



The Role Of Gamification In Electronic Human Resource: A Mini Review

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ABSTRACT

Electronic human resource management (HRM) in businesses is significantly impacted by gamification. It gives employers an opportunity to draw in and keep workers while also converting repetitive tasks into engaging activities and boosting staff productivity. HR procedures like hiring, training, adaption, motivation, performance management, and staff appraisal have all benefited from the use of gamification techniques and tools. Employee development, training costs, and engagement can all be improved by gamification in HRM systems. Employee motivation and engagement are raised, training effectiveness is increased, and employees' critical capabilities are developed and enhanced. For the purpose of hiring, gamification can also be used to draw in and evaluate qualified IT candidates. General benefits of gamification in electronic HRM include higher productivity, loyalty, and job happiness. The study of effective search tactics for SLRs in the management sciences has produced methodological patterns pertaining to transparency and replicability. An alternative method is to examine previous literature review articles on the subject matter to generate keywords, which lessens prejudice and guarantees transparency and comprehensiveness. This approach has been tried and tested in the domain of operational risk management, making it easier to come up with keywords for a multidisciplinary strategy. Furthermore, organizing a literature evaluation is crucial for expanding knowledge and choosing journals for a theoretical basis in fields like energy management. Information seekers in management research might find guidance by following a methodical approach to doing a literature search on web-based databases. The aim of the current study is to do a literature review on the topic of role of gamification in electronic human resource management.

Keywords: gamification, mini-review, and electronic human resource management

INTRODUCTION

The application of game features outside of games is known as gamification.[1] It has been used in a variety of industries, including social media, online communities, education, and consultancy. [2] Through game features like story, challenge, progression, and feedback, gamification has been shown to engage and encourage students in higher education.[3] A gamification platform, where badges were awarded based on the assessment of other employees, was utilized in a consulting firm to encourage staff to put in more work [4]. In order to improve user engagement, brand awareness, and loyalty, gamification has also been applied in online communities and social media platforms.[5]

Electronic human resources management

Using technology to support successful and efficient HR procedures, the field of electronic human resources management, or e-HRM, is one that is quickly developing [6]. It includes carrying out the duties of the human resources department through the use of computer systems, interactive electronic media, and communication networks [7]. Implementing HR policies and practices with the help of E-HRM has benefits including more efficiency, lower administrative expenses, and better service provision [8]. Corporate entrepreneurship has been found to benefit from it, and it can help organizations become more entrepreneurial [9]. Decision-making and departmental cooperation have been demonstrated to be enhanced by E-HRM in the hotel sector [10]. Generally, digital HRM enables businesses to handle and retain information more effectively, change with the times, and execute.[11]

The relation between gamification and electronic hrm

In the area of human resource management (HRM), the concept of gamification is being used more and more [12]. It is the process of converting non-gaming events into stimulating and captivating activities by utilizing game mechanics and aspects [13]. Selective, training, adaptive, motivating, performance management, and staff appraisal are just a few of the HRM procedures that have been discovered to benefit from gamification [14]. In addition to improving employee development, it can draw in and keep talent and raise staff productivity [15]. Furthermore, gamification can lower training expenses and boost staff participation in training initiatives when used to HRM.[16] Proper method and tool selection, together with alignment with the company's HR management philosophy and culture, are necessary for the successful integration of gamification into HRM systems.[17]

Understanding Gamification in Electronic Human Resources

In electronic human resources (HR), gamification is the use of gaming features to non-gaming aspects of HR procedures and processes.[18] In order to accomplish business objectives, it seeks to boost worker productivity, draw in and keep talent, and inspire worker action [19]. Gamification has the power to improve employee engagement, motivation, job happiness, and productivity while also making mundane work less boring.[20] Additionally, it can help disseminate an organization's missions and beliefs among staff members and enhance the organization's public image [21]. Gamification may have both intentional and unforeseen effects on employees' motivation and creative output, therefore its integration into HRM systems should be carefully evaluated [22]. Further research is required to fully understand the innovative technology of gamification in HRM.[23]

In today's digital age, gamification has emerged as a powerful tool in various domains, including electronic human resources.

Electronic human resources is among the fields where gamification has shown to be a potent instrument.[24] In addition to fostering a lively and interesting work atmosphere, it can raise employee sense of autonomy, competence, and relatedness [25]. Through the use of gamified platforms, stakeholders can virtually experience what it's like to be in a relationship with an organization.[26] This opens up new possibilities for participatory storytelling and gives insight into the culture, identity, and basic values of the organization [27]. Training and development procedures, including working with the personnel reserve, are among the processes in personnel management where gamification can be applied [28]. Incorporating gamification into HRM can improve motivation, job satisfaction, and productivity, reduce monotony in jobs.[29]

Incorporating Play: Boosting Engagement through Gamification

Engaging employees and increasing productivity are two benefits of gamification in a variety of environments.[30] In order to incentivize users to engage in desirable activities, non-gaming apps can be made to incorporate game principles and dynamics through gamification [31]. As traditional approaches may not engage students emotionally, it can be especially useful in e-learning [32]. As demonstrated in the instance of medical sales agents, gamification can enhance user engagement and learning results in offline training programs [33]. Students' engagement levels increased and their performance on knowledge and skill evaluations improved when gamification elements were added [34]. When traditional tactics present difficulties, gamification might be utilized in higher education to boost student engagement and teamwork.[35] Gamification has the potential to improve learning outcomes and engagement across a range of scenarios.[36]

Leveraging Game Mechanics to Enhance HR Processes

Gamification is a technique that makes use of game mechanics to improve HR procedures. [37] It has been shown to boost employee engagement and motivation, as well as staff productivity [38]. Many HR procedures, including hiring, training, adjustment, motivation, performance management, and staff appraisal, can benefit from gamification [39]. Businesses can boost employee engagement, lower training expenses, and enhance staff development efficiency by adding gaming components into these procedures [40]. Gamification's efficacy in HR procedures is supported by important motivational theories as Operant Conditioning, Goal Setting Theory, Need Satisfaction Theories, and Flow.[41] Gamification can also assist in resolving issues with employee engagement and motivation in a variety of HR domains, such as hiring, training, team development, and administrative.[42]

The Impact of Gamification on Talent Acquisition and Retention

Retaining and acquiring talent is positively impacted by gamification [43]. As a result, customer satisfaction and organizational performance are raised [44]. It also aids in staff engagement and competency promotion.[45] Employees are motivated and their requirements, whether internal or external, are met when ordinary chores are gamified into engaging and meaningful activities [46]. At the individual, work, and organizational levels, it also improves employee engagement.[47] To improve employee motivation, retention, and involvement, gamification can be applied to a variety of personnel management procedures, including training and development, employee adaption, and candidate selection.[48] It saves installation time and expense, decreases the number of routine tasks, and improves transparency and understandability of processes.[49] Employee retraining and turnover can be addressed using gamification of training, which offers a variety of training options and supports.[50]

Enhancing Employee Training with Gamification Strategies

Strategies for gamification have the potential to improve employee training by raising engagement and intrinsic motivation [51]. Organizations can link extrinsic and intrinsic motivation by implementing gamification features like experience points and progress bars, which will improve training outcomes [52]. Additionally, gamification can help workers improve their soft skills, which include resilience, cooperation, decision-making, and openness to change [53]. Perceived utility, perceived usability, and social impact are among the factors that affect employees' acceptance of gamification in training and development initiatives [54]. Incorporating gamification into employee training can help with reskilling and turnover while also fostering teamwork, career development, and employee retention [55]. Furthermore, gamification and big data analytics combined can enhance worker performance, especially for heavy equipment operators in mining companies.[56]

Using Gamification to Improve Performance Management

For IT administrators looking to enhance performance management systems, gamification presents a viable option.[57] Research indicates that it has a favorable effect on employees' perceptions of the organization, workplace pressures, and the performance management system, which in turn affects their overall job performance.[58] To improve student motivation, engagement, and performance in higher education, gamification can also be used [59]. Web-based gamification has been demonstrated to be an effective means of enhancing student conduct and discipline in the context of performance assessments [60]. Better learning outcomes have been achieved in engineering courses by using gamification to build interesting learning environments and boost motivation [61]. Furthermore, gamification can be used to oversee assignments and projects for academic credit, encouraging learners to finish their work by the due date and enhancing performance [62].

Gamification and Its Role in Employee Recognition Programs

Employee engagement and motivation are increased by gamification, which is why gamification is important for employee appreciation programs.[63] It gives employees a sense of purpose and appeal by transforming mundane chores into meaningful activities [64]. Gamification employs game elements and dynamics, such points, achievements, and bonuses, to favorably affect people's desires and behavior [65]. Organizations can improve individual, job, and organizational engagement by gamifying employee recognition programs [66]. Employee performance is enhanced and organizational outcomes are contributed to by gamification's ability to help employees grow their skills and abilities [67]. Furthermore, gamification has the potential to enhance employee engagement and collaboration across a range of organizational domains, such as project management, team-building, and training [68]. Overall, employee recognition programs can be completely transformed by gamification, which is a potent weapon.[69]

Innovative Approaches to Employee Well-being: Gamification in HR

An inventive strategy for HR's focus on worker well-being is gamification.[70] In order to boost employee engagement and productivity, it entails incorporating gaming aspects into workplace performance and learning [71]. Many HR procedures, including hiring, training, adjustment, incentive, performance management, and staff appraisal, can benefit from gamification [72]. It has been demonstrated to improve task performance, learning, and staff engagement [73]. Gamification has the potential to decrease training expenses, boost program participation, and enhance the effectiveness of the staff development procedure [74]. On the other hand, little research has been done on how well gamification can help employees enhance their soft skills [75]. The design, influencing variables, experience results, and sustainability of gamification in HRD require more investigation.[76]

Measuring the Effectiveness of Gamification in Human Resources

Employee motivation, engagement, and productivity have all been found to increase with gamification in HR [77]. Regular work can be made more engaging with its help, as demonstrated by studies, which increases job satisfaction and lowers turnover.[78] Performance management, staff evaluation, training, motivation, adaptability, and recruitment are just a few HR procedures where gamification can be used [79]. Employers may raise awareness of their brand, increase application quality, and draw in qualified individuals by implementing game components.[80] Comparing the percentage results before and after gamification is implemented allows one to determine how effective it is.[81] Furthermore, gamification can help an organization project a positive image and disseminate its missions, values, and visions to its workforce.[82]

Future Trends: Gamification as a Staple in HR Technology

Gamification's potential to boost employee productivity, draw in new hires, and encourage non-gaming activities is becoming more widely acknowledged in HRM systems [83]. By gamifying HRM procedures, gamification can lower training expenses, boost employee engagement, and improve employee development programs' effectiveness [84]. It can help employees recognize their skills and limitations and turn those flaws into strengths.[85] Gamification is very helpful in employee training and development [86]. Gamification offers an approach to measure technical talents in the context of digital transformation and can be used to both attract and evaluate talented IT candidates [87]. Within the topic of human resource development (HRD), gamification has also been explored, with applications in task performance, employee wellbeing, and emerging settings.[88]

CONCLUSION

Electronic human resource management (HRM) benefits greatly from gamification since it boosts worker productivity, draws in and keeps talent, and turns repetitive tasks into engaging games. [89] Gamification has been shown to improve worker motivation and output, which helps the company reach its objectives [90]. Gamification has been shown to be beneficial in HRM procedures like hiring, training, adapting, motivating employees, performance management, and staff appraisal [91]. In the end, gamification lowers the expenses related to recruiting new staff by enhancing employee engagement, loyalty, and talent management [92]. The choice of suitable techniques and resources, as well as the company culture and HR management philosophy, are necessary for the effective application of gamification.[93]

REFERENCES

1. Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011, September). From game design elements to gamefulness: defining "gamification". In Proceedings of the 15th international academic MindTrek conference: Envisioning future media environments (pp. 9-15).
2. Johnson, C. M. (2001). A survey of current research on online communities of practice. *The internet and higher education*, 4(1), 45-60.
3. Alsawaier, R. S. (2018). The effect of gamification on motivation and engagement. *The International Journal of Information and Learning Technology*, 35(1), 56-79.
4. Maan, J. (2013). Social business transformation through gamification. arXiv preprint arXiv:1309.7063.
5. Kankanhalli, A., Taher, M., Cavusoglu, H., & Kim, S. H. (2012). Gamification: A new paradigm for online user engagement.
6. Girisha, M. C., & Nagendrababu, K. (2019). E-Human resource management (E-HRM): A growing role in organizations. *International Journal of Management Studies*, 6(1/5), 98-104.
7. AlHamad, A., Alshurideh, M., Alomari, K., Kurdi, B., Alzoubi, H., Hamouche, S., & Al-Hawary, S. (2022). The effect of electronic human resources management on organizational health of telecommunications companies in Jordan. *International Journal of Data and Network Science*, 6(2), 429-438.
8. De Alwis, A. C., Andrić, B., & Šostar, M. (2022). The Influence of E-HRM on modernizing the role of HRM context. *Economies*, 10(8), 181.
9. Phan, P. H., Wright, M., Ucbasaran, D., & Tan, W. L. (2009). Corporate entrepreneurship: Current research and future directions. *Journal of business Venturing*, 24(3), 197-205.
10. Alqarni, K., Agina, M. F., Khairy, H. A., Al-Romeedy, B. S., Farrag, D. A., & Abdallah, R. M. (2023). The Effect of Electronic Human Resource Management Systems on Sustainable Competitive Advantages: The Roles of Sustainable Innovation and Organizational Agility. *Sustainability*, 15(23), 16382.
11. Fenech, R., Bagueant, P., & Ivanov, D. (2019). The changing role of human resource management in an era of digital transformation. *Journal of Management Information & Decision Sciences*, 22(2).
12. Ērgle, D., & Ludviga, I. (2018, September). Use of gamification in human resource management: impact on engagement and satisfaction. In 10th International Scientific Conference "Business and Management (pp. 409-417).
13. Rodrigues, L. F., Oliveira, A., & Rodrigues, H. (2019). Main gamification concepts: A systematic mapping study. *Heliyon*, 5(7).
14. Ikhide, J. E., Timur, A. T., & Ogunmokun, O. A. (2023). A balanced perspective on the affordance of a gamified HRM system for employees' creative performance. *Personnel Review*, 52(3), 631-648.
15. Bhatnagar, J. (2007). Talent management strategy of employee engagement in Indian ITES employees: key to retention. *Employee relations*, 29(6), 640-663.
16. Murawski, L. (2021). Gamification in human resource management—Status quo and quo vadis. *German Journal of Human Resource Management*, 35(3), 337-355.
17. Negruşa, A. L., Toader, V., Sofică, A., Tutunea, M. F., & Rus, R. V. (2015). Exploring gamification techniques and applications for sustainable tourism. *Sustainability*, 7(8), 11160-11189.
18. Mashina, E. (2023, November). Gamification in the Personnel Management of a Self-learning Organization. In International Conference on Professional Culture of the Specialist of the Future (pp. 212-230). Cham: Springer Nature Switzerland.

19. Al Jasmi, S. (2012). A study on employees work motivation and its effect on their performance and business productivity (Doctoral dissertation, The British University in Dubai (BUiD)).
20. Cardador, M. T., Northcraft, G. B., & Whicker, J. (2017). A theory of work gamification: Something old, something new, something borrowed, something cool?. *Human resource management review*, 27(2), 353-365.
21. Ahmady, G. A., Nikooravesh, A., & Mehrpour, M. (2016). Effect of organizational culture on knowledge management based on Denison model. *Procedia-Social and Behavioral Sciences*, 230, 387-395.
22. Behl, A., Jayawardena, N., Ishizaka, A., Gupta, M., & Shankar, A. (2022). Gamification and gigification: A multidimensional theoretical approach. *Journal of Business Research*, 139, 1378-1393.
23. Murawski, L. (2021). Gamification in human resource management—Status quo and quo vadis. *German Journal of Human Resource Management*, 35(3), 337-355.
24. Polyanska, A., Andriiovych, M., Generowicz, N., Kulczycka, J., & Psyuk, V. (2022). Gamification as an improvement tool for HR management in the energy industry—a case study of the Ukrainian Market. *Energies*, 15(4), 1344.
25. Earle, H. A. (2003). Building a workplace of choice: Using the work environment to attract and retain top talent. *Journal of facilities management*, 2(3), 244-257.
26. Seiffert-Brockmann, J., Weitzl, W., & Henriks, M. (2018). Stakeholder engagement through gamification: Effects of user motivation on psychological and behavioral stakeholder reactions. *Journal of Communication Management*, 22(1), 67-78.
27. Tanouri, A., Kennedy, A. M., & Veer, E. (2022). A conceptual framework for transformative gamification services. *Journal of Services Marketing*, 36(2), 185-200.
28. VINICHENKO, M. V., RIDHO, T. K., KIRILLOV, A. V., MELNICHUK, A. V., & MELNICHUK, Y. A. (2017). Application of innovative technologies for working with personnel reserve in higher education institutions of Russia and Indonesia. *Revista ESPACIOS*, 38(56).
29. El-Menawy, S. M. A., & Abdelaziz, M. (2022). Analyzing employees' perceptions of using artificial intelligence and gamification in HRM practices on employee's job insecurity. *The Business and Management Review*, 13(2), 246-261.
30. Miri, D. H., & Macke, J. (2022). Gamification, motivation, and engagement at work: a qualitative multiple case study. *European business review*, 34(2), 263-276.
31. Mauroner, O. (2019). Gamification in management and other non-game contexts—understanding game elements, motivation, reward systems, and user types. *Open Journal of Business and Management*, 7(4), 1815-1830.
32. Shen, L., Wang, M., & Shen, R. (2009). Affective e-learning: Using “emotional” data to improve learning in pervasive learning environment. *Journal of Educational Technology & Society*, 12(2), 176-189.
33. Liu, S., Ma, G., Tewogbola, P., Gu, X., Gao, P., Dong, B., ... & Wu, Y. (2023). Game principle: enhancing learner engagement with gamification to improve learning outcomes. *Journal of Workplace Learning*.
34. Puritat, K. (2019). Enhanced Knowledge and Engagement of Students Through the Gamification Concept of Game Elements. *International Journal of Engineering Pedagogy*, 9(5).
35. Subhash, S., & Cudney, E. A. (2018). Gamified learning in higher education: A systematic review of the literature. *Computers in human behavior*, 87, 192-206.
36. Malone, M., Wang, Y., James, K., Anderegg, M., Werner, J., & Monrose, F. (2021, March). To gamify or not? on leaderboard effects, student engagement and learning outcomes in a cybersecurity intervention. In *Proceedings of the 52nd ACM Technical Symposium on Computer Science Education* (pp. 1135-1141).

37. Chen, E. T. (2015). The gamification as a resourceful tool to improve work performance. *Gamification in education and business*, 473-488.
38. Almawali, H., Hafit, N. I. A., & Hassan, N. (2021). Motivational Factors and Job Performance: The Mediating Roles of Employee Engagement. *International Journal of Human Resource Studies*, 11(3), 6782-6782.
39. Bizzi, L. (2023). Why to gamify performance management? Consequences of user engagement in gamification. *Information & Management*, 60(3), 103762.
40. Ruhi, U. (2016). Level up your strategy: Towards a descriptive framework for meaningful enterprise gamification. *arXiv preprint arXiv:1605.09678*.
41. Mitchell, R., Schuster, L., & Jin, H. S. (2020). Gamification and the impact of extrinsic motivation on needs satisfaction: Making work fun?. *Journal of Business Research*, 106, 323-330.
42. Obaid, I., Farooq, M. S., & Abid, A. (2020). Gamification for recruitment and job training: model, taxonomy, and challenges. *IEEE Access*, 8, 65164-65178.
43. Larson, K. (2020). Serious games and gamification in the corporate training environment: A literature review. *TechTrends*, 64(2), 319-328.
44. Ibrahim, M., & Yusheng, K. (2020). Service innovation and organisational performance: Mediating role of customer satisfaction. *International Journal of Management & Entrepreneurship Research*, 2(3), 97-108.
45. Shahid, A., & Azhar, S. M. (2013). Gaining employee commitment: Linking to organizational effectiveness. *Journal of management research*, 5(1), 250.
46. McIntyre, D. (2018). Can Gamification Increase Employee Engagement in a New Zealand Context?.
47. Uddin, M. A., Mahmood, M., & Fan, L. (2019). Why individual employee engagement matters for team performance? Mediating effects of employee commitment and organizational citizenship behaviour. *Team Performance Management: An International Journal*, 25(1/2), 47-68.
48. Obaid, I., Farooq, M. S., & Abid, A. (2020). Gamification for recruitment and job training: model, taxonomy, and challenges. *IEEE Access*, 8, 65164-65178.
49. AISkaif, T., Lampropoulos, I., Van Den Broek, M., & Van Sark, W. (2018). Gamification-based framework for engagement of residential customers in energy applications. *Energy Research & Social Science*, 44, 187-195.
50. Sidana, A., Jayasuria, J. G., Cavaliere, L. P. L., Babu, S. R., Kavitha, M., & Balaji, P. The Intersection of Human Resource Management and Automation: Opportunities and Challenges for HR Professionals. *Robotics and Automation in Industry 4.0*, 244-259.
51. Pereira, M., Oliveira, M., Vieira, A., Lima, R. M., & Paes, L. (2018). The gamification as a tool to increase employee skills through interactives work instructions training. *Procedia computer science*, 138, 630-637.
52. Silic, M., & Lowry, P. B. (2020). Using design-science based gamification to improve organizational security training and compliance. *Journal of management information systems*, 37(1), 129-161.
53. Gimenez-Fernandez, E., Abril, C., Breuer, H., & Gudixsen, S. (2021). Gamification approaches for open innovation implementation: A conceptual framework. *Creativity and Innovation Management*, 30(3), 455-474.
54. Vanduhe, V. Z., Nat, M., & Hasan, H. F. (2020). Continuance intentions to use gamification for training in higher education: Integrating the technology acceptance model (TAM), social motivation, and task technology fit (TTF). *IEEE Access*, 8, 21473-21484.
55. Moore, M. G. (2022). Strategies for Attracting and Retaining Highly Skilled It Professionals for the High-Tech Workforce (Doctoral dissertation, Walden University).

56. Shimaponda-Nawa, M., & Nwaila, G. T. (2024). Integrated and intelligent remote operation centres (I2ROCs): Assessing the human-machine requirements for 21st century mining operations. *Minerals Engineering*, 207, 108565.
57. Bizzi, L. (2023). Why to gamify performance management? Consequences of user engagement in gamification. *Information & Management*, 60(3), 103762.
58. Ikhida, J. E., Timur, A. T., & Ogunmokun, O. A. (2022). The potential and constraint of work gamification for employees' creative performance. *The Service Industries Journal*, 42(5-6), 360-382.
59. Subhash, S., & Cudney, E. A. (2018). Gamified learning in higher education: A systematic review of the literature. *Computers in human behavior*, 87, 192-206.
60. Bai, S., Hew, K. F., & Huang, B. (2020). Does gamification improve student learning outcome? Evidence from a meta-analysis and synthesis of qualitative data in educational contexts. *Educational Research Review*, 30, 100322.
61. Ortiz-Rojas, M., Chiluzza, K., & Valcke, M. (2019). Gamification through leaderboards: An empirical study in engineering education. *Computer Applications in Engineering Education*, 27(4), 777-788.
62. Sanchez, D. R., Langer, M., & Kaur, R. (2020). Gamification in the classroom: Examining the impact of gamified quizzes on student learning. *Computers & Education*, 144, 103666.
63. Silic, M., & Back, A. (2017, March). Impact of gamification on user's knowledge-sharing practices: Relationships between work motivation, performance expectancy and work engagement. In Silic, M., & Back, A. (2017, January). *Impact of Gamification on User's Knowledge-Sharing Practices: Relationships between Work Motivation, Performance Expectancy and Work Engagement*. In *Proceedings of the 50th Hawaii International Conference on System Sciences*.
64. Spanellis, A., Dörfler, V., & MacBryde, J. (2020). Investigating the potential for using gamification to empower knowledge workers. *Expert Systems with Applications*, 160, 113694.
65. Nasirzadeh, E., & Fathian, M. (2020). Investigating the effect of gamification elements on bank customers to personalize gamified systems. *International Journal of Human-Computer Studies*, 143, 102469.
66. Bizzi, L. (2023). Why to gamify performance management? Consequences of user engagement in gamification. *Information & Management*, 60(3), 103762.
67. Benitez, J., Ruiz, L., & Popovic, A. (2022). Impact of mobile technology-enabled HR gamification on employee performance: An empirical investigation. *Information & Management*, 59(4), 103647.
68. Nah, F. F. H., Eschenbrenner, B., Claybaugh, C. C., & Koob, P. B. (2019). Gamification of enterprise systems. *Systems*, 7(1), 13.
69. Nah, F. F. H., Eschenbrenner, B., Claybaugh, C. C., & Koob, P. B. (2019). Gamification of enterprise systems. *Systems*, 7(1), 13.
70. Salvadorinho, J., & Teixeira, L. (2023). Happy and Engaged Workforce in Industry 4.0: A New Concept of Digital Tool for HR Based on Theoretical and Practical Trends. *Sustainability*, 15(3), 2781.
71. Grünwald, H., Kneip, P., & Kozica, A. (2019). The use of gamification in workplace learning to encourage employee motivation and engagement. *The Wiley handbook of global workplace learning*, 557-575.
72. Bizzi, L. (2023). Why to gamify performance management? Consequences of user engagement in gamification. *Information & Management*, 60(3), 103762.
73. Basit, A., Hassan, Z., Omar, N., Sethumadavan, S., & Jhanjhi, N. Z. (2021). Gamification: A Tool To Enhance Employee Engagement And Performance. *Turkish Online Journal of Qualitative Inquiry*, 12(5).

74. Obaid, Iqra, Muhammad Shoaib Farooq, and Adnan Abid. "Gamification for recruitment and job training: model, taxonomy, and challenges." *IEEE Access* 8 (2020): 65164-65178.
75. Gupta, M., Behl, A., & Kumar, Y. L. N. (2022). "Prevention is better than cure": challenges in engaging employees through gamification. *International Journal of Manpower*, 43(2), 380-394.
76. Benitez, J., Ruiz, L., & Popovic, A. (2022). Impact of mobile technology-enabled HR gamification on employee performance: An empirical investigation. *Information & Management*, 59(4), 103647.
77. HAMZA, I., SAROLTA, T., & SHATILA, K. (2022). The effect of gamification on employee behavior: The mediating effects of culture and engagement. *The Journal of Asian Finance, Economics and Business*, 9(5), 213-224.
78. Lu, L., Lu, A. C. C., Gursoy, D., & Neale, N. R. (2016). Work engagement, job satisfaction, and turnover intentions: A comparison between supervisors and line-level employees. *International Journal of Contemporary Hospitality Management*, 28(4), 737-761.
79. Nikolaou, I., Georgiou, K., & Kotsasarlidou, V. (2019). Exploring the relationship of a gamified assessment with performance. *The Spanish Journal of Psychology*, 22, E6.
80. Negrușă, A. L., Toader, V., Sofică, A., Tutunea, M. F., & Rus, R. V. (2015). Exploring gamification techniques and applications for sustainable tourism. *Sustainability*, 7(8), 11160-11189.
81. Hanus, M. D., & Fox, J. (2015). Assessing the effects of gamification in the classroom: A longitudinal study on intrinsic motivation, social comparison, satisfaction, effort, and academic performance. *Computers & education*, 80, 152-161.
82. Torresan, S., & Hinterhuber, A. (2023). Continuous learning at work: the power of gamification. *Management Decision*, 61(13), 386-412.
83. Ikhide, J. E., Timur, A. T., & Ogunmokun, O. A. (2022). The potential and constraint of work gamification for employees' creative performance. *The Service Industries Journal*, 42(5-6), 360-382.
84. Benitez, J., Ruiz, L., & Popovic, A. (2022). Impact of mobile technology-enabled HR gamification on employee performance: An empirical investigation. *Information & Management*, 59(4), 103647.
85. Balan, A. C., & Cavendish, K. (2017). Leadership in the Digital and Social Era-A Theoretical Review and Digital Gamification for Employee Development.
86. Landers, R. N., Auer, E. M., Helms, A. B., Marin, S., & Armstrong, M. B. (2019). Gamification of adult learning: Gamifying employee training and development. *The Cambridge handbook of technology and employee behavior*, 271-295.
87. Tansley, C., Hafermalz, E., & Dery, K. (2016). Talent development gamification in talent selection assessment centres. *European Journal of Training and Development*, 40(7), 490-512.
88. Torresan, S., & Hinterhuber, A. (2023). Continuous learning at work: the power of gamification. *Management Decision*, 61(13), 386-412.
89. Polyanska, A., Andriiovych, M., Generowicz, N., Kulczycka, J., & Psyuk, V. (2022). Gamification as an improvement tool for HR management in the energy industry—a case study of the Ukrainian Market. *Energies*, 15(4), 1344.
90. Chen, E. T. (2015). The gamification as a resourceful tool to improve work performance. *Gamification in education and business*, 473-488.
91. Vardarlier, P. (2021). Gamification in human resources management: An agenda suggestion for gamification in HRM. *Research Journal of Business and Management*, 8(2), 129-139.

92. Pandey, P., Menezes, J., & Pandey, A. Gamification in HR Practices: A Pathway to Sustainable Transformation. In *Disruptive Artificial Intelligence and Sustainable Human Resource Management* (pp. 209-231). River Publishers.
93. Friedrich, J., Becker, M., Kramer, F., Wirth, M., & Schneider, M. (2020). Incentive design and gamification for knowledge management. *Journal of Business Research*, 106, 341-352.

