



The Relationship between Gamification and Employee Engagement

A Literature Review

Author: B.H.C. Nendels

SNR: 2059267

Supervisor: M.L. Steinkampf

Second Assessor: M. Verhagen

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School of Social and Behavioural Sciences, Tilburg University

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Abstract

This systematic literature review examines the relationship between gamification and employee engagement within organizational contexts. As traditional methods such as financial incentives and performance-based rewards increasingly fall short in fostering sustained engagement, gamification has emerged as an innovative strategy to enhance workplace motivation. The primary aim of this study is to investigate how gamification elements, such as points, badges, leaderboards, and challenges, influence employee engagement, and under what conditions these elements are most effective. Based on a systematic search of the WorldCat and Web of Science databases, ten empirical studies were selected and analysed. The findings indicate that gamification can positively relate to the physical, emotional, and cognitive dimensions of employee engagement, particularly when game elements align with employees' basic psychological needs for autonomy, competence, and relatedness, as articulated in Self-Determination Theory. However, the effectiveness of gamification strongly depends on factors such as voluntary participation, alignment with job tasks, and contextual adaptation. Poorly designed or mandatory gamification systems may instead induce stress and disengagement. This study provides practical recommendations for organizations to implement gamification in a thoughtful and sustainable manner and contributes theoretically by offering a more nuanced understanding of the mechanisms through which gamification influences employee engagement.

Keywords: Gamification, employee engagement, self-determination theory, work motivation

The Relationship between Gamification and Employee Engagement

Employee engagement plays a vital role in organizational success, influencing productivity, job satisfaction, and employee retention (Jaupi & Llaci, 2015; Saks, 2006). Organizations that foster engagement benefit from motivated employees who contribute to innovation and overall performance (Schaufeli et al., 2002; Saks, 2006). However, fostering sustained engagement remains a challenge in today's rapidly evolving work environment, characterized by digital transformation and shifting employee expectations (Miri & Macke, 2022). Traditional engagement methods, such as financial incentives and performance-based recognition, often fail to deliver long-term engagement (Saks, 2017). Consequently, organizations are increasingly turning to gamification as a strategy to enhance employee engagement (Mekler et al., 2017; Manske, 2024). Given its growing adoption, it is essential to examine its effectiveness in fostering employee engagement.

Gamification, defined as "*the use of game design elements in non-game contexts*" (Deterding et al., 2011), incorporates elements such as points, leaderboards, challenges, and rewards into workplace activities to enhance motivation and participation (Morschheuser et al., 2016). In the workplace, gamification has been implemented in areas such as training, performance management, and professional development (Hamari et al., 2014). Research suggests that gamification can improve task performance, knowledge retention, and workplace satisfaction (Sailer et al., 2017). Additionally, gamification has been identified as a key driver for fostering engagement in dynamic work environments (Patrici et al., 2022). Unlike traditional engagement techniques, gamification makes tasks more interactive and rewarding, encouraging greater participation and a stronger sense of achievement (Seaborn & Fels, 2015).

Employee engagement, on the other hand, refers to "*the psychological state in which*

employees are fully absorbed in their work, characterized by vigor, dedication, and absorption” (Schaufeli et al., 2002). Employee engagement is a multidimensional construct that reflects the level of enthusiasm and commitment employees bring to their work (Kahn, 1990). Studies consistently show that engaged employees are more committed to their work, demonstrate higher levels of productivity, and contribute positively to organizational success (Saks, 2006; Bakker et al., 2008). Additionally, engaged employees tend to go beyond their formal job responsibilities, displaying higher levels of discretionary effort and organizational citizenship behaviour (Rich et al., 2010). Furthermore, studies indicate that engaged employees experience higher levels of psychological well-being, which in turn enhances their motivation and work performance (Bakker, 2011). Factors that enhance employee engagement include job resources such as autonomy, social support, and opportunities for professional growth (Xanthopoulou et al., 2009). Moreover, employees who perceive their work as meaningful and receive constructive feedback are more likely to engage fully in their tasks (Bakker, 2011). Understanding the ways in which gamification influences engagement is crucial for organizations seeking to optimize its implementation.

Research suggests that gamification can positively impact employee engagement by fostering participation, encouraging goal setting, and strengthening workplace interactions (Seaborn & Fels, 2015). Gamification enhances employee engagement by offering structured feedback and personalized goal-setting mechanisms, which help employees track their progress and improve performance (Sailer et al., 2017). Furthermore, studies indicate that gamification increases involvement, enhances performance, and promotes collaboration, which are key components of employee engagement (Hamari et al., 2014; Sailer et al., 2017). Features like leaderboards and challenges create healthy competition and drive goal achievement, while rewards such as badges and points provide recognition, which are essential factors in fostering a deeper connection to one's work and increasing overall

employee engagement (Saks, 2006; Hamari et al., 2014; Sailer et al., 2017). Moreover, research shows that gamification influences employee engagement through both extrinsic and intrinsic rewards (Seaborn & Fels, 2015; Ryan & Deci, 2017). Extrinsic rewards, such as digital badges and leaderboards, create an immediate sense of achievement, but may not sustain engagement in the long term (Hamari et al., 2014). Intrinsic motivation, on the other hand, is driven by personal interest and internal satisfaction, leading to more meaningful engagement (Sailer et al., 2017). Research suggests that the most effective gamification strategies combine extrinsic rewards with mechanisms that enhance intrinsic motivation, ensuring long-term engagement and performance improvements (Patricio et al., 2022).

The Self-Determination Theory (SDT) provides a theoretical foundation for understanding the mechanisms through which gamification relates to employee engagement. SDT posits that individuals are intrinsically motivated when their three psychological needs, namely autonomy, competence and relatedness, are satisfied (Deci & Ryan, 2000). Gamification aligns with these principles by offering structured yet flexible work experiences that cater to intrinsic motivation (Deci et al., 2017). Gamification allows employees to make choices about how they engage with tasks, increasing their sense of control and self-direction, giving them a sense of autonomy (Rigby & Ryan, 2011). Through progressive challenges, real-time feedback, and achievement recognition, gamification enhances employees' feelings of mastery and effectiveness, fostering competence (Mekler et al., 2017). Social elements, such as peer recognition and shared achievements, foster interpersonal connections, strengthening workplace relationships leading to relatedness satisfaction (Kou et al., 2017). By satisfying employees' needs for autonomy, competence, and relatedness, well-designed gamification strategies can drive sustained motivation and workplace satisfaction (Hamari et al., 2014).

Recent research has delved deeper into how specific gamification mechanics interact

with the three basic psychological needs, as stated by SDT, to maximize engagement. Studies have found that integrating voluntary participation and personalized challenges within gamification frameworks can significantly enhance employee autonomy and reduce disengagement risks (Seaborn & Fels, 2015; Hamari et al., 2014). Similarly, incorporating goal-setting mechanics aligned with individual skill levels ensures that employees experience a continuous sense of competence, thereby reinforcing their intrinsic motivation (Deci et al., 2017). Furthermore, workplace gamification that incorporates narrative-driven mechanics, such as role-playing scenarios and immersive storytelling, has been found to enhance intrinsic motivation by fostering emotional investment in work tasks (Bunchball, 2016; Morschheuser et al., 2018). These elements make the work experience more meaningful, strengthening relatedness by creating a sense of shared purpose and identity among employees (Sailer & Homner, 2020). Additionally, gamification is increasingly recognized as a tool for enhancing employee engagement through professional development and continuous learning, which contributes to long-term organizational success (Kapp, 2012). However, successful implementation requires a balanced approach that aligns with SDT by integrating both extrinsic and intrinsic motivators while addressing potential ethical concerns such as reward dependency and fairness in competition (Sailer et al., 2017).

Despite its potential benefits, gamification presents several challenges and ethical concerns. The effectiveness of gamification is context-dependent, as excessive focus on extrinsic rewards can undermine intrinsic motivation and lead to burnout, particularly in environments where innovation and creativity are critical (Koivisto & Hamari, 2014; Ryan & Deci, 2017). While some sectors report short-term gains from gamified interventions, others experience reduced long-term engagement due to a misalignment between rewards and internal motivational drivers (Seaborn & Fels, 2015). Additionally, poorly designed gamification systems may cause stress and reduce long-term engagement if employees do not

perceive the activities as meaningful (Seaborn & Fels, 2015; Mekler et al., 2017). Research suggests that gamification should be carefully tailored to different employee demographics and work environments to prevent unintended negative effects, such as burnout or competition-induced stress (Deterding et al., 2011). Furthermore, excessive use of performance-tracking elements may raise privacy concerns and reduce employees' sense of autonomy (Wolff & Niessen, 2023).

Concluding, despite the growing interest in using gamification to boost employee engagement, there is still limited understanding of its overall effect across different work environments. Gamification has been studied in various contexts, such as education, healthcare, and technology, but the findings are often inconsistent (Hamari et al., 2014). Some studies suggest that gamification can enhance motivation and engagement by incorporating elements like points, badges, and leaderboards (Seaborn & Fels, 2015), while others point out potential drawbacks, such as the overuse of extrinsic rewards, which may not lead to long-term engagement (Ryan & Deci, 2017). Additionally, much of the research focuses on isolated outcomes like task performance or motivation, without fully addressing how these outcomes contribute to sustained employee engagement in the workplace (Mekler et al., 2017). The lack of consensus on the effectiveness of different gamification strategies and their alignment with employees' intrinsic motivations and employee engagement presents a clear gap in the literature. Given this, a literature review is needed to clarify how gamification impacts employee engagement across various industries and organizational contexts, and to identify which gamification elements are most effective for fostering employee engagement.

This literature review therefore examines the role of gamification in enhancing employee engagement, focusing on how game elements such as points, badges, leaderboards, and challenges can influence motivation and involvement in the workplace. The primary goal of this study is to provide a clear understanding of how gamification can foster a deeper

connection to work, leading to increased employee engagement. By synthesizing existing research, the review will identify the specific gamification features that contribute most effectively to employee engagement and explore the conditions under which gamification can be most beneficial. Additionally, the study aims to address gaps in the literature, such as the need for further research on the effects of gamification across different industries and organizational contexts. Ultimately, this review will provide organizations with evidence-based recommendations for integrating gamification strategies into the workplace to enhance employee engagement. By bridging the gap between theory and practice, this research aims to guide future studies and inform organizations on best practices for implementing gamification as a sustainable engagement tool. To conclude, the following research question will be answered in this literature review:

“What is known in the scientific literature about the relationship between gamification and employee engagement?”

Methods

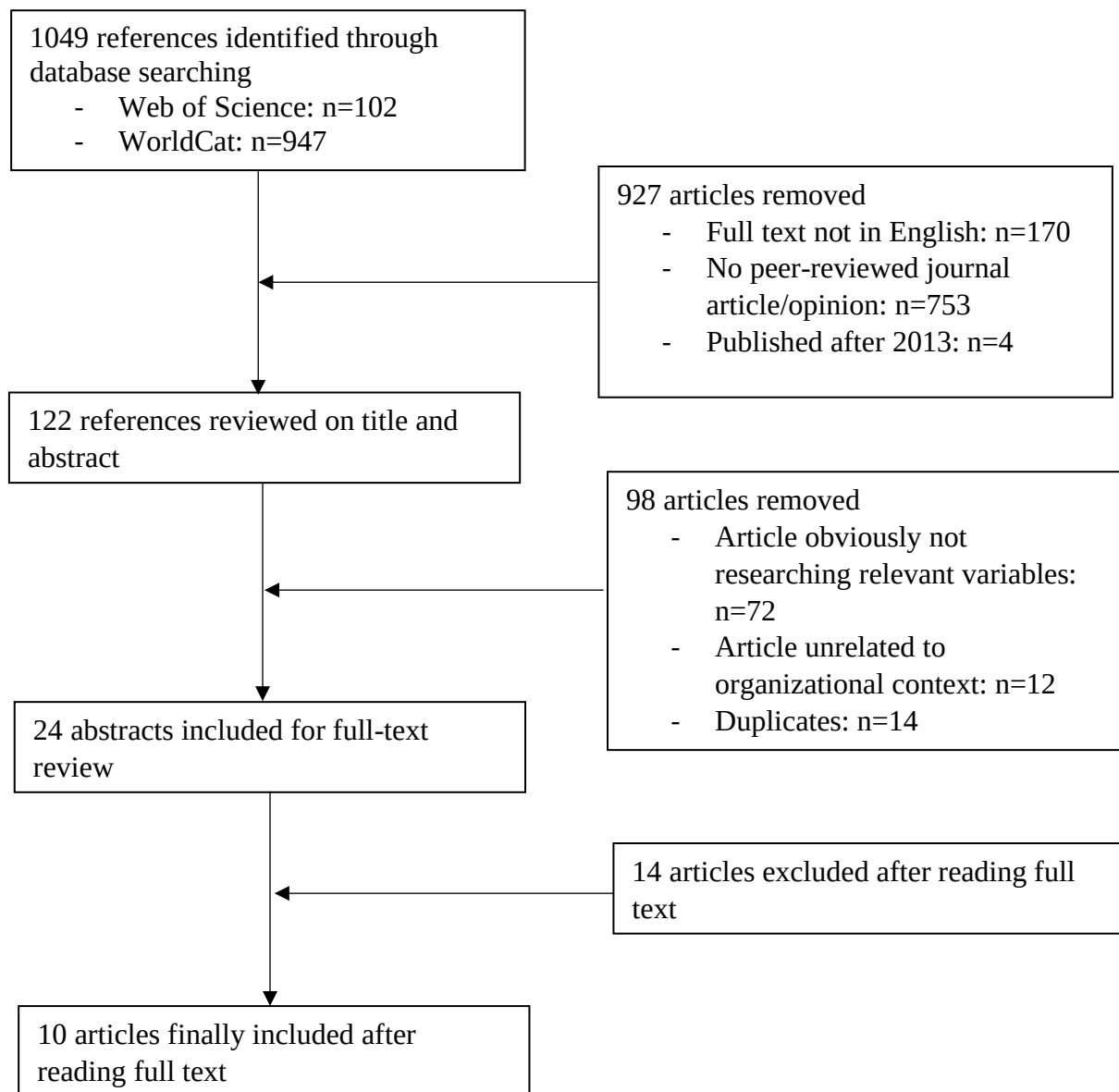
To answer the research question, a systematic literature review was conducted. This research method was selected for this study because it allows for a thorough and objective synthesis of existing research on the topic (Tricco, et al., 2011). Rather than generating new knowledge, this approach focuses on collecting and analysing existing studies to provide a clear overview of the available literature (Aromataris & Pearson, 2014). The databases used for this study were WorldCat and Web of Science. To gather relevant literature, one specific combination of keywords was selected and combined. The combination used included ‘employee engagement’ AND ‘gamification’. ‘Employee engagement’ was used as the dependent variable, while ‘gamification’ serves as the independent variable.

After searching these databases with the selected keywords, 1049 documents were

initially retrieved. A set of criteria was applied to filter the results. First, only peer-reviewed studies were considered to ensure reliability, leading to the exclusion of 753 articles. Next, articles had to be written in English, which resulted in the removal of 170 more studies. Following this, articles had to be written after 2013, leading to the exclusion of 4 more articles. This decision was made to ensure that the review reflects the most recent theoretical and practical developments in the field. Research published prior to 2013 may not encompass the latest advancements, thereby limiting the relevance of the findings (Tricco et al., 2011). This process left 122 articles for further review. The next step was screening the titles and abstracts to determine their relevance. Studies that did not align with the research focus were excluded (n=72). Additionally, the study needed to be conducted within an organizational setting, which led to the removal of 12 more papers. If studies delved deeper into ‘work engagement’ or ‘job engagement’ and the article deemed relevant, it was included for further analysis. To ensure the robustness of the literature review, duplicate entries were manually identified and removed (n=14). By manually checking the studies, it's ensured that no duplicates were included, which helped identify any inconsistencies in the metadata and prevented bias in the review results (Moher et al., 2009). After filtering out the duplicates, a full-text review was conducted on the 24 remaining articles. In some cases, articles that initially appeared relevant based on their abstract turned out to be less useful upon full reading and were therefore excluded. After careful evaluation, 10 studies were deemed highly relevant and were included in the final review. These articles are summarized in Table 3 (Appendix 1). The selection process is illustrated in Figure 1, which provides a clear overview of how the final set of articles was chosen.

Figure 1

Scheme Search and Selection Results



In this literature review, a clear and systematic approach will be used to extract, analyse, and synthesize information from the selected studies. First, each study will be read carefully to record key details such as the research questions, theoretical background, study design, sample characteristics, and main findings. A data extraction table will be used to ensure that this information is captured consistently and accurately. Next, the review will summarize and compare the main points from each study. This process will help identify

common themes, note any differences between studies, and highlight gaps in the current literature. The synthesis of these findings will then form the basis for drawing conclusions from the evidence. Specifically, the results section will address four objectives: identifying common themes, exploring contextual differences, evaluating how the findings align with SDT, and highlighting inconsistencies in the research. This transparent and methodical approach ensures that the inferences and conclusions drawn from the literature are clearly linked to the evidence provided by the studies (Aromataris & Pearson, 2014; Moher et al., 2009).

Results

This section presents the main findings from the ten studies included in the review. It begins with an overview of how the key concepts are defined across the literature. Following this, the underlying mechanisms through which gamification is believed to relate to employee engagement are examined, with particular attention to psychological theory and contextual factors. Lastly, the section summarizes the most important empirical findings, highlighting both consistent trends and notable differences across the studies.

Definitions

In the literature reviewed, and as shown in Table 1, gamification is generally understood as the use of game elements, such as points, badges, levels, or leaderboards, in contexts that are not inherently game-related (Mohanty & Christopher, 2025; Silic et al., 2020). While definitions vary slightly between studies, there is a clear shared understanding: gamification involves incorporating design principles and mechanics commonly found in games into the workplace to increase employee motivation and participation (Hammedi et al., 2021; Wibisono et al., 2023). Some authors emphasize its application in achieving organizational goals, while others frame it more broadly as creating “gameful” experiences (Benitez et al., 2022; Hammedi et al., 2021; Passalacqua et al., 2020; Ribeiro e Silva &

Carneiro Pinto, 2025). Despite these subtle differences, the core idea is consistent, namely that gamification aims to drive engagement by offering structured, rewarding, and interactive experiences that mirror the motivational dynamics of games (Miri & Macke, 2021; Pura, 2022).

Employee engagement, on the other hand, is typically defined as a psychological state in which employees feel energetic, committed, and fully absorbed in their work (Schaufeli et al., 2002; Ribeiro e Silva & Carneiro Pinto, 2025). Although employee engagement is commonly defined as a state of vigor, dedication, and absorption (Schaufeli et al., 2002; Ribeiro e Silva & Carneiro Pinto, 2025), this review encountered a recurring distinction in the literature that was not initially part of the conceptual framework, as shown in Table 1. Several studies describe engagement as comprising physical, emotional, and cognitive or behavioural components (Benitez et al., 2022; Passalacqua et al., 2020; Silic et al., 2020). Physical engagement involves the exertion of energy in work tasks, emotional engagement reflects affective involvement, and cognitive engagement refers to focused attention and mental presence (Benitez et al., 2022; Passalacqua et al., 2020; Silic et al., 2020). Recognizing these dimensions allows for a more nuanced understanding of how gamification may influence different aspects of engagement. While not all authors provide formal definitions, the concept is consistently treated as a multidimensional construct that reflects the depth of an employee's involvement in their work. Engagement, in this context, is not merely about compliance or job satisfaction, it refers to a state of active investment and meaningful connection.

Mechanisms underlying the relationship based on SDT

The reviewed studies suggest that gamification relates to employee engagement through several reinforcing mechanisms, many of which align with the principles of SDT. SDT proposes that people are most motivated when their basic psychological needs for

autonomy, competence, and relatedness are met (Deci & Ryan, 2000; Silic et al., 2020; Miri & Macke, 2021).

Firstly, many gamified systems provide clear goals and feedback loops, which help employees track their progress and achievements. This supports a sense of competence, an essential driver of motivation and engagement (Passalacque et al., 2020; Mohanty & Christopher, 2025). Passalacqua et al. (2020) found that instant feedback through gamified dashboards significantly improved users' perception of their own skill development. Similarly, Mohanty & Christopher (2025) showed that digital badges and ranking systems increased self-efficacy and stimulated continuous effort. Ribeiro e Silva and Carneiro Pinto (2025) further confirmed that regular performance feedback enhanced perceived competence, especially in learning-oriented environments. However, some studies note that when challenge levels are poorly matched to employees' skill levels, this may be associated with lower perceptions of competence and reduced engagement indicators (Hammedi et al., 2021; Miri & Macke, 2021; Ribeiro e Silva & Carneiro Pinto, 2025).

Secondly, gamification may strengthen autonomy, particularly when it allows employees to voluntarily opt in or to personalize their goals and challenges (Silic et al., 2020; Wibisono et al., 2023). Silic et al. (2020) and Wibisono et al. (2023) found that gamified environments which support self-direction and allow employees to choose their own challenges lead to significantly higher engagement and increased affective commitment compared to more rigid systems. However, this benefit is highly dependent on how the system is implemented. Multiple studies found that when participation is forced or overly regulated, gamification can feel controlling rather than empowering, leading to stress, disengagement, or even resistance (Hammedi et al., 2021; Ribeiro e Silva & Carneiro Pinto, 2025; Miri & Macke, 2025).

Thirdly, social dynamics are often embedded in gamified systems, particularly

through team-based challenges or public recognition (Pura, 2022; Ribeiro e Silva & Carneiro Pinto, 2025). Pura (2022) demonstrated that collaborative tasks in gamified platforms enhanced social belonging and fostered emotional engagement, especially in remote work settings. Furthermore, game elements such as shared goals, team-based challenges, and peer recognition appear to foster connection and relatedness among remote workers (Pura, 2022; Wibisono et al., 2023). Similarly, Ribeiro e Silva and Carneiro Pinto (2025) found that public recognition through leaderboards strengthened team identification and normative engagement. These elements enhance a sense of belonging and interpersonal connection, and thus relatedness, which is especially valuable in hybrid or remote work environments (Pura, 2022). When employees feel part of a shared experience, their engagement is likely to deepen (Wibisono et al., 2023).

In short, gamification can enhance engagement when it is thoughtfully designed and carefully aligned with the core psychological needs outlined in SDT (Silic et al., 2020; Wibisono et al., 2023). But when misaligned or poorly executed, it may lead to stress, disengagement, and ultimately undermine its intended effect (Miri & Macke, 2021; Hammedi et al., 2021).

Table 1

Summary of Recorded Definitions and Influences of Gamification on Employee Engagement

Author	Definition gamification	Definition employee engagement	Outcome
Benitez, Ruiz & Popovic, 2022	“Applying game design elements and principles from the gaming domain in a business situation to motivate organizational members and support the intended organizational goals”	“A positive, fulfilling, work-state of mind experienced by employees when they become physically involved in completing a task (physical engagement), emotionally connected to the job and other members (emotional engagement), and psychologically present when performing the job (cognitive/psychological engagement)”	HR gamification initiatives have a positive relationship with employee engagement.
Hammedi, Leclercq, Poncin & Alkire, 2021	“A process of enhancing a service with affordances for gameful experience to	“Employees’ investment in their work tasks, employees and coworkers”	Gamification can enhance job engagement by making work more enjoyable and improving interactions between employees. However, studies show that its effectiveness depends on how it's implemented. When gamification is imposed

	support users’ overall value creation”		rather than voluntary, it can feel controlling, leading to stress, lower job satisfaction, and decreased engagement over time. Employees’ willingness to participate and the quality of their relationships with coworkers play a key role.
Miri & Macke, 2021	“Applying game design principles in business-related contexts”	No clear definition given	Gamification boosts engagement when well-designed and aligned with work processes. Many tools fail due to poor rewards, lack of feedback, or weak alignment with employee needs. The Bravi Quiz app succeeded due to its design and immersion. Key factors for success include meaningful scoring, feedback, and rewards. Gamification must integrate with work tasks, prioritize cooperation over competition, and involve managers and developers. Poor implementation can lead to frustration and disengagement.
Mohanty & Christopher, 2025	“The utilisation of game thinking and mechanics in contexts that are not inherently game-related”	“The allocation of employees’ time and exertion towards their work responsibilities with the aim of achieving organisational goals.”	Gamification training boosts employee performance by enhancing engagement through social and emotional involvement. It improves task participation and team cohesion, with social engagement acting as a key mediator. While initially showing minimal impact on performance, further analysis confirmed gamification's positive effect. Case studies, like Ford, highlight its success in increasing engagement. For effectiveness, gamification must align with job-related content and involve employees actively.
Passalacqua, Léger, Nacke, Fredette, Labonté-	“The use of video game elements in a non-gaming context”	“No clear definition of employee engagement, however, engagement is recognised as a multifaceted concept consisting	Gamification boosts both emotional and cognitive engagement, with participants showing higher emotional responses and greater cognitive engagement in gamified conditions (SSG and AG) compared to non-gamified (NG). It also improved performance times but not error rates. Self-set goals enhanced intrinsic

Lemoyne, Lin, Caprioli & Sénécal, 2020		of cognitive, emotional and behavioural components.”	motivation, suggesting gamification increases employee engagement and performance, especially in performance-based settings. For effective implementation, focus on long-term effects, consider employee preferences, balance autonomy with external pressure, and monitor well-being to avoid burnout.
Pura, 2022	“The use of game elements (or motivational affordances which include points, leaderboards, badges, etc.) in non-game contexts”	“The ability of employees to be in their ‘full self’ while working”	Gamification boosts employee engagement by focusing on collaboration and social interaction, especially in remote work settings. It enhances motivation when implemented with team-based achievements rather than individual ones. However, challenges include the need for proper leadership implementation, as not all employees respond well to gamification, especially if it emphasizes competition over collaboration. Miscommunication in remote work can also hinder gamification's effectiveness, requiring careful planning to align with team needs and communication styles.
Ribeiro e Silva & Carneiro Pinto, 2025	“The use of game like elements in non-game contexts”	“Vigor, dedication and absorption”	Positive outcomes of gamification include enhanced job engagement (vigour, dedication). However, challenges exist. A semi-mandatory app use, lack of interest in gamification activities, and a focus on extrinsic rewards can reduce engagement. Additionally, the need for autonomy and relatedness did not predict app usage, possibly due to mandatory participation and insufficiently challenging tasks. Demographic factors, such as gender preferences for gamified elements, also play a role in engagement levels.

			For effective implementation, companies must consider user perceptions, ensure voluntary participation, and align gamification with employees' needs and daily tasks. Regular feedback and adaptability are crucial for sustaining long-term engagement.
Robson, Plangger, Kietzmann, McCarthy & Pitt, 2016	"The application of game-design principles in order to change behaviors in non-game situations"	"Harnessing employees to their jobs through their involvement, satisfaction, and enthusiasm for work"	Gamification boosts employee engagement by aligning game mechanics with players' motivations. Key factors include understanding player types, choosing the right mechanics, and ensuring timely rewards. It's essential to evolve the experience with new challenges and monitor for fair play. Clear metrics are needed to track success and adjust the strategy. When done right, gamification can enhance engagement, but it requires careful design and ongoing adaptation to remain effective.
Silic, Marzi, Caputo & Bal, 2020	"The application of game design elements in the workplace environment"	"Harnessing their full selves in active, complete work role performances by driving personal energy into physical, cognitive and emotional labors"	According to the study, gamification elements such as enjoyment, recognition, and reciprocal benefits are particularly effective in boosting employee engagement and job satisfaction. Enjoyment and recognition, in particular, have a strong positive impact over time. Feedback mechanisms, such as receiving "likes" or badges, also play a crucial role in fostering a sense of value and motivation among employees. However, it's important to consider that the effectiveness of these elements can vary based on factors like age and culture. For example, younger employees may adapt more quickly to gamified systems, while older employees might view them as a distraction. Additionally, different organizational contexts and employee personalities could influence the success of

			gamification elements, with some employees preferring private recognition over public rewards.
Wibisono, Setiawan, Aprianda & Cendana, 2023	“The use of game design elements in non-gaming contexts”	“A personal investment in job tasks”	Gamification can significantly boost employee engagement by fostering enjoyment, motivation, and basic need satisfaction. Key elements of gamification, such as competition and achievement visibility, have shown positive effects on employee engagement. However, the effectiveness of specific gamification features can vary. The study highlights that “competing with others” has a higher impact on engagement than other gamification features. Additionally, basic need satisfaction, like the ability to express ideas and relate to others, plays a critical role in enhancing enjoyment and motivation in gamified systems. When employees’ psychological needs are met, they feel more engaged and connected with the company. For effective gamification, companies must ensure a balance between competition, achievement, and social connection, considering individual preferences and generational differences, as millennials and Gen-X showed some differences in their responses. The data also suggest that gamification’s positive effects are partly mediated by basic need satisfaction, emphasizing the importance of a well-designed, needs-focused gamification strategy.

Across the ten empirical studies included in this review, gamification generally demonstrated positive effects on various facets of employee engagement when game elements were thoughtfully integrated into work processes. However, these benefits depended on factors such as voluntary participation, alignment with job tasks, and implementation. In addition to the thematic analysis presented below, Table 3 offers a concise overview of the key characteristics and outcomes of the ten reviewed studies. Table 1 complements this, helping to interpret the findings more precisely. What follows is a detailed description of overlapping findings.

How Gamification Enhances Employee Engagement

First off, multiple studies report engagement gains when gamification is embedded in routine activities. Benitez et al. (2022) surveyed ten IT and business executives and found that mobile HR-gamification, using points, badges, competition, and levels, led to marked improvements in physical, emotional, and cognitive engagement. Similarly, Mohanty and Christopher (2025) administered a questionnaire to 300 employees after a gamified training program featuring points, badges, leaderboards, and real-time feedback. Participants showed significant increases in vigor and dedication, alongside measurable task performance gains. Passalacqua et al. (2020) conducted a controlled experiment in a logistics firm and observed that both self-set and assigned goal gamification conditions outperformed non-gamified controls on emotional engagement (facial coding) and cognitive engagement (reaction-time tasks), with performance times improving by 12 percent. Silic et al. (2020) found that recognition-based elements, such as digital badges and public praise, significantly enhanced job satisfaction and long-term engagement. Enjoyment and mutual gains were identified as key drivers, especially when feedback mechanisms provided a sense of personal value (Silic et al., 2020). Furthermore, emotional engagement is frequently enhanced by team-based challenges and peer recognition (Passalacqua et al., 2020; Silic et al., 2020). In remote or

hybrid workplaces, these features help maintain connection and motivation (Pura, 2022; Wibisono et al., 2023). For example, Pura (2022) found that badges and leaderboards increased collaborative engagement among teleworkers. Similarly, Wibisono et al. (2023) showed that social gamification features fostered a sense of relatedness and helped counteract isolation. In addition, Robson et al. (2016) emphasized that gamification is most effective when game mechanics are aligned with employee motivations. Their case studies demonstrated that tailoring gamified systems to different player types, such as achievement-oriented, competitive, or socially driven individuals, enhanced employee engagement. Successful implementations featured timely rewards, evolving challenges, and clear rules to ensure fairness (Robson et al., 2016). These elements increased employees' sense of satisfaction and enthusiasm, reinforcing their connection to work tasks (Robson et al., 2016).

To better capture the range of effects observed across studies, the results were further categorized according to three dimensions of engagement, each of which appears to be influenced by specific game elements: physical, emotional, and cognitive. This classification emerged during the literature analysis as a recurring distinction in how engagement was conceptualized and measured. Table 2 summarizes the core gamification features associated with each engagement dimension, along with the specific outcomes reported in the reviewed studies. For instance, features such as points, badges, and performance feedback primarily supported physical engagement through increased energy, participation, and task execution. Social and recognition-based elements were consistently associated with emotional engagement, including job satisfaction and relatedness. Cognitive engagement, on the other hand, was most often enhanced by goal-setting, feedback loops, and personalized challenges that stimulated focus and task absorption. This adds conceptual clarity to the field and offers practical guidance for more targeted gamification design.

Table 2

Gamification Features and Their Reported Impact on Physical, Emotional and Cognitive Dimensions of Employee Engagement

Engagement Dimension	Gamification Features	Observed Effects	Key Sources
Physical	Points, badges, levels, real-time feedback	Increased task effort, active participation, improved performance metrics	Benitez et al., 2022; Mohanty & Christopher, 2022; Miri & Macke, 2021; Ribeiro e Silva & Carneiro Pinto, 2025
Emotional	Peer recognition, badges, team challenges, social goals, public praise	Enhanced affective commitment, relatedness, job satisfaction, reduced isolation	Silic et al., 2020; Pura, 2022; Wibison et al., 2023; Ribeiro e Silva & Carneiro Pinto, 2025
Cognitive	Goal-setting, progress feedback, challenge difficulty	Improved mental focus, task absorption, reaction time, improved problem-solving	Passalacqua et al., 2020; Robson et al., 2016; Miri & Macke, 2021; Benitez et al., 2022

Risks of Poor Implementation

Although gamification has the potential to enhance engagement, several studies warn that poor implementation can have the opposite effect. Multiple studies show that systems that enforce participation, rely heavily on competition, or offer unclear feedback often lead to frustration, reduced trust, and disengagement (Miri & Macke, 2021; Hammedi et al., 2021; Silic et al., 2020; Ribeiro e Silva & Carneiro Pinto, 2025). Public leaderboards, in particular,

can demotivate lower-performing employees, especially when participation is not voluntary or when performance metrics feel uncontrollable (Wibisono et al., 2023).

Another key issue concerns the lack of alignment between game elements and actual job tasks. When gamified features feel disconnected from employees' daily work, they may be seen as superficial or distracting rather than motivating (Miri & Macke, 2021; Mohanty & Christopher, 2025). Studies suggest that engagement is stronger when gamification directly supports task execution or skill development (Passalacqua et al., 2020; Silic et al., 2020). Systems that do not add value to the job may undermine perceived usefulness and intrinsic motivation.

Sectoral & Contextual Variations

Additionally, several studies highlight that the effectiveness of gamification varies considerably across sectors and organizational contexts. In task-driven environments, such as logistics or training, gamification tends to yield particularly strong engagement outcomes when aligned with practical, job-relevant activities. For example, Mohanty and Christopher (2025) found that gamified training programs enhanced vigor and dedication when game mechanics reinforced learning objectives. Similarly, Passalacqua et al. (2020) reported that time-based and goal-oriented gamified tasks in a logistics setting led to measurable improvements in both cognitive and emotional engagement.

In contrast, in service-driven or collaborative sectors, the success of gamification appears to rely more heavily on social design features. Studies by Pura (2022) and Hammedi et al. (2021) emphasized that gamification promoting peer interaction, collective goals, and shared recognition was more effective in hybrid or digitally mediated work settings, where interpersonal connection is less spontaneous. In these contexts, social elements, such as team leaderboards, mutual feedback, and social badges, proved more relevant than individual competition or point accumulation. These social elements even helped make up for the lack of

face-to-face contact, which can otherwise reduce engagement (Pura, 2022; Wibisono et al., 2023).

These findings align with Robson et al. (2016), who stressed the importance of context-aware design. They found that the success or failure of gamification initiatives often hinges on matching mechanics to the organizational culture and to employees' intrinsic motivations. A "one-size-fits-all" approach is less effective than adaptive systems that consider varying user profiles and workplace dynamics (Robson et al., 2016).

Furthermore, several studies also noted that demographic factors can influence the impact of gamification. For example, Silic et al. (2020) noted that younger employees and those from digitally literate cultures responded more positively to gamified elements, while older workers were more likely to perceive them as distracting, highlighting the need for demographic tailoring. Furthermore, Wibisono et al. (2023) also found that younger employees were often more receptive to digital game elements than older colleagues. Gender differences in game preferences were also reported to relate to engagement levels in some contexts. According to Ribeiro e Silva and Carneiro Pinto (2025), men tended to prefer competitive and achievement-based features, such as leaderboards, whereas women were more engaged by collaborative and narrative-driven elements.

Discussion

This literature review set out to explore whether gamification can be used as a tool to improve employee engagement, and under what conditions it is most likely to be effective. Specifically, the research question guiding this review was: "*What is known in the scientific literature about the effect of gamification on employee engagement?*". This literature review addressed the research gap outlined in the introduction, which was focussed on the limited understanding of how contextual factors and psychological needs impact the relationship between gamification and employee engagement. This was done by systematically reviewing

empirical research from the past decade. Across the literature, it becomes clear that gamification is not inherently motivating or demotivating. It is a tool, and its outcomes depend largely on how it is used and experienced.

Psychological Mechanisms behind Gamification

One key insight emerging from this review is that gamification on itself does not guarantee engagement. Its effectiveness depends largely on the psychological mechanisms it triggers. Drawing on SDT, several studies indicate that gamification only supports engagement when it satisfies core psychological needs, particularly autonomy, competence, and relatedness (Silic et al., 2020; Hammedi et al., 2021; Ribeiro e Silva & Carneiro Pinto, 2025). Competence is supported when game elements such as feedback, goals, and challenge levels align with employees' skills. Studies show that such features can foster mastery and task engagement (Passalacqua et al., 2020; Mohanty & Christopher, 2025). However, when challenges are misaligned (too easy or too difficult), they may reduce perceived competence and demotivate rather than empower, leading to frustration or withdrawal (Hammedi et al., 2021; Miri & Macke, 2021; Ribeiro e Silva & Carneiro Pinto, 2025). Relatedness is fulfilled through social elements like team challenges, peer recognition, and shared achievements, especially in hybrid or remote settings (Pura, 2022; Ribeiro e Silva & Carneiro Pinto, 2025). Yet overly competitive systems can harm relatedness by isolating low performers or emphasizing rivalry over collaboration (Wibisono et al., 2023). These findings imply that the same gamification element can lead to either engagement or disengagement, depending on how it is implemented and perceived. This highlights that success depends not just on design, but on how gamification is framed, experienced, and aligned with employees' psychological needs.

Drawing further on this, the review reveals that gamification is most effective when

participation is voluntary. Autonomy appears to play a crucial role in this process: when individuals perceive gamified systems as self-directed rather than imposed, they are more likely to experience intrinsic motivation and sustained engagement (Silic et al., 2020; Wibisono et al., 2023; Hammedi et al., 2021). These findings are reinforced by SDT, which highlights the importance of perceived autonomy: if participation is voluntary and meaningful, gamification can foster a sense of self-direction. Conversely, if participation is mandatory or gamified systems are perceived as extrinsic control tools, intrinsic motivation and engagement may be undermined. (Deci & Ryan, 2000). This is supported in this literature review by multiple studies (Miri & Macke, 2021; Ribeiro e Silva & Carneiro Pinto, 2025; Passalacqua et al., 2020). These findings highlight that the motivational benefits of gamification are dependent on the degree to which users experience autonomy in their application.

Task relevance and Contextual Fit

Another critical theme concerns the alignment between game mechanics and job tasks. Engagement is consistently stronger when gamified elements are meaningfully embedded in employees' daily work, as opposed to functioning as external add-ons (Mohanty & Christopher, 2025; Passalacqua et al., 2020; Robson et al., 2016). Mohanty and Christopher (2025) and Passalacqua et al. (2020) found that systems closely linked to task performance, learning, or output yielded more positive cognitive and emotional responses than systems perceived as artificial or disconnected. However, when gamification was poorly aligned with job content or added extra tasks, it was often seen as distracting or meaningless (Miri & Macke, 2021; Robson et al., 2016). These findings suggest that task relevance is a core condition for meaningful gamification.

Another important insight is that the effectiveness of gamification is strongly

influenced by how well it aligns with the broader organizational context. Rather than acting as a standalone solution, gamified systems need to complement existing work structures, cultural values, and task dynamics (Robson et al., 2016; Silic et al., 2020). When there is a strong fit between game design and organizational context, gamification can reinforce learning, motivation, collaboration, and ultimately engagement. However, a poor fit, such as introducing competitive elements in environments that prioritize cooperation, can undermine these benefits and even increase stress or resistance (Hammedi et al., 2021; Miri & Macke, 2021).

These insights underline the need for a differentiated approach, in which gamification strategies are tailored to the characteristics of specific sectors, team structures, and job demands. A one-size-fits-all model is unlikely to be effective across diverse work environments. Instead, successful implementation requires careful consideration of how game elements interact with organizational norms, work structures, task complexity, and employee expectations (Passalacqua et al., 2020; Pura, 2022; Ribeiro e Silva & Carneiro Pinto, 2025).

Gamification also seems to play a specific role in remote or hybrid work settings. Social features such as team leaderboards, collaborative goals, or public recognition mechanisms were found to mitigate the lack of face-to-face contact, which can otherwise lower engagement (Pura, 2022; Wibisono et al., 2023). In this sense, gamification does not only enhance intrinsic motivation but also helps maintain team dynamics and social cohesion in digital environments. These findings align with broader organizational psychology literature emphasizing the importance of belonging and social cohesion in virtual teams (Allen et al., 2015).

Individual Differences and User-Centered Design

The review also reveals that the success of gamification depends not only on

contextual fit but also on how it is perceived by different individuals. Personal factors such as age, gender, motivational orientation, and digital literacy significantly shape employee responses to game elements (Silic et al., 2020; Wibisono et al., 2023; Ribeiro e Silva & Carneiro Pinto, 2025; Robson et al., 2016; Pura, 2022). For instance, younger employees are generally more receptive to digital environments and tend to respond more positively to features like instant feedback, competition, and visibility of achievement (Silic et al., 2020; Wibisono et al., 2023). In contrast, older employees may find such elements distracting or less meaningful, preferring collaborative or narrative-driven formats (Silic et al., 2020). Gender preferences also play a role: competitive elements such as leaderboards were found to be more appealing to male participants, while women were more engaged by cooperative or story-based gamified activities (Ribeiro e Silva & Carneiro Pinto, 2025). Additionally, motivational differences, such as whether individuals are driven by achievement, social connection, or exploration, relates to how gamification is experienced and valued (Robson et al., 2016).

These findings suggest that demographic factors and personal preferences may act as important moderators of gamification outcomes. Furthermore, these findings reinforce that gamification should not be designed as a “one-size-fits-all” solution. Instead, user-centered design is essential. Systems that allow for personalization, such as adjustable goals, flexible challenge formats, and various types of recognition, are more likely to meet individual psychological needs and preferences (Wibisono et al., 2023; Passalacqua et al., 2020; Robson et al., 2016). Further on, these findings taken together also suggest that the design and expected outcomes of gamification should be adapted to employee demographics to ensure long-term effectiveness. This supports the idea that understanding employee profiles and adapting gamified experiences to different “player types” enhances engagement outcomes. When gamification is perceived as personally relevant, fair, and supportive rather than

controlling, it can foster deeper and more lasting engagement (Silic et al., 2020; Ribeiro e Silva & Carneiro Pinto, 2025). In contrast, rigid or generic systems risk disengagement, frustration, or resistance. A flexible and inclusive design approach, responsive to diverse user profiles and evolving needs, is therefore critical for sustainable implementation.

Distinct Dimensions of Engagement

Another key insight of this literature review is that engagement is not one single state, but consists of different components, namely physical, emotional, and cognitive. Different game elements seem to influence these dimensions in distinct ways. Table 2 provides a clear overview of how different design elements target different aspects of employee engagement, offering valuable insights for both theory and practice. The results showed that physical engagement was often linked to features like real-time feedback and task-based rewards, which increased effort and participation (Benitez et al., 2022; Mohanty & Christopher, 2025). Emotional engagement was supported by social interaction, recognition, and a sense of belonging (Silic et al., 2020; Wibisono et al., 2023). Meanwhile, cognitive engagement was enhanced by features that encouraged focus, such as goal setting and progress tracking (Passalacqua et al., 2020). Recognizing this distinction can help organizations design gamification more strategically, targeting the type of engagement they want to improve. Therefore, Table 2 offers researchers and practitioners a practical tool for aligning gamification strategies with the dominant engagement dimension and psychological needs present in a given context.

Risk and Design Pitfalls of Gamification

Finally, the review highlights several limitations and design-related risks that echo concerns raised in earlier literature. While gamification is often praised for its motivational potential, it can also undermine engagement if poorly implemented. Systems with misaligned incentives, excessive reliance on extrinsic rewards, or insufficient feedback may not only fail

to motivate employees, but may actively reduce engagement, induce stress, or lead to resistance (Miri & Macke, 2021; Silic et al., 2020). These findings reaffirm earlier critiques found in foundational work, which argue that gamification is not inherently motivating and may become manipulative or ineffective when users do not experience intrinsic value (Seaborn & Fels, 2015; Ryan & Deci, 2017).

Taken together, the literature offers a more nuanced view of gamification than is often assumed in popular discourse. The effectiveness of gamification is not a matter of adding points or badges, but of aligning motivational structures with the work context and employee needs. Gamification works best when it is voluntary, task-relevant, emotionally resonant, socially embedded, and adapted to its specific context and users. This reinforces the broader insight that engagement is not something that can be engineered through design alone. If participation lacks genuine meaning or if the focus is too heavily placed on competition, gamification can backfire, intensifying feelings of isolation or exclusion instead of fostering engagement.

Limitations and Future Research Directions

This review contributes to the academic and practical understanding of gamification by synthesizing diverse empirical findings through a structured theoretical lens. One of its key strengths lies in the integration of SDT as a guiding framework, which allowed for a more nuanced interpretation of how gamification can support or undermine engagement through the satisfaction of psychological needs such as autonomy and competence (Deci & Ryan, 2000). In addition, the inclusion of studies from varied work contexts provides a broader basis for evaluating gamification's relevance across different organizational settings. By considering both the potential benefits and the contextual risks, the review offers a balanced and critically reflective contribution.

Nonetheless, several limitations of this literature review should be acknowledged.

One of the most critical is the lack of long-term studies. Most of the included research focuses on short-term outcomes, such as engagement during a training program or in the first few weeks of implementation, rather than examining whether these effects are sustained over time. As a result, it remains unclear whether gamification merely provides a temporary boost in engagement or leads to lasting changes in behaviour and work attitudes. Longitudinal studies, particularly those that track motivational and attitudinal shifts over time, are needed to establish whether gamification can contribute to enduring organizational outcomes (Koivisto & Hamari, 2014).

Second, while the SDT framework was central to most interpretations, some studies lacked a clear theoretical foundation or failed to explain how gamification led to engagement improvements. This limits the interpretability and generalizability of findings. In line with what Gonzalez-González and Navarro-Adelantado (2021) argue, the field still lacks critical reflection on the boundary conditions of gamification and its possible unintended effects, such as manipulation, over-competitiveness, or disengagement once rewards are removed. Future research should engage with questions such as: Under what conditions do game elements support intrinsic motivation? How do individual differences or organizational culture shape these dynamics? And how might gamification unintentionally foster control, competition, or disengagement?

A further challenge relates to the inconsistency in how engagement was conceptualized and measured. Across the reviewed studies, operational definitions varied widely ranging from self-reported motivation scores to behavioural performance metrics or biometric indicators (Benítez et al., 2022; Passalacqua et al., 2020). This heterogeneity complicates cross-study comparison and limits the potential for conceptual synthesis. Moving forward, the field would benefit from more standardized engagement constructs, possibly

grounded in validated models such as those proposed by Saks (2006) or Schaufeli et al. (2002), which distinguish between cognitive, emotional, and psychical dimensions.

Finally, relatively little attention was paid to individual differences. Most studies reported average effects without examining how factors such as age, gender, digital literacy, personality traits, or role visibility might moderate the impact of gamification. Yet several included studies (e.g., Silic et al., 2020; Wibisono et al., 2023; Ribeiro e Silva & Carneiro Pinto, 2025) suggest that these characteristics can significantly influence how gamification is perceived. Future research should adopt a more person-centered approach, for instance by segmenting users based on motivational profiles or prior experience with digital systems, to better understand for whom gamification works best and why.

Practical and Theoretical Implications

This review highlights several important practical and theoretical implications for the implementation of gamification as a strategy to enhance employee engagement.

First, it is essential to tailor the design of gamified systems to the context and needs of the workforce. In environments where performance is quantifiable and routine (e.g., logistics), visual feedback and time-based rewards can work well. In creative or emotional labor settings, game elements should focus more on recognition, meaningful progress, and employee-driven goals. Based on the interviews that have been conducted (see Appendix 2), managerial experience suggests that while competitive elements like quizzes or rankings may energize some employees, others may experience these features as stressful or discouraging when the focus shifts toward evaluation rather than engagement (see Appendix 2). This highlights the importance of perceived relevance and psychological safety: gamification is only effective when employees feel that the game elements support, rather than threaten, their sense of purpose and well-being.

Second, participation must be voluntary and flexible. Employees should not feel

forced to take part or monitored by game elements. When gamification is perceived as controlling rather than supportive, it undermines the very motivation it seeks to foster (Hammedi et al., 2021; Ribeiro e Silva & Carneiro Pinto, 2025). Practical insight indicated that employees quickly lose interest if the purpose of gamification is solely to increase output (see Appendix 2). Playful elements should contribute to motivation and joy during the workday (see Appendix 2). Providing autonomy in how and when to participate is therefore essential. From a theoretical perspective, this reinforces a key tenet of SDT: when participation lacks autonomy, gamification can lead to amotivation or even psychological reactance. Particularly when employees are pressured into engaging with gamified systems, these systems may be experienced as external control mechanisms rather than motivational tools, leading to reduced intrinsic motivation, disengagement, or stress (Deci & Ryan, 2000; Gonzalez-Gonzalez & Navarro-Adelantado, 2021).

Third, gamification should include social and collaborative elements, especially in hybrid or remote teams. Features that foster peer interaction, team goals, and shared progress can help strengthen the relational side of engagement (Pura, 2022). However, competition should be used carefully, as not all employees are motivated by rankings or points, and for some, it can even be demoralizing (Ribeiro e Silva & Carneiro Pinto, 2025; Wibisono et al., 2023). Theoretically, this underscores the importance of relatedness as outlined in SDT. Competitive environments that diminish social connectedness can hinder rather than help motivation and engagement.

Additionally, evaluation should be ongoing. Organizations must continuously gather feedback and monitor how gamification may affect different groups over time. What works for one person or team may not work for another, and systems should be flexible enough to adapt. Both respondents emphasized that clear goals and alignment with workplace culture are necessary for gamification to have a positive effect. Otherwise, game elements risk being

perceived as irrelevant or burdensome (see Appendix 2). A flexible approach that adapts to ongoing feedback is therefore advised.

Furthermore, this review found that gamification relates to different dimensions of engagement, namely physical, emotional, and cognitive, through distinct mechanisms and features. Although this distinction was not the starting point of the review, it emerged repeatedly across the studies and proved to be a helpful way to understand how gamification works in practice. Table 2 provides a structured overview of which gamification elements align with each engagement dimension, summarizing observed effects from multiple empirical sources. This categorization offers practical value for organizations by helping them select gamification features based on the type of engagement they wish to foster. From a theoretical perspective, it contributes to the growing understanding of engagement as a multidimensional construct, suggesting that future research on gamification should move beyond general engagement measures and instead consider how different mechanics target distinct psychological and behavioural responses.

Theoretically, this review reaffirms the central role of SDT in understanding the psychological dynamics of gamified work environments. The success of gamification appears to depend less on the presence of game mechanics per se, and more on their ability to satisfy basic psychological needs: autonomy, competence, and relatedness. This extends previous literature by showing that gamification does not just boost engagement through surface-level stimulation, but can meaningfully influence the deeper motivational processes that sustain long-term engagement, especially when game elements are designed to reinforce a sense of autonomy, competence and relatedness at work.

Moreover, the findings invite reflection on the boundary conditions of SDT in gamified contexts. In particular, the reviewed studies show that not all employees interpret the same game mechanics in the same way. What supports autonomy for one employee may feel

controlling to another, depending on factors such as task type, team culture, or prior experience with digital systems (Gonzalez-González & Navarro-Adelantado, 2021). This underscores the importance of incorporating individual differences and organizational culture into future theoretical models of gamified motivation. Future theoretical work should more explicitly address how gamification may trigger demotivation or psychological reactance in certain contexts or user profiles.

Finally, this review calls for greater theoretical integration in the field of gamification research. While SDT provides a strong foundation, future work may benefit from complementing it with perspectives from goal-setting theory, social comparison theory, or affective engagement frameworks to capture the full range of responses to gamification, both positive and adverse. A more pluralistic theoretical approach could enhance explanatory power and contribute to the design of more inclusive and effective gamification strategies.

Conclusion

In conclusion, gamification can indeed support employee engagement, but only when implemented with care, clarity, and an understanding of human motivation. Its success depends not just on which game elements are used, but on how they are experienced by employees in different roles and work contexts. The best outcomes are seen when gamified systems are voluntary, personalized, and socially meaningful, especially when they are aligned with the psychological needs of autonomy, competence, and relatedness. However, the long-term effectiveness of gamification remains under-researched. Future studies should go beyond short-term metrics and explore how engagement develops over time, and how gamified interventions can remain relevant in dynamic and diverse workplaces.

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Appendices

Appendix 1

Table 3

Summary of Articles Examining the Relationship between Employee Engagement and Gamification

Author(s) and publication year	Key items	Sample characteristics	Main findings	Type of gamification used
Benitez, Ruiz & Popovic, 2022	Mobile technology, human resource gamification, employee engagement, job satisfaction, job performance, the business value of IT	Questionnaire: N=10 IT and business executives in Spain	Mobile technology-enabled HR gamification initiatives improve employee engagement.	Points, badges, competition, levels, or challenges
Hammedi, Leclercq, Poncin & Alkire, 2021	Gamification, job engagement, frontline employees', well- being, willingness to participate	Interviews: N=21, questionnaire: N=200, in telemarketing and retailing sectors	Using gamification in a work context might backfire because when employees take part, they are less satisfied and engaged. This negative impact decreases when employees reveal their willingness to participate, suggesting the need to consider consent to participate in gamified experiences. Management should seek explicit consent, otherwise, FLEs risk perceiving gamification challenges as	Points, competition, and challenges

			external regulations of their performance, which may lead to stress and disengagement.	
Miri & Macke, 2021	Gamification, serious games, game, engagement at work, motivation at work	Exploratory study of multiple cases: N=4 all located in the south of Brazil	The case study's main contribution was the understanding that the correct planning and application of gamification with the elements of scoring, feedback and adequate rewards are necessary to promote engagement at work.	Medals, levels, challenges, points, ranking, feedback, rewards
Mohanty & Christopher, 2025	Gamification training, employee engagement, ISA employee engagement scale, employee task performance	Questionnaire: N=300 in an Indian company	The results suggest that gamification has a beneficial influence on employee engagement. The effective incorporation of gamification in the professional setting necessitates active employee involvement and pertinent content associated with their job effectiveness.	The used gamification system incorporates elements such as points, badges, leaderboards, and challenges with real-time feedback to make training more interactive and engaging.
Passalacqua, Léger, Nacke, Fredette, Labonté-Lemoyne, Lin, Caprioli & Sénécal, 2020	Gamification, controlled experiment, warehouse management system (WMS), employee engagement, NeuroIS	Experimental study: N=21, in a logistical company in Canada	Results show that gamification with either type of goal-setting (self-set or assigned) increases implicit and explicit emotional engagement, implicit and explicit cognitive engagement, as well as performance (time), when compared to no gamification. Gamification can	Gamification in competition form using time with self-set goals or assigned goals

			increase levels of engagement and motivation of employees in remote work if it is collaborative.	
Pura, 2022	Remote working, gamification, employee engagement, motivation	Interviews: N=10, work-from-home Philippians in different sectors	The study's findings indicate that incorporating gamification into remote work environments can significantly enhance employee engagement and motivation. Emphasizing collaborative game elements in the design of gamified systems is essential. Additionally, gamification can help address communication challenges that arise in remote work settings. Therefore, organizations seeking to motivate and engage their remote workforce might consider gamification as a viable solution	Gamification in general
Ribeiro e Silva & Carneiro Pinto, 2025	Gamification, technology acceptance model, job engagement, self-determination theory, work commitment	Questionnaire: N = 120, retrieved from an insurance company in Portugal	The actual use of a gamification app in a professional context is a predictor for vigour and dedication from the job engagement theory, confirming it's related to employee engagement. Engaging employees in the development process and providing gamified systems that are user-friendly and clearly deliver benefits lead to higher rates of adoption.	Leaderboards and competition in teams

Robson, Plangger, Kietzmann, McCarthy & Pitt, 2016	Gamification, employee engagement, customer engagement, mechanics, dynamics, emotions, behavior change	Case studies	Gamification in this context can lead to improved employee engagement. Success in gamification was driven by appropriate alignment of gamification mechanics, dynamics, and emotions to specific player types; in contrast, gamification failures were linked to poor alignment between these gamification principles and players involved in the gamified experience.	Competition, rewards, leaderboards, points and badges
Silic, Marzi, Caputo & Bal, 2020	Flow, gamification, gamified, HRM, HRM system, job engagement, job satisfaction, longitudinal study, workplace gamification	Questionnaire: N=128	They found that reciprocal benefits, usefulness of gaming, motivation for gaming, recognition and enjoyment of gaming are important triggers that foster job engagement that can be better leveraged in the organizational HRM system by introducing gamification elements, which should lead to a more pleasant, interesting and enjoying workplace environment.	Challenges, leaderboards, recognition and rewards
Wibisono, Setiawan, Aprianda & Cendana, 2023	Work engagement, gamification, basic need satisfaction, enjoyment, millennials, state-owned enterprises, Indonesia	Questionnaire: N=133 for generation X and millennials in Indonesia	Firstly, affordances in gamification, such as rewards, self-expression, status, competition, and visibility of achievement, can be practical tools for enhancing work engagement. Secondly, the	Gamification in general

effect of gamification affordance on work engagement is likely to be mediated by the satisfaction of basic psychological needs, such as autonomy, competence, and relatedness; thus, incorporating elements that support these needs can help create a more enjoyable and engaging work environment. Thirdly, the multigroup analysis results from findings indicate no significant differences in the effects of gamification on work engagement between millennials and previous generations; thus, gamification affordance can be an effective tool for enhancing work engagement among workforces of different ages and generations.

Appendix 2

Summary interview management

The interviews were conducted using a questionnaire and involved two employees (N=2). A deliberate choice was made to select participants with different job roles but from the same organization. The anonymity of both participants is ensured.

Respondent 1

The respondent is a 60-year-old Chief Financial Officer who has been employed in the organization since June of last year, meaning she has been in her current position for nearly a year.

Are you familiar with gamification? If yes, how would you define it?

I've heard of it, but I wouldn't say I'm deeply familiar with the concept. My understanding is that it involves incorporating elements of play or gaming into environments that are not games by nature, such as the workplace. Things like small internal competitions come to mind. Essentially, it's about using playful strategies to motivate or engage people in a different way.

How would you define employee engagement?

For me, employee engagement is about the degree to which employees feel connected to and loyal to the organization. You notice it when people take an interest in the work they do, when they align themselves with the company's product or service, and when they truly feel like part of a bigger whole. Loyalty expresses itself in people going the extra mile, being available when needed, being flexible with schedules or shifts, and actively contributing ideas or solutions.

To what extent do you perceive a relationship between gamification and employee engagement within your organization? Do you think gamification can be a useful tool to enhance engagement, or do you see any downsides?

I believe that if you manage to add playful or stimulating elements to the workday, things that spark motivation or simply make the day a bit more interesting, it can contribute to a stronger sense of belonging. Internal competitions, for instance, can be effective, but they need a clear purpose. If gamification is used purely to boost output, people will catch on quickly and may become disengaged. It should enhance motivation and bring joy to the workplace, not become another form of pressure.

Which factors do you believe influence the relationship between gamification and engagement?

The underlying intention behind gamification is crucial. If it's too obvious that the only goal is to push for higher performance, people will notice and often resist. Take McDonald's as an example: when competition becomes too intense, it can create unrealistic benchmarks. The 'top performer' can raise the bar too high, leaving others behind and disengaged. It can foster a counterproductive atmosphere if only a select few consistently win. Then it stops being fun and loses its positive effect.

Respondent 2

The respondent is a 43-year-old General Director who has been with the organization since 2002.

Are you familiar with gamification? If yes, how would you define it?

Before this interview, I wasn't familiar with the term 'gamification'. It was something new to me, so it was helpful to have it explained. Now that I know what it means, namely adding game-like elements to work processes or activities, I can reflect on some experiences that fit the description, even though we may not have labelled them as such at the time.

How would you define employee engagement?

To me, employee engagement shows in the willingness of employees to go the extra mile when needed. It's also about being proactive, when someone sees that something could be done differently or improved and speaks up. That level of initiative and ownership is, in my view, a strong indicator of engagement.

To what extent do you perceive a relationship between gamification and employee engagement within your organization? Do you think gamification can be a useful tool to enhance engagement, or do you see any downsides?

We've experimented with gamified elements, though not always consciously as part of a strategy. For example, during our quarterly updates, we sometimes notice that using light competition or interactive elements can boost energy and engagement in the moment. A more explicit example is our 'Capilympics', a game-like event where employees answered questions about the company. That showed a clear split: the more engaged employees stayed after 17:00, joined in enthusiastically, and even helped clean up. Others, who seemed less engaged, left exactly at closing time and showed more resistance or disinterest.

There was also a noticeable barrier for some participants, especially when they didn't know the answers. That created discomfort and made the activity feel more like a test than a game for them. So yes, gamification can enhance engagement, but only if carefully tailored to the people and the context. You have to be very mindful of what fits each department, to avoid unintended negative reactions.

Which factors do you believe influence the relationship between gamification and engagement?

A big factor is whether people *want* to participate. If something is perceived as mandatory or feels too risky, like being put on the spot, it can backfire. Some people find it uncomfortable or even intimidating, especially when they're unsure of their own abilities. Engagement grows when people feel safe and genuinely interested, not when they feel

pressured. So, voluntary participation and matching the activity to the team's dynamics are key in making gamification effective.