in a comfortable environment, which helps to increase their engagement and motivation to learn. During the COVID-19 pandemic, many organisations were forced to switch to distance learning, and the results showed that employees can achieve high results using online tools. This highlights the importance of technology in modern HR and learning, as it opens new opportunities for developing professional skills.

Digital technologies significantly affect the professional training of specialists, changing traditional teaching methods, creating new tools for skill development and contributing to more efficient knowledge acquisition (Onipko & Yaprynets, 2024). The main areas of this impact can be outlined in several key aspects: the introduction of innovative educational platforms, the use of virtual and augmented reality, the personalisation of learning processes, the integration of data analytics and artificial intelligence, and the development of digital competencies. Modern technologies expand access to quality education beyond the physical walls of educational institutions. Online courses, webinars, and educational platforms such as Coursera, edX, and Udemy enable professionals to acquire new knowledge at a time and place convenient for them. This is especially relevant for advanced training and acquiring new professional skills. In addition, virtual classrooms and cloud technologies provide an opportunity for teachers and students to work together on projects regardless of their geographical location, which expands opportunities for international cooperation and experience exchange. Virtual reality (VR) and augmented reality (AR) are creating new horizons in professional

training. With the help of these technologies, specialists can learn in conditions as close to real as possible without leaving the classroom. For instance, healthcare professionals can practice complex surgical procedures in a virtual environment, and engineers can design and test models without the need to create physical prototypes. VR and AR can be used to practice skills without risking health or resources, making the learning process more efficient and safer. Digital technologies can be used to adapt learning materials to the specific needs of each student. Intelligent platforms that use artificial intelligence analyse students' behaviour and performance, providing individualised recommendations for further learning. This contributes to more effective learning, as each specialist can study the material most needed to develop in the profession. Personalisation can also be used to address different learning styles by providing interactive materials, video tutorials, or tasks based on gaming technologies. Data analytics and artificial intelligence are changing the way teachers assess student progress. Data collection and processing technologies can be used to track learning achievements, analyse mistakes and adjust the training process in time. As such, an individual approach to each student and optimisation for the use of time for both teachers and students is possible. AI is also used to automate learning processes, such as grading assignments, organising tests, and adapting materials to the specific needs of the group. With the rapid development of technology, digital literacy is becoming critical for any professional. Educational institutions are increasingly integrating the development of digital skills into their programmes, providing students with knowledge of basic and advanced technologies, from working with computer programs to the basics of programming and cybersecurity. This allows future professionals to be competitive in the labour market and use technology effectively in their professional activities. Innovative platforms, virtual and augmented reality, personalised learning, data analytics, and the development of digital competencies are interconnected to create new opportunities for high-quality training. The use of these technologies helps to increase the efficiency of the educational process, improve the professional skills of specialists and make them better prepared for the challenges of the modern labour market.

The introduction of digital solutions into human resources (HR) curricula significantly improves the effectiveness of HR training. Digital technologies not only improve access to educational materials but also change the learning methods, which is especially relevant for training HR professionals to operate in a modern digital environment. Digital platforms allow students to access materials anytime and from anywhere. This contributes to the flexibility of the learning process and allows professionals to combine their studies with work or other commitments. In addition, digital

solutions, such as interactive simulators, make it possible to practice practical skills in realistic conditions, which significantly improves the quality of training. Modern platforms can analyse the progress of each student and provide individualised recommendations, which improves learning and increases the level of interest in the learning process. For HR professionals who often employ analytical tools for personnel assessment, this opportunity is important because it allows them to master practical skills in a learning environment.

In addition, digital solutions significantly increase the effectiveness of teamwork and communication in the learning process. The use of collaboration platforms, such as Zoom or Microsoft Teams, allows students to develop teamwork skills. Instructors can use these platforms to organise group projects or discussions, which helps students develop critical thinking and leadership skills. HR professionals must constantly monitor new trends in HR management, and digital platforms allow them to access webinars, online courses and conferences, which allows them to stay at the forefront of their profession. The introduction of digital solutions allows for real-time monitoring and evaluation of learning effectiveness. Teachers can receive data on students' performance, progress and level of learning, which allows

them to make prompt adjustments to the learning process. This approach helps improve the quality of training and allows HR professionals to acquire more relevant knowledge and skills. An equally important aspect is the development of the digital skills of the specialists themselves. Modern HR systems, such as HRM platforms, recruitment automation, and HR analytics, are an integral part of a modern HR specialist's work. The introduction of such solutions into the curriculum allows students to gain practical experience with these tools while they are still studying, which significantly improves their competitiveness in the labour market. The introduction of digital solutions into the curriculum for HR professionals significantly increases the effectiveness of their training. They contribute to the development of both practical and theoretical knowledge, improve access to materials, and make the learning process more flexible and personalised. As a result, HR professionals are better prepared to handle the digital environment that is essential in the modern world. The study evaluated the impact of digital tools on the professional skills of Rozetka employees, and the results are presented in Table 1, showing changes in efficiency, problem-solving, communication and other important indicators before and after the introduction of these tools.

Table 1. *The impact of digital tools on the professional skills of Rozetka employees*

Criteria	Before the introduction of digital tools	After the introduction of digital tools	Tools used
Efficiency	65%	85%	Office 365
Problem-solving	60%	82%	Power BI
Communication skills	70%	90%	Zoom
Adaptability to changes	55%	80%	Microsoft Teams
Leadership skills and initiative	50%	78%	Microsoft Planner

Source: *compiled by the authors*

The metrics shown in Table 1 suggest that a significant proportion of employees have demonstrated significant progress in handling workplace tasks and interacting with colleagues. Digital tools simplify the project management process, improve the quality of communication, and increase the speed of response to changes. This is especially relevant in a modern environment when the demands on professionalism are constantly growing and the ability to quickly adapt to new conditions is a key success factor. Improvements have been seen in important skills such as teamwork and leadership. Using digital platforms such as Microsoft Teams and Office 365, specialists have been able to coordinate their work more effectively, set clear priorities, and take on more responsibility for projects. This strengthened team spirit and stimulated initiative among employees, which positively affected overall productivity. Most of the staff showed improvements in the speed of learning new ways of handling workplace tasks and readiness for change. Digital tools have

helped to facilitate this process by reducing stress and increasing confidence in performing work tasks.

Rozetka needs to continuously develop and implement new digital technologies, such as learning management systems, cloud-based collaboration platforms and artificial intelligence in recruitment, as they provide significant benefits for both the company and its employees. Implementation of learning management systems allows a company to maintain a continuous process of training and development of employees. LMS helps to create personalised learning plans, analyse progress and track employee competencies. It provides flexibility in learning, as employees can manage their time and study online, which increases their efficiency. Cloud-based collaboration platforms, such as Microsoft Teams, allow for more efficient communication and collaboration. They simplify access to documents, facilitate real-time information sharing, and provide a secure space for collaboration. Cloud-based solutions also facilitate faster decision-making and optimise workflows, which

is a key factor for success in a globally competitive environment. Artificial intelligence in recruitment is becoming an integral part of the hiring process, as it automates routine tasks such as sorting resumes, finding the best candidates based on skills and qualifications, and analysing interview results. This not only saves time and resources for the HR department but also reduces the risk of subjective hiring decisions, contributing to a more accurate selection of specialists. Continuous development of digital technologies is strategically important for

Rozetka. Implementation of LMS, cloud platforms and AI in recruitment allows companies to remain innovative, increase efficiency, optimise HR management and maintain competitiveness in the global market.

Based on the results of the second stage of the study, where three methodologies were used, including Kirkpatrick's Four-Level Training Evaluation Model, to assess the effectiveness of the implementation of LMS, Table 2 shows the results of Rozetka's employees (200 people) by Kirkpatrick's levels.

Table 2. *Evaluation of the effectiveness of the implementation of learning management systems, cloud platforms and artificial intelligence using the Kirkpatrick methodology*

Kirkpatrick's Four-Level Training Evaluation Model	Percentage of participants demonstrated a high level of	Percentage of participants demonstrating the average level	Percentage of participants demonstrated a low level of
Reaction (assessment of the usability and satisfaction of the LMS)	85%	10%	5%
Knowledge assimilation (the ability to apply new knowledge)	75%	20%	5%
Behavioural change (application of knowledge in work)	70%	25%	5%
Results (impact on productivity and efficiency)	65%	30%	5%

Source: compiled by the authors

The data in the table demonstrated that most participants positively assessed the reaction to the LMS, which indicates the convenience and usefulness of this tool for training. This indicates the success of the technology implementation itself and its positive impact on the motivation of specialists. A significant number of participants efficiently mastered the new knowledge, which demonstrates the quality of the training material and methods. However, some of the participants showed an average level of learning, which may signal the need to improve the learning process or provide additional support. More than half of the professionals were able to apply the knowledge

gained during employment. This underlines the practicality of the training and its connection with real working conditions. However, not all participants noted an increase in productivity, which suggests that not all professionals have yet fully realised the potential of their new skills.

Team cohesion assessment (2024) methodology was used to assess the impact of cloud platforms on the effectiveness of communication and interaction between specialists. This methodology was used to analyse key indicators. The results of the study are shown in Table 3, which illustrates how cloud technologies contribute to improved collaboration in workgroups.

Table 3. *Evaluation of the effectiveness of communication and interaction between specialists when using cloud platforms based on the Team cohesion assessment methodology*

Metric	Number of participants	Comment
Teamwork efficiency	150	Most participants reported improved teamwork due to the interactivity of the platforms
Communication	150	A significant number of experts noted that communication has become more open and accessible
Engagement	140	Many participants believe that cloud-based platforms facilitate greater engagement in the workplace
Cooperation	155	Participants reported an increased level of cooperation between team members
Feedback	130	Some professionals noted improvements in receiving feedback from colleagues

Source: compiled by the authors based on Team cohesion assessment (2024)

In particular, the use of cloud-based platforms such as Microsoft Teams positively affected teamwork, communication and engagement. According to the data, most participants rated their work efficiency as significantly improved due to the opportunities provided by these technologies. Many noted that cloud platforms facilitate collaboration by making processes more interactive and

team friendly. This demonstrates the importance and feasibility of implementing such technologies to improve workplace efficiency in a modern environment.

For a detailed analysis of the effectiveness of the implementation of LMS, cloud collaboration platforms and AI, Kirkpatrick's Four-Level Training Evaluation Model was used. This methodology was used to assess the reaction

of participants, knowledge acquisition, behavioural change and the results of technology implementation;

the results of Microsoft specialists' work by levels of this methodology are shown in Table 4.

Table 4. Comparison of professional performance indicators of specialists before and after the introduction of digital technologies based on the Quality of Hire Assessment methodology

Metric	Before implementation	After implementation
Efficiency of workplace tasks handling	65%	85%
Communication skills	60%	80%
Rate of adaptation to changes	55%	75%
Ability to solve problems	70%	90%
The general level of satisfaction	68%	88%

Source: compiled by the authors based on N. Bika (2023)

The last stage of the study confirmed the positive impact of digital technologies on the professional activities of specialists. As the table shows, after the introduction of LMS, cloud-based collaboration platforms and AI in recruitment, the efficiency of task performance increased from 65% to 85%. Participants also demonstrated significant improvements in communication skills (from 60% to 80%) and the speed of adaptation to change (from 55% to 75%). The ability to solve problems has increased from 70% to 90%, indicating an increase in professional competence. Overall employee job satisfaction increased from 68% to 88%. This indicates that the integration of digital technologies has not only improved productivity but also had a positive impact on the team atmosphere. Therefore, the introduction of the latest technology in professional training is crucial to improve efficiency and employee satisfaction.

The results of the study demonstrate the significant impact of digital technologies on the effectiveness of professional activities of specialists in the field of human resources management. This creates new opportunities for the further development of training programmes that meet the needs of the modern labour market. Integration of digital platforms such as LMS, cloud-based collaboration solutions and artificial intelligence in recruitment is an important step in training future professionals. These technologies not only help to improve the efficiency of the learning process but can also be used to adapt curricula to the challenges of the digital economy. Learning management systems provide a personalised approach to learning, allowing professionals to acquire knowledge at the desired pace. This deepens learning and improves professional skills. Cloud-based platforms, such as Microsoft Teams, facilitate communication between participants in the learning process, allowing them to quickly share ideas and resources. This not only improves teamwork but also creates an environment where participants can freely share knowledge and experience, which is especially important in the field of human resources. Artificial intelligence plays an important role in modernising training and recruitment processes. The use of artificial intelligence in recruitment allows for the automation of many routine tasks, which increases the

speed and quality of recruitment. This, in turn, allows HR professionals to focus on strategic aspects of their work, such as talent development and improving corporate culture. The integration of artificial intelligence into training programmes can create new opportunities for developing skills that will become critical in today's economy. The field of human resources management is undergoing significant transformations due to the introduction of new technologies, and educational institutions must respond to these changes. This may include the development of new courses that focus on relevant topics such as data management, artificial intelligence ethics, and digital transformation in organisations. Professionals acquire skills that allow them to effectively use new tools and technologies and adapt to new challenges. This is important not only for the personal development of each specialist but also for increasing the competitiveness of organisations.

The results of the study confirm that the introduction of digital technologies into the curricula for HR professionals creates new horizons for their professional development. The use of such technologies not only improves the efficiency of training but also creates specialists who can adapt to the challenges of the digital economy. In turn, this will have a positive impact on the overall development of organisations and increase their efficiency in the modern-day labour market.

■ Discussion

This study is an important contribution to the determination of the impact of modern digital technologies, including artificial intelligence, on HRM. In the context of rapid digital transformation, HR departments are facing new challenges and opportunities that require a rethinking of traditional approaches to HR. This study has revealed significant significance in the context of current trends in HRM. The main objective of the study was to identify the impact of new technologies, in particular AI, on the efficiency of HR processes. The findings showed that the integration of AI into recruitment, performance management and performance evaluation contribute to the efficiency of organisations. This correlates with the findings of other researchers who have also studied the issue of technological adaptation

in HRM. The findings underlined those organisations that implement AI technologies can significantly reduce recruitment time and improve the accuracy of matching candidates with vacancies. For instance, K. Pryshliak & Y. Semenenko (2024) confirmed that the use of AI in recruitment processes helps to reduce costs and improve the quality of hiring. These results indicate that technological adaptation is critical for the competitiveness of enterprises.

Compared to other studies, the results of the research confirm those by C. Pang (2021), who noted that management reforms in the era of artificial intelligence require new approaches and strategies. In addition, the study by A.B. Shtrikov *et al.* (2022) addressed the application of the Kaizen system in HRM, emphasising that continuous process improvement is an important aspect of ensuring management efficiency. In contrast, Z. Smirnova *et al.* (2021) addressed the role of the digital economy in the management of organisations but did not analyse the direct impact of AI on management processes. This suggests a need for further research on the impact of new technologies on HRM. Y. Tao *et al.* (2023) demonstrated how positioning technologies can be implemented in HRM, but did not address the issue of AI. This created opportunities for future research that could explore the integration of AI with other technologies in HRM in more detail. T. Wang & Y. Cheng (2024) highlighted the importance of intelligent HR systems for ensuring security in enterprises. However, it is necessary to explore how AI can improve these systems in the context of HRM.

A. Vajpayee & K. Ramachandran (2019) emphasised the importance of AI in knowledge management, stating that for the successful implementation of new technologies, it is necessary to increase the level of knowledge of HR managers. K. Veeraiah *et al.* (2022) also addressed AI, but in the context of financial management, which indicates the diversity of its application in various aspects of management. This emphasises the need for an interdisciplinary approach to the study of AI in HRM. The analysis by Q. Xue (2022) confirmed the practical application of AI and big data in HRM, although the need for a deeper understanding of the impact of these technologies on the cultural and organisational aspects of HRM is present. Y. Yang (2021) addressed the development of computer networks in the context of HRM but does not account for how these technologies can collaborate with AI to improve HR processes. Y. Ye (2020) studied HR information systems but does not address innovative technologies such as AI, which indicates the need for further research.

T. Zbrytska & O. Soroka (2021) emphasised the importance of digital transformation in HRM but do not discuss specific technologies that can be implemented, which opens space for further research in this area. Lastly, J. Zhang & Z. Chen (2024) analysed the digital transformation of HRM in the new environment, which

emphasises the need to adapt to the new challenges and opportunities faced by organisations in the digital age. The findings highlight the importance of continuing research in the field of HRM. It is necessary to conduct a detailed analysis of the impact of specific AI technologies on various aspects of HRM. This could include studying the impact of AI on employee motivation, engagement, and productivity.

Further research should consider the possibility of training HR managers in new technologies, which will allow them to use them more effectively in practice. This is consistent with the findings of A. Vajpayee & K. Ramachandran (2019) on the need to improve the skills of specialists in this area. In conclusion, it is worth noting that in the context of rapid technological development, organisations should be prepared to adapt their HR strategies to new realities. This will not only increase management efficiency but will also contribute to the development of innovative approaches in HRM. Thus, the study emphasises the importance of integrating new technologies into HRM to improve the efficiency of HR management. The findings confirmed the conclusions of other authors, but also point to the need for further research, especially in the context of the introduction of artificial intelligence. In conclusion, it is important to note that in the face of constant change in the world of technology, organisations must be prepared to adapt their HR strategies to remain competitive. These findings are important for the further development of HRM, as they point to the need for continuous improvement of technologies and approaches to HRM, which can be useful not only for the academic community but also for practitioners in the field.

Digital technologies are becoming a fundamental element in modern human resource management, helping to automate processes, increase efficiency, and provide new opportunities for strategic staff development. One of the main drivers of this transformation is AI. The use of AI in the recruitment process allows companies to reduce the time required to find and select candidates by analysing large amounts of data. This approach minimises the human factor, reduces the likelihood of errors and ensures a more objective selection process. In the context of automating routine tasks, artificial intelligence is becoming a powerful tool for creating more efficient HR procedures. Big data also provides significant benefits to HR managers, allowing them to make decisions based on objective indicators and forecasts. Using data on employee productivity, competencies and career development allows for more personalised development and performance strategies. Data analysis helps to identify trends and predict possible problems, such as the risk of staff turnover or reduced productivity. As a result, companies can take proactive measures to retain talent and improve the overall work environment. Cloud-based HR management platforms provide centralised access to data and tools,

facilitating their use regardless of the location of the company or its employees. This increases the flexibility of the organisation, allowing it to quickly adapt to changes in the external environment. Cloud-based solutions can integrate various technologies, including learning management systems, performance tracking and feedback, which helps to create a single information space for human resource management. Automation of routine tasks, such as CV pre-assessment or interview scheduling, is becoming another important component of HR digital transformation. Chatbots and other automated tools help to significantly reduce the workload of HR departments, freeing up time for more complex and strategic tasks. Such innovations not only reduce the time it takes to complete operational processes but also ensure a high level of accuracy and efficiency, which has a positive impact on the efficiency of the entire organisation. The introduction of digital technologies in the field of human resource management creates preconditions for the strategic transformation of HR functions. On the one hand, the automation of routine processes and the use of big data can improve the efficiency and accuracy of decisions. On the other hand, new technologies create opportunities for deeper analysis of staff needs, increased engagement and retention of talent, and the creation of a more flexible and adaptive organisation.

■ Conclusions

Digital technologies have significantly transformed human resource management and professional training. They facilitate process automation, improve workplace efficiency, and simplify communication between employees and management. The implementation of learning management systems, artificial intelligence, and cloud platforms significantly enhances the quality of education by providing access to up-to-date knowledge and skills. This is particularly crucial in a rapidly evolving digital environment, where not only theoretical knowledge but also critical thinking, adaptability, and communication skills are essential. One of the key advantages of modern digital solutions is the personalisation of learning. Intelligent platforms analyse student performance and adapt materials to their specific needs, thereby increasing learning efficiency

and engagement. Virtual and augmented reality further expand learning opportunities by simulating real-life scenarios without health or resource risks. These technologies are especially beneficial in fields such as medicine and engineering. Digital tools also have a substantial impact on human resource management. AI facilitates the automation of recruitment processes by analysing resumes and predicting candidate suitability. Cloud technologies enhance communication and collaboration within organisations, which is particularly relevant for companies with global teams. Mobile platforms enable employees to interact efficiently with HR systems, review schedules, submit leave requests, and access essential information in real time.

A study conducted among Rozetka employees demonstrated that the introduction of digital tools significantly improved their professional competencies. Specifically, workplace efficiency increased from 65% to 85%, while communication skills improved from 70% to 90%. These findings confirmed that digital solutions streamline project management, enhance communication quality, and increase task execution flexibility. The integration of modern technologies into HR training programs represents a crucial step in preparing professionals capable of operating effectively in a digital environment. The use of LMS, cloud solutions, and AI in education enables workforce training to align with the actual demands of the labour market. This approach fosters the development of professional competencies and enhances organisational competitiveness. Prospects for further research include studying the impact of digital technologies on the educational process in different types of educational institutions and developing new methods that would consider the specifics of teaching in the context of modern challenges.

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■ Conflict of Interest

None.

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Сучасні цифрові технології в управлінні персоналом: вплив на професійну підготовку фахівців

Володимир Носаченко

Кандидат педагогічних наук, доцент
Університет Григорія Сковороди в Переяславі
08401, вул. Сухомлинського, 30, м. Переяслав, Україна
<https://orcid.org/0000-0003-0266-5199>

Дмитро Носаченко

Аспірант
Університет Григорія Сковороди в Переяславі
08401, вул. Сухомлинського, 30, м. Переяслав, Україна
<https://orcid.org/0009-0009-1624-4548>

■ **Анотація.** Метою дослідження був порівняльний аналіз діяльності фахівців до та після впровадження цифрових технологій. Методологія дослідження включала експеримент і порівняльний аналіз із використанням систем управління навчанням, хмарних платформ для співпраці та штучного інтелекту в рекрутингу. Основні результати дослідження засвідчили, що цифрові платформи та автоматизовані системи суттєво покращують навчальний процес, особливо в таких ключових аспектах, як рекрутинг, адаптація нових співробітників, оцінка їхньої продуктивності та розвиток необхідних компетенцій. Завдяки використанню штучного інтелекту та великих даних компанії мають змогу точніше визначати потреби в навчанні, проводити детальніший аналіз ринкових тенденцій і прогнозувати можливі ризики, що в результаті сприяє підвищенню якості прийняття стратегічних рішень. Ці технології дозволяють освітнім установам впроваджувати сучасні методики навчання, які базуються на індивідуалізації підходу до студентів та фахівців. Однією з важливих переваг цифрових рішень є підвищення рівня задоволеності студентів і працівників завдяки гнучким навчальним графікам та можливостям дистанційного навчання. Це значно покращує внутрішню комунікацію та знижує рівень стресу серед учасників навчального процесу. Виявлено, що такі платформи також підвищують лояльність студентів до закладів освіти, сприяють їхній ефективності та дозволяють швидше пристосуватися до умов сучасного ринку праці. Отримані результати відкривають нові можливості для подальшого розвитку навчальних програм у сфері управління персоналом. Зокрема, інтеграція цифрових платформ та автоматизованих систем навчання допомагає розробляти освітні стратегії, що відповідають викликам цифрової економіки. В результаті фахівці стають конкурентоспроможними та підготовленими до реальних викликів професійної діяльності

■ **Ключові слова:** автоматизація; інновації; навчання; компетенції; трансформація