

Gamification in human resources management and its impact on boosting employees' performance in Egypt's education sector

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Keywords

Gamification, Human Resource Management (HRM), Education Sector, Employee Engagement, Employee Performance, Game Design Elements, Organizational Culture, Implementation Challenges, Egyptian Educational Institutions, HR Professionals, Motivation, Performance Enhancement and Fairness in Gamification

Abstract

Gamification in human resource management (HRM) is emerging as a valuable tool for enhancing performance and engagement among educators in Egypt's education sector. By applying game design elements within HRM systems – such as points, leaderboards, badges, and rewards – educational institutions can create a more dynamic and motivating work environment. A survey involving 151 HR professionals will explore the integration of gamification in key HR functions and assess its perceived impact on employee performance. Preliminary findings indicate a significant positive effect of gamification on employee outcomes, though there are challenges to implementation, including alignment with organizational culture and issues of fairness and engagement. The study aims to provide practical insights for designing effective gamification strategies in HRM within Egyptian educational settings.

Introduction

The workforce is the crucial asset of any organization (Alshammari, 2020). For organizational goals to be achieved and to maintain long-term success, organizations should prioritize having the right employees that perfectly fit in with the right job at the right time. Therefore, adopting HRM is necessary, since it results in maximizing employees' performance and proficiency (Cherif, 2020). It is learned that there is a relationship between HR practices and employees' performance. HR professionals look forward to prioritizing enhancing the performance of employees by applying specific core practices, for instance, recruitment and selection, compensation and rewards, performance appraisal, training and development and employees' empowerment that leads to achieving organizational goals (Mira, Choong and Thim, 2019). Organizations should consider increasing the effect of HR functions to maintain and grow organizational competitive advantage and work with more skilled and talented workforces. Along with policy making and control activities, HRM plays a remarkable role in not just strengthening employees' performance, but also their motivation and loyalty by creating positive competitive environment within and between teams which achieves both short and long-term goals (Vardarlier, 2021). Boosting employees' performance has been challenging. Thus, HR professionals aim to discover new approaches to solve this issue (Girdauskiene, Ausrine Ciplyte and Navickas, 2022). Due to the emergence of technology, the adoption of gamification into different sectors has been remarkable (Christopoulos and Mystakidis, 2023). Likewise, there's a progressive increase in using gamification in HRM for enhancing employees' efficiency. It is necessary for HR professionals to understand gamification capabilities and how they can reshape the workplace (Narang, Bhardwaj and Srivastava, 2022). Especially, when it is being adopted in the education sector in Egypt. The integration of gamification into HR practices has been gaining traction in Egypt's education sector, where attracting and retaining qualified educators is crucial with aim of improving educational quality and achieve educational institutional goals. Gamification suggests promising solutions to improve employees' performance. By utilizing game-based techniques, educational institutions will likely alter routine tasks into more entertaining, motivating and meaningful experiences, resulting in boosting employees' performance and engagement while enhancing their work experience in Egypt's education sector (El-Menawy and Abdelaziz, 2022).

Problem Statement

Maintaining employee engagement and performance in Egypt's education sector is challenging, necessitating beyond traditional HRM practices (Ergle and Ludviga, 2018). The implementation of

technology and digital techniques can enhance productivity (Polyanska, 2022). By applying game design techniques to HR processes can improve employee potential and streamline operations, from hiring to service delivery (Vardarlier, 2021; Mohanty and Christopher, 2024). Though gamification offers advantages in various dimensions, it also introduces potential negative effects, such as stress and subjective issues that warrant attention (Hammedi et al., 2021).

Research Significance

Gamification is regarded as an effective strategy to enhance HR practices by influencing employee behavior and improving performance. This transformative approach fosters an interactive work environment and incorporates elements like rewards, leaderboards, and quizzes to enhance HRM practices. It aims to promote continuous learning, teamwork, and a positive workplace culture, thereby boosting productivity, especially in Egypt's education sector. The study will offer a detailed examination of leveraging gamification in HRM, its impact on employees' motivation and performance, and provide recommendations for selecting suitable gamification techniques to meet organizational goals.

Research Aim

The research aims to investigate the adoption of gamification techniques and their integration into core HR functions. It explores effective methods for utilizing various gamification strategies to enhance employees' (Educators) performance and engagement, improve knowledge retention, and cultivate a culture of continuous growth and development in Egypt's education sector.

Research Objectives

- To investigate how gamification could help in reshaping the business environment within educational institutions, as to boost employees' productivity and engagement as well as increasing employee satisfaction and motivation.
- To discover the way gamification techniques are integrated with various HRM roles in order to enhance employees' performance and attain institutional objectives in Egypt's education sector.
- To determine the main challenges that the education sector in Egypt faces and gamification role to tackle these challenges.
- To identify and evaluate the most effective gamification techniques for boosting employees' performance, measure programme success, maximize efficacy, and further develop programs that are based on feedback within the educational institution in Egypt.

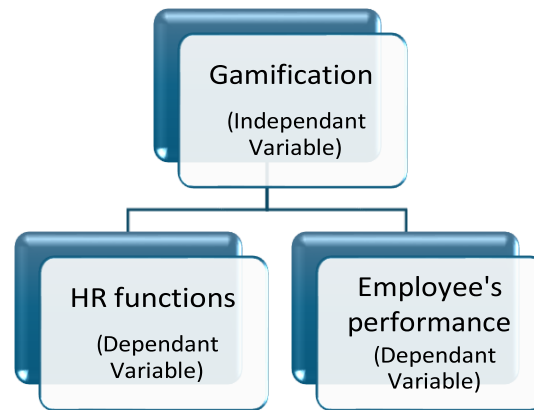
Research Questions

- How will gamification potentially reshape the work environment and improve employees' performance and their experience?
- What is the gamification role in different HRM functions and its impact on employees' and institutional performance in Egypt's education sector?
- How can gamification tackle the main challenges faced in the education sector in Egypt?
- What are the best gamification techniques that aid in improving employees' performance and engagement, and measuring the success level and employees' effectiveness in Egypt's education sector?

Research Hypothesis

- H1: Gamification positively impacts the work environment and improves employees' performance and experience in Egypt's education sector.
- H2: There is a positive relationship between integrating gamification in HRM and employees' performance and engagement.
- H3: The challenges in Egypt's education sector strongly affect employees'/educators' performance.
- H4: A positive relationship is shown between integrating gamification elements and HRM functions.

Literature review



Themes Related to Gamification and Its Impact on Reshaping the Work Environment

Gamification is increasingly popular in contemporary business, leveraging game design mechanics to fulfill human desires for socializing, self-expression, competition, and learning (Lawanda, Mohile and Sagarika Datta, 2018; Korn and Schmidt, 2015). While both games and gamification might seem similar, they fundamentally differ since games operate within a closed system with specific rules and outcomes, while gamification incorporates gaming techniques to enhance workplace routines and achieve organizational goals through a more engaging and motivating approach (Vardarlier, 2021). It's believed that Gamification is frequently implemented in areas like employee performance, personal development, and customer development, with applicability extending to education, retail, consumer goods, and information technology (Ergle and Ludviga, 2018; Koivisto & Hamari, 2019). It experiences cycles of success and failure akin to other emerging technological trends. Organizations utilizing gamification reports improved employee morale and enhanced performance. Additionally, it serves as a problem-solving tool in workplaces, helping to create a relaxed environment that facilitates smoother business processes and reduces pressure in finding solutions (Hussain et al., 2018). Likewise, Gamification theory indicates that various workplace environments can be made more engaging by altering their structure (Fischer, 2017). Organizations can leverage gamification to enhance employee engagement and drive desirable behavioral changes, particularly in motivating knowledge contributions. This approach creates a unique atmosphere characterized by game narratives, ongoing reflection, teamwork, challenges, competitiveness, and rewards. In an educational context, gamification significantly enhances interest, creativity, autonomy, participation, dialogue, and problem-solving (Pereira et al., 2018).

Additionally, Gamification positively influences employee motivation, which is crucial for performance and retention (Ratuszniak, 2021). The concept of motivation is characterized by an individual's energy to perform tasks or engage in specific behaviors, which can be categorized into intrinsic and extrinsic motivation. Intrinsic motivation is driven by personal development and a genuine interest in activities, whereas extrinsic motivation is often linked to achieving external rewards or desirable outcomes. Implementing gamification can positively influence motivation levels, thereby enhancing employee performance and relationships. Gamification serves as a dual avenue for motivational influence in organizational contexts by offering both extrinsic rewards and fulfilling intrinsic desires, such as a tendency to succeed. The prevalence of gamified software and applications is rapidly increasing across various organizational settings. Notably, gamification has proven effective in motivating employees by granting them access to visible and immediate performance feedback, as well as transforming work tasks into more enjoyable and meaningful experiences (Hammedi et al., 2021). These augmentations are designed to create a more engaging work environment, which in turn enhances performance, morale, and employees' commitment to the organization. The cohesive bonding fostered by this new business environment is expected to lead to advanced business development, increasing both profitability and productivity (Hamari, 2017). However, while perspectives on gamification's implementation tend to be optimistic, there are claims that some organizations may experience failure in adopting gamification due to a lack of comprehensive understanding of effective design practices (Wünderlich, 2020). It is crucial to acknowledge potential risks and negative effects linked to gamification techniques in management, such as increased stress, diminished employee well-being, and disengagement. Prioritizing employee mental health and well-being is vital, as these factors significantly influence productivity, engagement, morale, and job satisfaction.

(Almeida, Kalinowski, and Feijo, 2021; Hammedi et al., 2021). Effective management, along with the strategic integration of gamification into HRM, is essential for enhancing employee performance, engagement, and overall work experience, ultimately contributing to the achievement of organizational objectives and goals.

Themes Related to Gamification in Human Resource Management (HRM)

Due to technological advancements, various sectors are undergoing continuous shifts in their employee management, work processes, and performance metrics. There is a marked trend towards digitalization of tasks and processes, compelling contemporary employees to enhance their digital proficiency and seek digital systems in the workplace (Ikhida, Timur, and Ogunmokun, 2023).

Additionally, the evolution of core HR activities has seen these functions rising to a more strategic level (Posthumus, Santora, and Bozer, 2017). There is a discernible link between HR practices and employee performance, leading HR professionals to prioritize the enhancement of employee performance through innovative strategies and techniques, ultimately aimed at achieving organizational goals (Mira, Choong, and Thim, 2019). New trends in HRM highlight the integration of gamification as a strategy to address employee dissatisfaction with traditional HR practices while fostering engagement (Santos, Trevisan and Veloso, 2021). Gamification techniques, such as rewards, scores, and leaderboards, transform mundane HR activities into enjoyable experiences, promoting improved interaction and productivity. This approach empowers HR professionals to enhance their value contribution across various HR functions, including recruitment, onboarding, training, employee retention, and performance appraisal (Polyanska, 2022; Simpson and Jenkins, 2015).

Numerous organizations strive to hire talented employees but often lack effective recruitment and selection processes. Incorporating gamification elements like quests and challenges can help attract and identify potential employees, as it enhances interest in the organization and influences applicants to apply and accept job offers (Simpson and Jenkins, 2015; Georgiou et.al., 2019; Palmquist, 2023). Utilizing gamification in the selection process enhances organizational attractiveness by streamlining candidate evaluation and fostering engagement. Game-like assessments and virtual scenarios enable more accurate identification of applicants' interpersonal skills and problem-solving abilities. This modern approach not only accelerates the elimination of unsuitable candidates but also positively shapes the organization's image, which significantly influences employee commitment and retention over time (Joy and Assistant, 2017; Karadakov and Gjorgievski, 2022). Furthermore, using gamification in the onboarding process enhances hiring efficiency and employee engagement. It aids new employees in adapting to the organization by fostering motivation to learn, connecting with the environment, and feeling valued. Gamification also improves onboarding experience with rules, challenges, and feedback, leading to faster integration with colleagues (Vardarlier, 2021; Palmquist, 2023).

In the context of training and development, gamification is increasingly employed to demonstrate individual potential by imparting valuable knowledge and skills applicable to business settings. It also serves as a method for short-term assimilation, refreshing knowledge, skills, and attitudes pertinent to specific tasks in the workplace (Santos, 2021). Establishing effective training programs requires a clear understanding of their goals and purposes, which involves identifying existing performance, knowledge, or skills gaps. After determining training needs, it is crucial to consult training research literature and best practices to design the program effectively. Incorporating gamification in the training design is essential; it involves using game-like elements to enhance learner engagement and motivation, fostering progress towards objectives. Additionally, evaluating the effectiveness of gamification in fulfilling training needs through data collection is necessary (Armstrong and Landers, 2018). With rapid technological advancements, HRM must ensure employees' competencies evolve in line with these changes (Gaonkar, Khan, and Manisha, 2022). The ultimate goal of gamification is to motivate learners, thereby improving their interaction with training tasks (Kapp, Blair, & Mesch, 2014). According to various studies, gamification techniques are more effective than traditional training methods in institutional and organizational settings, enhancing knowledge retention among employees (Brull et al., 2017).

Gamification-based training programs aligned with strategic objectives aim to achieve organizational goals (Schobel et al., 2020). Research indicates that these programs, featuring elements like points, badges, and leaderboards, create a unique learning ecosystem (Kulkarni, 2022). Additionally, they facilitate learning and development, aiding employees in mastering skills while shifting away from conventional knowledge constraints (Vardarlier, 2021). Nonetheless, the implementation of gamification is sometimes hindered by a

fear of uncertainty (Magioli Sereno and Ang, 2024). Utilizing appropriate gamification elements in training can foster positive reinforcement among employees (Abuladze, 2023). Gamification has the potential to transform the performance appraisal process, enhancing employee engagement, effectiveness, and motivation. Despite potential challenges, the benefits include increased motivation, better knowledge retention, and improved employee-manager dynamics. By integrating gamification, organizations can cultivate a more productive and engaged workforce, leading to improved business outcomes and a positive workplace culture. The concept of levels in gamification provides employees with crucial feedback regarding their progress and performance, helping them identify their strengths and weaknesses (John, 2023; Uddin and Das, 2023; Abuladze, 2023). Finally, Gamification enhances employee retention by promoting engagement in meaningful activities and facilitating skill progression, with performance-based rewards (Nivedhan and Priyadarshini, 2018; Simpson and Jenkins, 2015). While some studies suggest that it may reduce employee energy, it generally contributes positively to employee satisfaction, flexibility, and creativity (Karadakov and Gjorgievski, 2022).

Themes Related to The Education Sector in Egypt

The education sector is crucial for individual and societal development, significantly influencing social and economic progress (World Bank, 2024). Ensuring continuous support and investment for employees and teaching staff is vital (Siemon and Eckardt, 2017). In Egypt, the sector grapples with several challenges, including a shortage of skilled educators, a stressful work environment, and low salaries, leading to job dissatisfaction, retention issues, and decreased motivation (Azzam, 2023; Daher and Hegazy, 2022). The hiring freeze exacerbates recruitment difficulties, while uneven educator distribution across specializations and inadequate professional development further compromise education quality. Additionally, existing inclusive education practices for training educators lack effectiveness, with only 37,400 out of the total educators receiving sufficient training. Despite these issues, opportunities for positive reform within Egypt's education sector align with the government's vision, highlighting the potential for enhancement and growth. Implementing reforms in Egypt's education sector involves several key strategies: developing comprehensive professional development frameworks, adopting new technologies, and creating a performance-based reward and promotion system alongside increased investment in teacher training. These initiatives are aimed at enhancing employee performance and retaining qualified instructors, which ultimately impacts the overall effectiveness of the education system (Daher and Hegazy, 2022; Nour, Sallam and Tallat, 2018; UNESCO, 2021). These changes aim to address longstanding challenges, improve teaching quality through revised evaluation systems, and support educators' professional personal development rather than penalizing them (Marey et al., 2020).

The Relationship Between Themes

It is recognized that educators significantly impact student outcomes, necessitating an evaluation of their work environment to ensure it is engaging and motivating. Concerns have arisen due to high turnover rates and a shortage of qualified educators (Toropova, Myrberg, and Johansson, 2021). Addressing these issues calls for HR professionals to grasp contemporary HR practices and adopt new strategies to enhance the organizational environment and improve employee performance, thereby raising educational quality and meeting institutional goals (Rasheed et al., 2016). Furthermore, technology has transformed the educational landscape, facilitated knowledge transfer and enriched the teaching and learning processes (Raja and Nagasubramani, 2018). Technological advancements have led to the implementation of modern HR techniques aimed at achieving these educational goals. Gamification, in particular, has emerged as a key strategy within the education sector by fostering employee engagement, which positively influences outcomes in education and enhances overall employee performance and experience (Kulkarni, 2022; Siemon and Eckardt, 2017; Yildiz, Topçu, and Kaymakci, 2021). Gamification has been identified as a beneficial strategy in enhancing leadership qualities, reducing stress, increasing productivity, and improving knowledge retention among educators, thereby contributing positively to educational institutions (Saranya, 2021). Its implementation requires alignment with clear learning objectives and the provision of meaningful feedback on employees' progress (Lopes, Azevedo, and Torres, 2017). In Egypt, the education sector has witnessed a rapid adoption of gamification, particularly in well-managed institutions with significant financial resources focused on development. This approach is instrumental in transforming the work environment and integrating with HRM, thereby improving HR practices. Gamification also fosters employee engagement, motivation, and productivity, making it a promising

solution for educational institutions navigating the digital age and responding to the evolving demands of their workforce (Hafez et al., 2023; Kamal and Sama, 2023).

Theories and Models That Support Gamification

Self-Determination Theory (SDT) is a key motivational framework that underpins gamification strategies by distinguishing between intrinsic and extrinsic motivation influenced by various incentives. The theory focuses on supporting innate psychological needs such as competence, relatedness, and autonomy, along with inherent growth tendencies. Intrinsic motivation arises from engaging in activities for their inherent satisfaction, while extrinsic motivation pertains to actions aimed at achieving an external outcome. Effective gamification is posited to enhance both forms of motivation during challenging tasks (Hammerschall, 2019; Kam and Umar, 2018). Recent studies indicate a growing interest in applying SDT to gamification techniques across multiple domains, reinforcing the theory's role in boosting motivation through gamification while fostering both intrinsic and extrinsic motivation (Ryan and Deci, 2020). Cognitive Evaluation Theory (CET), a subset of Self-Determination Theory (SDT), posits that interpersonal events supporting autonomy, relatedness, and competence can enhance intrinsic motivation, crucial for cognitive, social, and psychological development (Kam and Umar, 2018). Competence is vital for task performance under intrinsic motivation (Hammerschall, 2019). Gamification employs Flow

Theory, which emphasizes the balance between task challenges and individual capabilities, to boost engagement by catering to diverse skill levels (Vann and Tawfik, 2020). Another theory discussed is the Technology Acceptance Model (TAM), which addresses challenges that emerge with the adoption of new educational technology. Research indicates that gamification influences the acceptance of these technologies, leading to the use of TAM to assess employee acceptance levels of gamification (Abou Kamar et al., 2024; Vanduhe, Nat and Hasan, 2020).

Literature Gap

Through the lens of this research study, it is underpinned that there are remarkable gaps which require further exploration. As regards the potential negative impact, the long-term consequences and also the ethical implications associated with adopting gamification strategy in HRM. However, 19 this research encompasses identifiable key areas, such as the impact of gamification on employees' engagement, performance, motivation as well as its integration with multiple HRM function, which will result in affecting the educational institution image. Conversely, it is shown that there is a lack of research which addresses the undesirable consequences of gamification, for instance, stress, privacy breaches, cheating and also the subjective perception comes from employees' and their performance. Additionally, there are very few literatures that highlights how gamification in HRM is being implemented for the employees/educators in the education sector in Egypt. These gaps need to be investigated to provide a deeper comprehension of and better implication for gamification, since it impacts not just on employees' performance, but also their well-being. By discovering these areas and potentially addressing these challenges, it will pave the way for more effective at the same time entertaining work environment in the education sector in Egypt.

Methodology

As for building a research methodology, there is a theoretical concept called 'Research Onion' proposed by Saunders which provides a precise description of the major stages that will be achieved for the purpose of formulating an effective methodology (Mardiana. 2020). It starts with the description of the main philosophy, then choosing an approach depending on the philosophy. Afterwards, method definition, strategies and a time horizon will be selected. Accordingly, the research design along with the major techniques and procedures of data collection and analysis will be formulated (Melnikovas, 2018). The choice of methodology relies on the hypothesis, research questions and objectives. By addressing the research questions, the success of the methodology will be achieved. Most importantly, the questions should be valid and reliant on empirical research (Saldanha and O'Brien, 2014). This study is based on primary research that adopts a quantitative strategy by conducting an online survey, in order to ensure credibility and facilities accessibility of gathering relevant data from employees within Egypt's education sector. It is an approach where researchers start with a general area and then narrow it down to a specific area to be addressed (Choy, 2014). It will help HR professionals to make data-driven decisions about how gamification strategies will be implemented to boost employees' performance.

Moreover, this approach will provide evidence of how effective gamification in HRM is, which is important to justify investment and refining practices for employees in the education sector in Egypt (Mohanty and Christopher, 2024). Quantitative methods refer to standardized questionnaires, which will be administered to specific individuals through different sampling forms. It has the aim of investigating a specific idea through the usage of a determined scale that generates numerical values and helps in establishing correlations between variables, which will allow researchers to validate original findings. Regarding the sampling technique, probability sampling will be chosen. This technique is characterized by omitting the chance of having systematic errors as well as sampling biases. Moreover, it eases the possibility of generating findings that are statistically significant and representative of the whole population at a relatively low cost (Saunders et al., 2019, p.273 & p.430; Etikan and Bala, 2017). Data collection is the next step, which will record carefully and verify information. Data is collected from 151 HR professionals through online questionnaires, that will be analyzed using descriptive and regression analysis with the help of charts and SPSS, which determine the level of agreeability of participants as well as the relationship between variables to achieve the main objectives of the study. Finally, analyzing, evaluating and interpreting the data will be conducted. In order to draw a theory, it is important to look at the analyzed data by using background knowledge which is related to the research topic and questions (Choy, 2014; Davidaviciene, 2018).

Analysis and Discussion

The educational institutions in Egypt that do not implement gamification technique in HR practices, face challenges to retain high performing employees/educators as a result of several key factors. Based on the results, 42.4% are neutral and 35.8% disagreed that there are incentives to retain high potential educators/employees. Low salaries are one of the major factors that force many educators to seek additional income through private tutoring. Moreover, there are limited professional development opportunities as well as a lack of clear career progression paths that contribute to stagnation (Azzam, 2023; Daher and Hegazy, 2022; Marey et al., 2020). Regarding educational institutions that adopt gamification strategies in HRM, positive outcomes are shown on employees'/educators' overall performance, experience and retention in the workplace. It is shown that the majority of responses are neutral of 34.4%, and 33.1% disagreed that they struggle to retain high potential employees. Nivedhan and Priyadarshini (2018); Simpson and Jenkins (2015) stated that gamification helps in employees' retention that can be done through increasing encouragement and engagement in tasks that are meaningful, which result in the development of their knowledge and skills.

51% Agreed and 47.7% strongly agreed that gamification has impacted the work environment positively in Egypt's education sector. Karadakov and Gjorgjievski (2022) argue that gamification is a tool that has the potential to cultivate motivated, engaged and high-performing employees, which stands to position educational institutions towards success and in a competitive landscape. It is agreed by 51% of the respondents that gamification creates a dynamic and interactive work culture, which matches organizational goals along with employees' motivation, ultimately leads to improved productivity and increased satisfaction. By amalgamating game-like elements, such as points, leaderboards, badges and various gamification elements into the work processes, it transforms performing tasks into both meaningful and enjoyable as well as fosters team collaboration, engagement and motivation. Moreover, it encourages collaborative work environment where team members have the comfort to share their ideas, break down barriers and strengthen bonds. This approach promotes intrinsic motivation, which is one of the main aspects for job satisfaction, since it encourages employees to perform activities for their personal satisfaction, natural desire for recognition and inherent enjoyment (Hammed et al., 2021). However, 57% believe that gamification is accompanied with undesirable consequences. Since, employees may feel pressured to conform to peers and also favoritism might be noticed when 63 certain employees are regularly rewarded, which leads to increasing the perception of unfairness (Almeida, Kalinowski and Feijo, 2021).

As for aligning gamification with the educational institutions in Egypt objectives, it is shown that 57.6%, agreed and 35.8% strongly agreed with this. It is crucial to consider that the effectiveness of gamification relies on its implementation, for instance, if it is poorly designed, a reward system could decrease intrinsic motivation and might significantly harm job satisfaction. Thus, for successful gamification to be achieved, focusing on fulfilling employees' psychological needs for competence is a priority that will ultimately enhance their sense of purpose at work foster more interactive working environment in the educational sector in Egypt. (Karadakov and Gjorgjievski, 2022; Palmquist, 2023; Pereira et al., 2018). 64.2% of HR

participants who design gamification in Egypt's education sector agreed that they have encountered some challenges in the beginning of its implementation. Challenges faced when implementing gamification. Thus, it is necessary to follow several strategic steps when implementing gamification to align with the educational institution's objectives. By defining the clear objectives, which reflect the desired behavior and outcomes. Accordingly, choosing the gamification technique that can be integrated in each HR function, such as points, badges, levels or challenges that perfectly align with these goals. Taking into consideration to align gamification with the educational institution culture, while giving employees the chance to be involved in the design process and collecting their feedback. Additionally, use of metric and analytics to track the level of performance along with allowing data-driven adjustment (Lopes, Azevedo and Torres, 2017; Schobel et al., 2020).

Regarding gamification practices, for instance, virtual scenarios, leaderboard, levels and various gamification elements that are integrated in HR functions for the aim of enhancing employees'/educators' performance in Egypt's education sector, it is proven that they are effective in recruitment and selection, onboarding as well as training and development, performance appraisal and employees' retention with ranges from 55% - 70%, which indicates high agreeability level among HR respondents. Virtual scenarios and points systems give recruiters the opportunity to evaluate employees' skills. Additionally, this approach improves candidates' experience as well as portray a good image for the educational institutions. Gamification elements such as quizzes, budgets and leaderboards have a significant impact on enhancing employees' motivation and positive reinforcement in training, since it alters traditional training into a dynamic 64 experience, which boosts job performance, learning outcome as well as foster a culture of continuous learning and innovation (Karadakov and Gjorgjievski, 2022; Kulkarni, 2022; Polyanska, 2022). This proves that gamification elements are positively correlating with HR practices in the educational sector in Egypt.

By integrating these elements in more educational institutions in Egypt's education sector, they can build a dynamic and motivating learning environment, which will lead to boost employees'/educators' performance and development. Based on the conducted survey, the majority of HR professionals 51.7% agreed and 37.7% strongly agreed that it is recommended to implement gamification in other educational institutions in Egypt, since it plays a prominent role in enhancing employees' engagement and productivity as well as improving knowledge retention and personal development. Lopes, Azevedo and Torres (2017) argues that there is a remarkable opportunity that gamification will become more prevailing within the education sector in Egypt, since it enhances employees'/educators' performance, engagement and learning outcomes as well. By integrating gamification elements in educational institutions, motivation will be boosted, the learning experience will be enhanced, which will result in significant improvement in employees' development as well as the educational institution performance.

Conclusion

Contemporary technologies like gamification in HRM have become significant for talent identification and development, as explored in a systematic literature review. This study summarizes existing literature on gamification's impact on the work environment, identifies effective gamification elements for various HR functions, and addresses challenges in Egypt's education sector. It highlights supporting theoretical frameworks and provides empirical evidence of gamification's positive effects on employee behavior and performance. Additionally, the study identifies literature gaps and conducts an online questionnaire targeting HR professionals to further investigate the gamification impact in Egypt's education sector. The survey results indicate that implementing gamification in HRM within Egyptian educational institutions significantly enhances employees' performance, engagement, and productivity. The quantitative study found a clear correlation between gamification integration and improved work experiences, suggesting it is a powerful tool for fostering motivation. However, challenges arise in aligning gamification with institutional goals, and it may lead to stress and unhealthy competition. Despite these drawbacks, the positive impact on most employees points to the potential for broader adoption of innovative HR practices to address motivation and engagement issues, contingent on proper alignment with institutional objectives and employee needs.

Recommendations

Improving performance in Egypt's education sector necessitates a multifaceted strategy that focuses on HRM, professional development, and collaboration with the private sector. This approach should integrate

inclusive education principles into curricula, enhance professional development for educators, and empower the Ministry of Education to implement effective inclusive policies. Effective HRM practices that align with institutional goals can enhance academic staff satisfaction and engagement. Additionally, a strong performance evaluation system that offers constructive feedback and supports professional growth is crucial for identifying areas for improvement and recognizing educators' potential.

To ensure fairness and promote healthy competition in gamified environments, organizations should establish transparent rules, equitable rewards based on performance, and prioritize personal development. Aligning gamification strategies with institutional goals, catering to individual preferences, and providing immediate feedback can enhance employee engagement and motivation in professional development. Implementing gamified training programs fosters collaboration through peer-to-peer learning and encourages sharing best practices. Additionally, using digital platforms for gamified assessments can facilitate timely improvements in teaching methods and student engagement strategies. Developing clear metrics to assess the effectiveness of gamification strategies in education is essential. Regular assessments should be conducted to refine initiatives based on feedback from teaching staff and students. Ongoing research is necessary to identify the impact of gamification on educators' performance and educational outcomes, which will aid in scaling successful initiatives across Egypt's education sector (Mohanty and Christopher, 2024).

Limitations

Limitations related to risks in implementing gamification in HRM have been identified, focusing on methodology and sample size. Although it is acknowledged that aligning gamification with educational institutions' objectives and understanding the characteristics and preferences of employees or educators enhances implementation, potential risks associated with its design and execution remain a critical consideration (Sailer and Homner, 2020). Gamification, while potentially beneficial for boosting short-term performance and motivation, can pose challenges if not tailored to all employees or educators. Poorly designed gamification may lead to confusion, hinder creativity, and negatively impact employee engagement through forced participation. Misalignment with institutional values and a focus on extrinsic rewards can undermine intrinsic motivation (Hammedi et al., 2021). Additionally, it can cause stress and decrease self-esteem, particularly when feedback is not constructive, leading to demotivation. Long-term effectiveness necessitates a balanced approach that encourages both competition and collaboration (Algashami et al., 2019). Finally, Employees may experience stress from privacy invasion and social overload, leading to 'gamification exhaustion' (Kacerauskas et al., 2023). The study's methodology, using cross-sectional data, restricts conclusions about the long-term effects of gamification in HRM (Bitrian et al., 2023). Additionally, the quantitative research method bears drawbacks such as potential biases affecting data validity, and lack of depth and context, as it relies on numerical data. These issues may lead to unreliable results if sampling or measurements are incorrect (Savela, 2018). Despite these challenges, they present opportunities for future research.

Future Work

It is suggested to have a more comparative study that compares employees/educators' performance before and after implementing gamification in HRM. It would also be useful to have a comparative study between the implementation of Egypt's education sector and other countries, since it will significantly stretch the research scope. Moreover, further empirical research is required, in terms of investigating and assessing the academic staff performance and engagement when gamification is applied on them and how does it improve the work environment with educational institutions in Egypt. Finally, there is a need for further research into literature to discover the negative consequences and the long-term impact of gamification on employees.

Appendix:

Statistics				
		Gender	Age	Tenure
N	Valid	151	151	151
	Missing	0	0	0
Mean		1.54	2.58	2.71
Median		2.00	2.00	3.00
Mode		2	2	3
Std. Deviation		.500	1.061	.984
Variance		.250	1.126	.968
Range		1	4	3
Percentiles	25	1.00	2.00	2.00
	50	2.00	2.00	3.00
	75	2.00	3.00	3.00

Statistics							
		Gamification has positively impacted the work environment.	Gamification affects the sense of purpose and job satisfaction.	Gamification has influenced team dynamics, motivation and collaboration in your workplace.	Gamification is designed to align with the main objectives of the educational institution you work in.	I would recommend other educational institutions to implement gamification to improve employees' engagement and productivity.	I have experienced negative consequences of gamification in your workplace, such as unhealthy competition, stress or favoritism.
N	Valid	151	151	151	151	151	151
	Missing	0	0	0	0	0	0
Mean		1.54	1.59	1.63	1.73	1.75	1.97
Median		2.00	2.00	2.00	2.00	2.00	2.00
Mode		2	2	2	2	2	2
Std. Deviation		.526	.614	.607	.642	.711	.916
Variance		.277	.377	.368	.412	.506	.839
Range		2	3	3	3	3	4
Percentiles	25	1.00	1.00	1.00	1.00	1.00	1.00
	50	2.00	2.00	2.00	2.00	2.00	2.00
	75	2.00	2.00	2.00	2.00	2.00	2.00

Statistics								
		Gamification is effective in attracting and selection of potential candidates.	Gamification has significantly increased the onboarding efficiency and adaptation with the organizational culture.	Gamification improves the training and development process for educators/employees.	Gamification helps in retaining high potential employees/educators.	As an HR professional, I've encountered challenges when implementing gamification in your educational institutions.	I clearly address concerns about fairness and competition when using gamification.	Gamification will become a standard practice in HRM in the future in the education sector.
N	Valid	151	150	151	151	151	151	151
	Missing	0	1	0	0	0	0	0
Mean		1.56	1.75	1.81	1.82	1.94	1.81	1.90
Median		2.00	2.00	2.00	2.00	2.00	2.00	2.00
Mode		1	2	2	2	2	2	2
Std. Deviation		.585	.604	.690	.644	.714	.677	.710
Variance		.342	.365	.476	.414	.510	.459	.503
Range		2	3	3	3	4	3	4
Percentiles	25	1.00	1.00	1.00	1.00	2.00	1.00	1.00
	50	2.00	2.00	2.00	2.00	2.00	2.00	2.00
	75	2.00	2.00	2.00	2.00	2.00	2.00	2.00

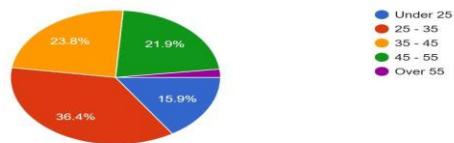
Statistics

		Your educational institution struggles with retaining high potential educators/employees.	There are incentives in place to retain skilled educators/employees in the education sector.	The current education reforms in Egypt are effective.	There is an adequate training for educators on inclusive education practices.	Educators' evaluation systems help improve teaching quality.
N	Valid	151	151	151	151	151
	Missing	0	0	0	0	0
Mean		2.92	3.13	3.13	3.19	3.02
Median		3.00	3.00	3.00	3.00	3.00
Mode		3	3	3	3	3
Std. Deviation		1.074	.874	.877	.803	.955
Variance		1.154	.764	.769	.645	.913
Range		4	4	4	4	4
Percentiles	25	2.00	3.00	3.00	3.00	3.00
	50	3.00	3.00	3.00	3.00	3.00
	75	4.00	4.00	4.00	4.00	4.00

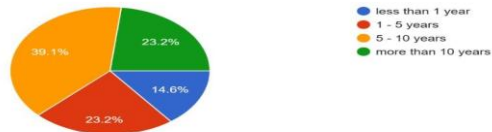
Statistics

		Gamification techniques such as virtual scenarios, points system and game-like assessment help in the recruitment process.	Points and rewards systems are effective in motivating new employees to engage with onboarding activities.	Gamification techniques such as leaderboards, budgets and quizzes in training and development process increase positive reinforcement and employees' motivation.	In performance appraisal process, Levels is considered to be the optimum gamification technique to provide employees with feedback.	Game-like assessment foster healthy competition and employees' retention.
N	Valid	151	151	151	151	151
	Missing	0	0	0	0	0
Mean		1.84	1.85	1.76	1.72	1.75
Median		2.00	2.00	2.00	2.00	2.00
Mode		2	2	2	2	2
Std. Deviation		.543	.719	.670	.626	.529
Variance		.295	.517	.449	.392	.280
Range		3	4	3	3	2
Percentiles	25	2.00	1.00	1.00	1.00	1.00
	50	2.00	2.00	2.00	2.00	2.00
	75	2.00	2.00	2.00	2.00	2.00

Age
151 responses



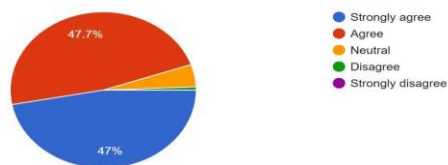
Tenure
151 responses



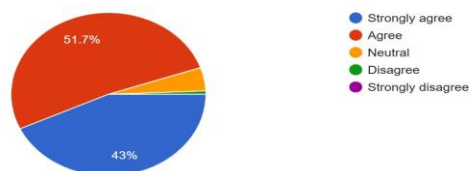
Gamification has positively impacted the work environment.
151 responses



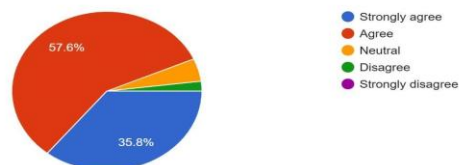
Gamification affects the sense of purpose and job satisfaction.
151 responses



Gamification has influenced team dynamics, motivation and collaboration in your workplace.
151 responses



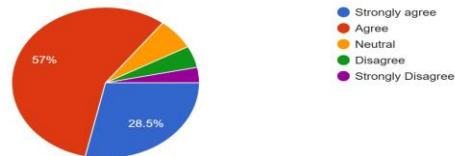
Gamification is designed to align with the main objectives of the educational institution you work in.
151 responses



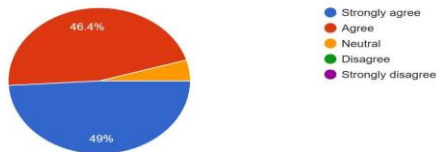
I would recommend other educational institutions to implement gamification to improve employees'/ educators' engagement and productivity.
151 responses



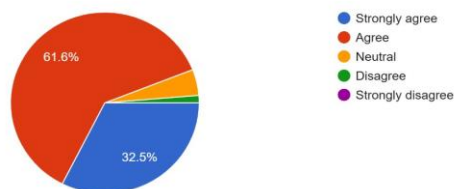
I have experienced negative consequences of gamification in your workplace, such as unhealthy competition, stress or favoritism.
151 responses



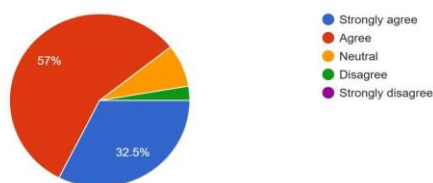
Gamification is effective in attracting and selection of potential candidates.
151 responses



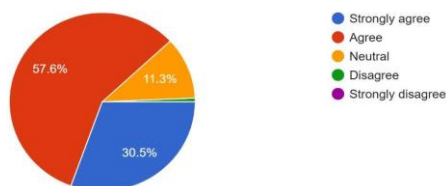
Gamification has significantly increased the onboarding efficiency and adaptation with the organizational culture.
151 responses



Gamification improves the training and development process for educators/employees.
151 responses

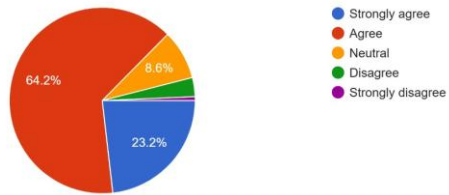


Gamification helps in retaining high potential employees/educators.
151 responses



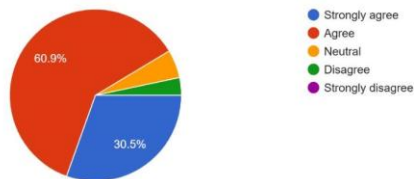
As an HR professional, I've encountered challenges when implementing gamification in your educational institutions.

151 responses



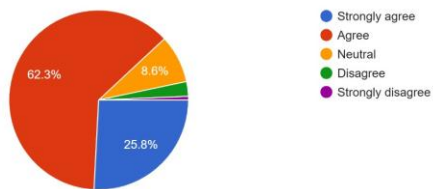
I clearly address concerns about fairness and competition when using gamification.

151 responses



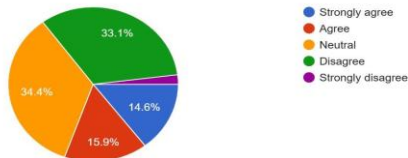
Gamification will become a standard practice in HRM in the future in the education sector.

151 responses



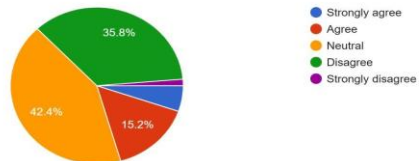
Your educational institution struggles with retaining high potential educators/employees.

151 responses



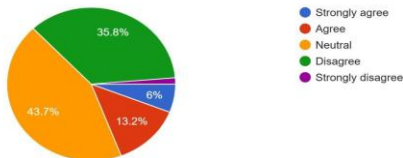
There are incentives in place to retain skilled educators/ employees in the education sector.

151 responses

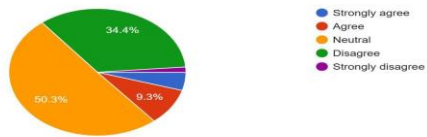


The current education reforms in Egypt are effective.

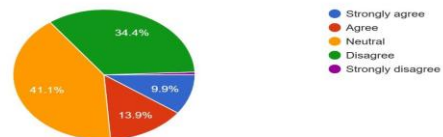
151 responses



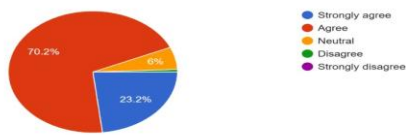
There is an adequate training for educators on inclusive education practices.
151 responses



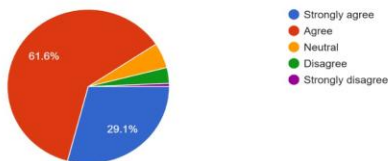
Educators' evaluation systems help improve teaching quality.
151 responses



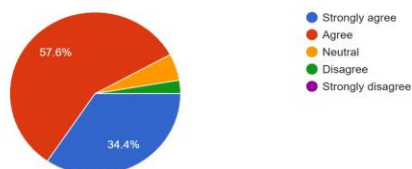
Gamification techniques such as virtual scenarios, points system and game-like assessment help in the recruitment process.
151 responses



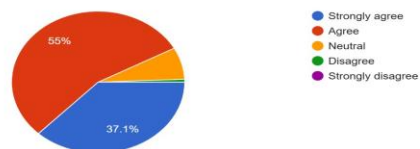
Points and rewards systems are effective in motivating new employees to engage with onboarding activities.
151 responses



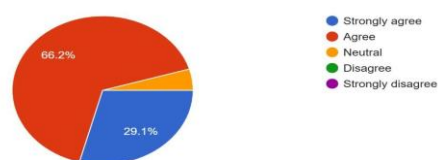
Gamification techniques such as leaderboards, budgets and quizzes in training and development process increase positive reinforcement and employees' motivation.
151 responses



In performance appraisal process, Levels is considered to be the optimum gamification technique to provide employees with feedback.
151 responses



Game-like assessment foster healthy competition and employees' retention.
151 responses



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