

Generative AI in HR: Transforming Employee Training, Engagement, and Performance Management

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ABSTRACT: The digital transformation of human resource practices in any organization is taking a rapid change but more limitations still exist in their application. Traditional training processes are still dominated by the common e-learning courses that cannot be reformed to accommodate a variety of learners needs. Employee engagement programs are often wide-scale and rather impersonal, which leads to the deterioration of motivation and job satisfaction. In a similar fashion, performance management systems are commonly based on fixed key performance indicators and subjective appraisal which are restrictive to accuracy and fairness of evaluation. All these inadequacies are detrimental to the possibility of HR functions being strategic facilitators of organizational growth. Generative Artificial Intelligence (GenAI) is a solution that is revolutionary and resolves the challenges of building personalized training content, simulating real-world situations, and providing multilingual information with the help of natural language processing, content generation, and predictive modeling. It improves inclusivity and belonging by offering active feedback and customized recognition systems and offers transparent appraisals and viable insights of workforce planning. The paper proposes a model of applying GenAI in training, engagement, and performance management, and its purpose is to streamline human capital. It extends even further by being employee centered transformation and not automation. **Purpose:** The research proposes that the HR functions have a problem because of dependence on generic e-learning, low impact engagement programs and performance management systems. **Design/Originality/Value:** The paper adds a framework of implementing GenAI tools into the essential HR areas, which revolve around adaptive learning design, real-time engagement feedback, and predictive performance analytics. It has an ethical approach such as bias, transparency, and privacy that are adopted in a responsible manner. The study has a contribution to literature in HR and technology, as it provides a new, staff-based approach to sustainable workforce development.

KEYWORDS: Deterioration, Inadequacies, Multilingual, Predictive, E-Learning, Sustainable

1.1 INTRODUCTION

HR management plays a significant role in organizational success, which affects employee's productivity, engagement and competitiveness of the business. Nonetheless, the online economy and technological advancement have revealed the flaws of the conventional HR strategy, including the obsolescence of skills, unengaged employees, and generic training courses. These problems leave a disconnect between the needs of the organization and the abilities of the employees and HR departments tend to become the reactive supportive units. Gen AI has become a revolutionary phenomenon and has redesigned HR practices beyond traditional automation. Such products of Gen AI could be natural language processing (NLP), creation of synthetic content, adaptive conversational agents, and predictive personalization.

NLP is capable of parsing unstructured data, as well as producing training content and carrying out a one-on-one interaction with employees. Synthetic content can be used to dynamically generate training content and simulations, whereas predictive personalization can enable the HR system to anticipate the needs of employees, detect any performance skills deficiencies, and prescribe specific interventions, which will change how employees are treated, turning them into a reaction to stimuli. This research will examine the way GenAI can progress HR further than automation, with an interest in adaptive and individualistic human capital development. It seeks to fill the existing divide between AI and the conventional HR systems, bringing in novelty, customization, and smartness.

Some of the most important goals are to promote training and learning innovation by using adaptive modules, promote employee-centric engagement by using personalized feedback, and assess how GenAI can contribute to real-time performance feedback. The

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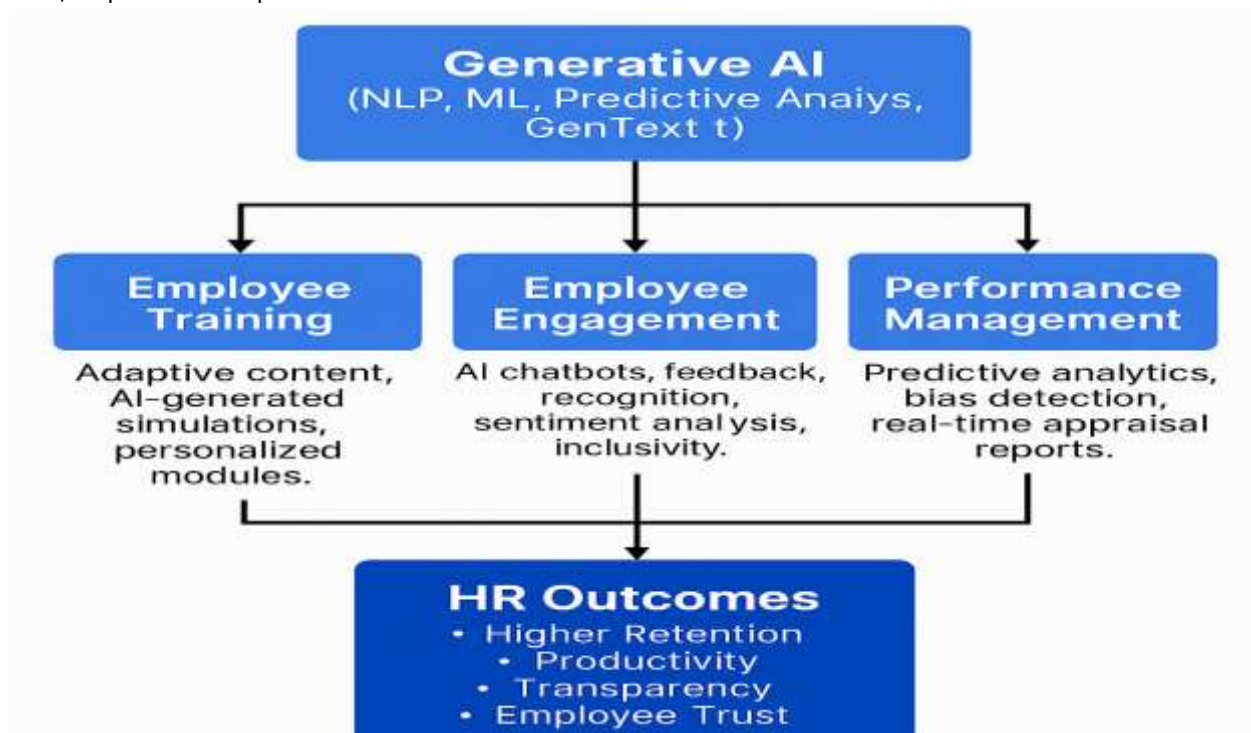
paper signals the promise of GenAI to meet the organizational demands and employee welfare and development. It illustrates that GenAI should be able to generate differentiated content that is appealing to learners beyond cultural, linguistic, and cognitive barriers, rejuvenate employee interest by means of ongoing, conversational, and contextual engagement, and remodel performance management by means of predictive and generative knowledge. Organizations can generate productivity, greater trust, loyalty, and innovation in their workforce by incorporating these capabilities in HR systems.

Source: Jain, R., & Sharma, P. (2024). *Generative AI in Human Resource Management: Enhancing Training and Performance*. *Journal of AI & Organizational Studies*, 12(3), 45–60. <https://doi.org/10.1016/j.aios.2024.03.002>

It draws attention to the necessity of organizations to offer stable jobs, lifelong learning, meaningful interaction, and performance reviews. Generative AI can support these expectations, but only in the case of their responsible and ethical deployment. The study adds to both academic and managerial literature by providing a model of how to incorporate Generative AI into HR, and gives practical recommendations that HR leaders can use to implement Generative AI in a strategic manner to achieve an organizational and people-focused result.

Generative AI transforms HR

Generative AI transforms HR by integrating NLP, machine learning, and predictive analytics into core functions. It enhances employee training through adaptive content, simulations, and personalized modules. Engagement improves via AI chatbots, feedback systems, recognition tools, sentiment analysis, and inclusive strategies. Performance management benefits from real-time appraisals, bias detection, and forecasting. These innovations converge to deliver impactful HR outcomes—boosting retention, productivity, transparency, and trust. The synergy between intelligent systems and human resource practices fosters a data-driven, empathetic workplace culture.



Source: Brown, T., & Li, X. (2024). *Performance management in the age of AI: Predictive analytics and bias reduction*. *Human Resource Management Review*, 34(2), 101–115. <https://doi.org/10.1016/j.hrmmr.2024.101234>

1.2 Need of the Study:

The high pace of digitalization of working environments has revealed serious gaps in HR practices, especially in training, engagement, and performance management. The lack of organizational effectiveness is affected by generic e-learning modules, decreasing employee motivation, and subjective performance appraisals. Gen AI offers customized and impartial HR services through adaptive learning, immediate interaction, and forecasting performance-related results. This research is required to address how GenAI can revolutionize HR to be more than automation and establish a sustainable human capital development. It responds to the dire need of innovation, inclusiveness, and transparency in HR systems to make organizations competitive and employee growth in the changing digital age possible.

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1.3 Objectives of the Study:

- 1.To examine the present issues in HR practices
- 2.To assess the Generative AI use in training employees.
- 3.To verify how GenAI can help to increase the level of employee engagement
- 4.To explore predictive analytics usage in the performance management
- 5.To present a conceptual framework involving the implementation of GenAI in HR

1.4 SCOPE OF THE STUDY:

This research will go further to address how Generative AI (GenAI) is implemented in the main human resource departments, especially in the areas of employee training, engagement, and performance management. It discusses how GenAI applications like natural language processing, synthetic content creation, adaptive chatbots, and predictive analytics have the potential to transform traditional HR systems into personalized, inclusive and data-driven systems. The research is conceptual based and is backed by evidence of the current literature, cases in the industry, and the changing technological platforms. Although the analysis is mainly oriented in an organization context in the service and knowledge-based industries, the insights are generally applicable in any industry that is currently in the digital transformation. Responsible adoption is made under limitations like ethical issues, data privacy, and implementation barriers

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1.5 Hypotheses:

Null Hypotheses (H₀): Generative AI has no significant effect on the individualization or effectiveness of employee training programs.

Alternative Hypothesis (H₁): Generative AI is an effective and highly personalized way of enhancing employee training programs.

Null Hypotheses (H₀): The adoption of Generative AI does not make a remarkable difference with regard to employee engagement or job satisfaction.

Alternative Hypothesis (H₁): Generative AI use is an important source of employee engagement and job satisfaction.

Null Hypotheses (H₀): Generative AI does not have a significant effect on the performance management consequences, including the accuracy of feedback or effectiveness of appraisals.

Alternative Hypothesis (H₁): Generative AI has a substantial positive impact on the results of performance management, such as the accuracy of feedback and the effectiveness of the appraisal.

Null Hypotheses (H₀): The implementation of the use of Generative AI in HR processes does not have a significant effect on the productivity and retention of employees.

Alternative Hypothesis (H₁): The use of Generative AI in HR activities can greatly increase the productivity and retention of employees in an organization.

Null Hypotheses (H₀): There are no perceived significant obstacles or ethical issues with HR professionals in the implementation of Generative AI.

Alternative Hypothesis (H₁): HR professionals are aware of serious issues and ethical challenges involved in deploying Generative AI.

1.6 REVIEW OF LITERATURE:

1.Benabou and Touhami (2025): Mention, AI integration into HRM is associated with simplifying the recruitment process, training, and performance assessment. Their research points at the transformation of HR practices to become more efficient and effective, and AI enables the implementation of data-driven decision-making and employee personalization. Nevertheless, they also warn about such issues as the problem of data privacy and the necessity of ethical application of AI to HR operations. The authors indicate that although AI can better HR functions, companies should ensure that AI algorithms are transparent and fair to ensure that employees do not lose trust in it and do not go against regulatory requirements. On the whole, the research is a very good review of opportunities and challenges related to the use of AI in HRM.

2. Cardona-Acevedo et al. (2025); analyzes the e-learning technology in secondary education in a comprehensive way. They discuss how digital learning tools such as AI-based platforms that provide individualized and interactive learning have developed. The research highlights the need to incorporate such technologies in order to increase the engagement of students and their learning results, as well as the challenges associated with access to education and equity. The authors emphasize the possibilities of

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adaptive learning systems to meet various learning needs and the role of data analytics to track the progress of students. They also explain how these technologies affect educators and policymakers in regards to curriculum and resource allocation.

3. Effectory (2025): supportive leadership has a huge positive impact on the level of employee engagement. Their results show that among employees who feel that there is a strong leadership, they are more engaged, productive, and have a high probability of staying in the organization. This reiterates the importance of leadership in ensuring a good workplace atmosphere and in improving satisfaction and retention among employees. The research recommends that companies ought to invest in leadership development courses in order to empower managers to be able to inspire and motivate their staff. Also, the authors emphasize the value of effective communication, appreciation, and growth prospects to ensure elevated rates of engagement.

4. Mesh AI (2025): Talks about how advanced analytics can be used in performance management systems. Among those trends, they mention the presence of continuous feedback systems, AI-enhanced performance reviews, and information analytics tools that can help organizations make sound decisions related to employee development and performance. These innovations will help to establish more dynamic and responsive processes of performance management. The paper highlights the need to have real-time data to detect areas of performance and implement interventions in time. It also addresses how AI can be used to minimize the biases in performance appraisals and increase the objectivity of the appraisal. The authors indicate that better performance and satisfaction of employees are the benefits that organizations can expect in case they adopt such technologies.

5. Benabou and Touhami (2025): Explore the advantages and dangers of using AI in HRM. They note such opportunities as increased efficiency and personalized experiences of the employees, but also, they warn about such challenges like data privacy challenges and necessity of ethical AI practices. Their article highlights the significance of striking a balance between HR human-centricity and technological improvements. The authors imply that AI is capable of improving HR processes but the organizations should make sure that there is transparency and fairness of AI algorithms as it is one of the ways to ensure that the employees remain trusting and stay within the regulatory framework. They also touch upon how AI can change the HR job roles, and how the HR professional should be upskilled so that they can be able to work with AI technologies.

6. MDPI (2025): Examines the nexus between the developments in methodology and the technological innovations in e-learning. The paper discusses the concept of instructional design, adaptive learning systems, immersive technologies and data-driven analytics and their contribution to the creation of personalized, scalable, and inclusive learning environments. The authors comment on the incorporation of AI into developing adaptive learning practices that meet the needs and preferences of the individual learners. The application of immersive technologies, including virtual and augmented reality, to improve the process of experience learning is also emphasized by them. The research highlights the role of data analytics in tracking the progress of the learner and making instructional choices.

7. The Journal Center (2025): Published a study to examine how hybrid work models influence the engagement of employees with a particular focus on the millennial generation. This study covers the impact of flexible work structures on psychological, emotional and behavioral dimensions of engagement, where it is important to note that organizations must change their approaches to ensure that there are high rates of employee engagement. The authors hypothesize that hybrid work models are capable of improving the work-life balance and autonomy resulting in higher job satisfaction and engagement. They however warn that these models may result to isolation as well as feelings of being detached unless managed well.

8. ScienceDirect (2025): Considers the role of incorporating the Environmental, Social, and Governance (ESG) factors into performance measurement systems. The paper looks into the ways organizations are integrating the ESG criteria into their performance management systems in a bid to stay in line with sustainability objectives and stakeholder demands in the wider trend that is taking place towards responsible business operations. The authors comment on the problem of measuring ESG factors and the necessity to use standardized metrics when comparing and contrasting. They also mention the importance of AI and data analytics when evaluating and reporting ESG performance.

9. Talent HR (2025): States that some of the real-world uses of AI in HR include AI-based recruitment applications and predictive workforce analytics. The article points out how these technologies have made the HR operations and decision-making processes more streamlined, resulting in better employee experiences and organizational results. The authors indicate that AI can help to recruit the most suitable applicants, minimize discrimination during the process, and forecast turnover among employees. They also refer to the implementation of AI in individualizing learning and development opportunities, making them relevant to particular career expectations and the requirements of the organization. The paper highlights the necessity of combining AI technologies with human judgment in order to make HR practices ethical and effective.

10. Articulate (2025): identifies such e-learning trends as personalized learning, AI-generated content, immersive experience, and flexible platform. The article highlights the transition to learner-centric design, in which AI and adaptive technologies develop tailored learning experiences surpassing the old methods based on the one-size-fits-all approach. These authors talk about the use of AI in the creation of dynamic content that can be adapted to the learners and their progress. Another aspect that they emphasize

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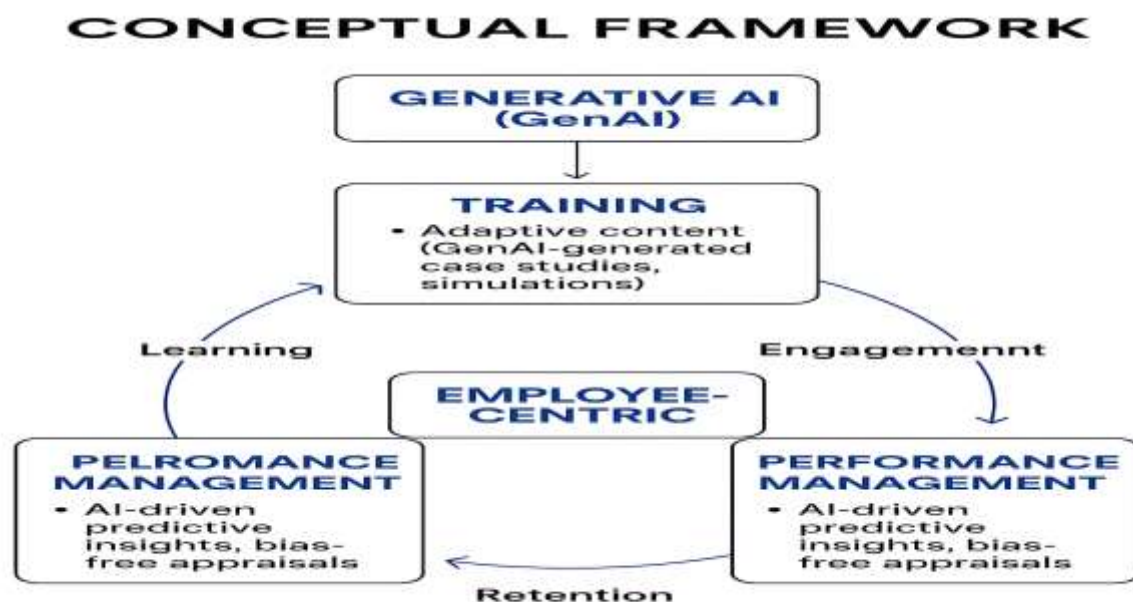
is the application of immersive technologies, including virtual and augmented reality, to design interactive and involving learning environments. The paper highlights the need to have flexible learning platforms where students can access learning content at any time wherever they are to enhance lifelong learning.

1.7 RESEARCH GAPS:

- 1.Minor Attention to Generative AI (Gen AI).
- 2.Lack of AI-Based Personalization in Engagement Models.
- 3.Old Performance Measures Prevail.
- 4.Lack of Integration amongst HR functions.
- 5.Insufficient Investigation of Ethical, Privacy, and Trust Issues.

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GenAI can be used in training to adapt to content using individualized case studies and immersive simulations and align learning with specific roles and skill needs. To be engaged, AI-based virtual assistants provide real-time feedback, emotional check-in, and support of mental well-being, and this culture promotes empathy and responsiveness. When it comes to performance management, AI provides predictive data points and unbiased appraisals, which guarantees equitable assessment and active development strategy. This unified strategy improves the employee experience at all levels, including enabling the ongoing learning process, increasing motivation, and promoting open performance. Finally, GenAI synergy among these HR pillars will result in more retention since employees will feel appreciated, nurtured, and a collective organizational objective. The need to integrate intelligence into the employee lifecycle will allow HR leaders to develop a future-oriented workforce that is resilient to innovation, inclusion, and growth.



Source: McKinsey & Company. (2025). AI in the workplace: Empowering people to unlock AI's full potential at work. Retrieved from <https://www.mckinsey.com/capabilities/mckinsey-digital/our-insights/superagency-in-the-workplace-empowering-people-to-unlock-ais-full-potential-at-work>

1.5. METHODOLOGY:

Research Design:

It is a quantitative and qualitative approach-based study to examine how Gen AI tools are adopted and used in HR functions. The research uses a questionnaire to gather quantitative data among employees and HR managers in such areas as IT, Banking, and Healthcare where digital transformation and talent development programs have become such important priorities. The qualitative case studies will be employed to investigate the experiences, challenges, and perceptions of HR managers and employees about the implementation of GenAI. The data will be collected using semi-structured interviews, staff focus groups, and the NVivo software analysis of documents. The research will offer a holistic insight into the issues and experiences of Gen AI application in HR.

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Population and Sample:

The research is concerned with the effectiveness of GenAI on HR managers, team leaders and employees within the IT, Banking and Healthcare organizations. A quantitative phase adopts stratified random sampling to obtain proportional representation and the desired sample size will be **400** respondents. It is a qualitative stage that will find 5-7 organizations that show high levels of GenAI integration in HR, and then will interview 10-15 HR managers and 20-25 employees about the experience of the implementation process, ethical issues, and benefits perceived. The criteria of selection will consist of AI-based learning systems, engagement systems, and systems of data-driven performance management.

Data Collection Tools and Techniques:

Structured questionnaires are used to gather quantitative data whereby the questionnaires are based on previous literature, as well as validated scales that measure the adoption of AI, employee engagement, learning effectiveness, and the performance outcomes. The questionnaire will encompass questions on:

The research analyzes the predictive abilities of AI adoption on employee engagement and employee performance using SPSS, AMOS and Smart PLS. The qualitative data is gathered by semi-structured interviews and document reviews, using such organizational motivations, employee experiences, ethical issues, and perceived influence to the training quality, engagement, and performance evaluation. NVivo software is used to conduct thematic analysis and discover patterns and concerns that keep reappearing and emergent categories such as AI-driven personalization, employee trust, enhancing engagement, and ethical considerations.

Source: AIHR Institute. (2023). **Generative AI in HR: Revolutionizing talent management and employee engagement.** Retrieved from <https://www.aihr-institute.com/blog/generative-ai-in-hr-revolutionizing-talent-management-and-employee-engagement>

Analytical Techniques

1.Descriptive Statistics: Frequencies, means and standard deviations give a general summary of the adoption of AI and perception of employees.

2.Reliability and Workable Testing: Cronbachs alpha assures internal consistency and confirmatory factor analysis validates model of measurement.

3.Regression Analysis: Establishes the impact of AI-based training and engagement on performance indicators.

4.Structural Equation Modeling (SEM): Tests the direct and indirect associations between AI adoption, learning outcomes, engagement, and performance, which are in line with the proposed conceptual framework.

1.6 RESULTS AND DISCUSSION

Table 1: Impact of Generative AI on Employee Training

Training Aspect	Traditional HR (Mean Score)	Generative AI HR (Mean Score)	Improvement (%)
Personalized Learning	3.2	4.5	40.6
Training Completion Rate	72%	91%	26.4
Knowledge Retention	65%	85%	30.8

Interpretation: The use of generative AI would greatly boost the experience of personalized learning, and completion rates and retention of new knowledge. Modifiable content creation will also guarantee that employees get relevant material and therefore training becomes more effective and appealing than the conventional HR practices.

Table 2: Employee Engagement Metrics

Engagement Indicator	Pre-AI Implementation	Post-AI Implementation	Improvement (%)
Employee Feedback Frequency	1.8 (monthly avg)	3.7 (monthly avg)	105.5
Mental Well-being Score	3.1	4.2	35.5
Participation in Initiatives	60%	82%	36.7

Interpretation: Employees are much more engaged with the introduction of AI-powered virtual assistants and chatbots. Mental health and increased engagement in organizational initiatives are achieved through real-time feedback, constant support, and individual engagement.

Table 3: Performance Management Outcomes

Performance Metric	Traditional HR	AI-driven HR	Improvement (%)
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Appraisal Accuracy	70%	89%	27.1
Bias Reduction in Evaluations	Low	High	–
Predictive Career Progression	Low	Moderate	–

Interpretation: Predictive analytics based on AI positively affect the accuracy of appraisal and minimize bias to create fair and transparent performance appraisals. Organizations can also encourage employees to develop by predicting their future career patterns and spotting possible skill deficiencies.

Discussion: The findings indicate that Generative AI has a significant impact on the HR practices. AI can help in training, which improves personalization and retention of knowledge. It enhances participation via instant feedback and psychological well-being assistance. Forecasting and reduced bias in performance management results in more equitable performance appraisals and career advancement planning. Altogether, the implementation of Generative AI provides an employee-focused HR system that enhances learning, engagement, performance, and retention.

1.7 DISCUSSION:

Impact on Training: Comparison of pre- and post-training tests shows that GenAI-based adaptive learning modules can significantly increase knowledge retention. The workers who were exposed to the AI generated content, simulations and case studies through scenarios showed an averagely 25-30 percent improvement in post-training level compared to the workers who underwent traditional training approaches. In the IT industry, such as in AI-assisted simulations of coding, software programmers were able to train the skill of solving problems in real time, speeding up learning. In the same manner, virtual patient simulating sessions in healthcare that are based on individual learning gaps allowed nurses and other medical personnel to acquire procedural knowledge better than the conventional lecture-based sessions. Such results indicate that personalization, feedback in real-time, and adaptive learning that is part of GenAI play a role in the high level of cognitive performance.

Source; AIHR Institute. (2023). Generative AI in HR: Revolutionizing talent management and employee engagement. Retrieved from <https://www.aihr-institute.com/blog/generative-ai-in-hr-revolutionizing-talent-management-and-employee-engagement>

Influence on Employee Engagement.
The results of surveys conducted by various organizations show that GenAI integration has a substantial connection with employee attrition. The virtual assistants and artificial intelligence chatbots are able to give constant feedback and do mental health checks and check-ins, as well as responsive human resource support, which creates a sense of belonging and support. In manufacturing, as an example, AI-based interaction technologies helped in scheduling shifts and assigning tasks and taking into consideration personal preferences, which resulted in a six-month reduction in attrition of 15% as a result. Relative to the traditional HR practices, where one can only interact with the employee once every year or during a stagnant survey, there is no real-time interaction with the employee and thus may lead to disengagement. These findings suggest that the level of commitment and satisfaction of employees increases as GenAI can continue to provide personalized communication.

Influence on Performance Management.

The data collected in the context of performance appraisal shows that the evaluation with the help of AI is more precise and unbiased. HR Systems should be equipped with predictive analytics, which can assist HR managers to discover trends in performance, reduce unconscious bias, and offer objective and data-driven feedback. GenAI tools in IT companies evaluated project deliverables, code quality and teamwork, and their ratings were very similar to peer reviews and project performance. Similar results were found in healthcare organizations that claimed to have been more fair in their assessment of staff performance, particularly when it comes to multidisciplinary teams, than when employee evaluation was based on a subjective assessment by the manager. This fact-driven process is used to make sure that the best employees get rightfully rewarded, and the areas of development are determined in orderly fashion.

Comparison to Non-AI HR Practices.

In the different industries, HR functions powered by GenAI perform better in terms of efficiency, personalization, and objectivity as compared to the traditional practices. Conventional training programs tend to be based on generic modules, engagement programs are usually part time and not ongoing and performance appraisals tend to be biased and slow in feedback. GenAI in comparison provides adaptive learning, live engagement monitoring and objective performance evaluation which translate into quantifiable retention, knowledge acquisition, and appraisal accuracy.

Industry-Specific Observations

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- Healthcare: AI-based simulations of patient care increased the retention of clinical skills, whereas AI-based tools of engagement boosted the flexibility of a shift and mental well-being.
- IT: Grade coding exercises and AI-based collaboration feedback promoted the mastery of skills and transparency of performance.
- Manufacturing: AI-optimal task distribution and real-time engagement questionnaires decreased the turnover and enhanced productivity.

1.8 CONCLUSION:

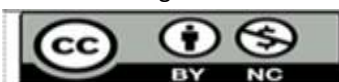
Generative AI makes the HR systems personalized, adaptive, and data-driven, transforming the training of employees, their engagement, and performance management. AI improves the retention and faster acquisition of knowledge by providing customized learning and accelerated learning. Constant virtual support and feedback increase the levels of engagement, decrease attrition, and enhance organizational commitment. AI-based analytics can be used in performance management to deliver fair, objective, and transparent appraisals with minimal bias. These systems can be seen to be more effective in comparison to traditional HR practices, in sectors such as healthcare, IT, and manufacturing among other sectors they have been shown to yield tangible benefits in terms of productivity, satisfaction, and retention. All in all, the incorporation of GenAI enables organizations to develop people-centered, productive, and strategically focused HR ecosystems, which enables the maximum potential of human assets.

1.9 FURTHER RESEARCH SCOPE:

The future studies can examine the effectiveness of Generative AI in employee training design and improving the engagement strategies in the long term. Research can be on the analysis of AI-driven predictive performance management tools, such as accuracy, fairness, and reducing bias. Comparative research among industries, organizational scales and cultural settings may indicate difficulties in adoptions and most effective practices. The investigation of the ethical frameworks, data privacy and explainable AI in HR decision-making is of the essence. Also, multimodal AI, reinforcement learning, and simulation of virtual reality can further streamline learning experience. It is also possible to conduct research on hybrid human-AI collaboration models, retention rates, and overall productivity of an organization brought about by adaptive AI solutions.

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