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The Role of Learning Motivation in Gamification: Deriving Insights from the Model of Gamification Proposed by Landers

Opatha, H.H.D.P.J.^{1*}, Uresha, K.I.²

^{1,2}Department of Human Resource Management, Faculty of Management Studies and Commerce, University of Sri Jayewardenepura, Sri Lanka

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*Corresponding author: Opatha, H.H.D.P.J.

Department of Human Resource Management, Faculty of Management Studies and Commerce, University of Sri Jayewardenepura, Sri Lanka

Abstract

Gamification is recognized as an effective method for employee training, sustaining motivation and enhancing engagement throughout the learning process. While numerous studies have explored gamification's impact on student engagement, research focusing on its application in workplace settings remains limited. Building on Landers' 2015 model, this study investigates the interplay between gamified elements, instructional content, and learner motivation in influencing learning outcomes. A comprehensive literature review was conducted to explore the role of learner motivation in gamified learning environments. The snowball technique was employed to identify additional relevant literature from reference lists of selected articles. The foundational article for this conceptual paper is "Developing a Theory of Gamified Learning: Linking Serious Games and Gamification of Learning" by Richard N. Landers (2015). The literature review indicates that learner motivation is crucial for the effectiveness of gamified learning environments. The proposed conceptual model suggests that the relationships between game characteristics, instructional content, and learner behaviour/attitude are contingent on the learner's motivation level. Without sufficient motivation, even high-quality gamified elements and instructional content cannot achieve positive learning outcomes. Future empirical studies are essential to validate this model and deepen our understanding of how motivation influences learning outcomes in gamified settings. Ultimately, enhancing learner motivation should be a key focus for designing effective gamified training programs in the workplace.

Keywords: Gamification, Learning Motivation, Employees, Training

Introduction

It is widely accepted that when learners find joy in the learning process, they tend to feel content while also successfully achieving their educational goals. The evolving landscape of the business world, driven by ever-changing environmental challenges, necessitates a diverse skill set among its workforce. Presently, employees are not merely expected to perform routine tasks; they are encouraged to actively participate in problem-solving and, at best, to generate ideas through innovation and the exchange of information. This expectation is particularly pronounced in customer service organizations, where employees must go above and beyond to ensure customer satisfaction. Consequently, training and development programs play a pivotal role within the organisational context, preparing employees to meet these evolving demands.

In the realm of employee training and development, the motivation of employees to learn is of paramount importance. The degree to which employees fully absorb the learning outcomes is contingent upon their level of engagement and motivation to acquire knowledge (Eisele et al., 2013). Both engagement and inspiration are indispensable factors in fostering the creation of innovative ideas that can benefit the broader community.

In a professional setting, the application of gamification has the potential to foster higher levels of employee engagement, satisfaction, and retention, all while improving motivation (Miri & Macke, 2022). However, it's crucial to carefully strategize and execute gamification initiatives, incorporating appropriate scoring systems, feedback mechanisms, and rewards to effectively boost motivation and engagement within the workplace (Miri & Macke, 2022). Notably, a study revealed that when game elements were integrated into training programs, construction companies in Nigeria experienced significant improvements in employee engagement, productivity, and safety. These positive outcomes ultimately translated into better project results (Oke et al., 2023).

This paper aims to explore the significance of gamification in the context of learning and emphasizes the crucial role of employee or learner motivation throughout the gamification journey until the desired learning outcomes are achieved. Existing literature has highlighted that gamification has the potential to boost learner or employee motivation, leading to enhanced absorption of learning outcomes (Khodabandelou et al., 2023; Oke et al., 2023; Hammedi et al., 2017). In this paper, our objective is to highlight the learner or employee motivation as a fundamental precursor to the gamification process. By building upon Landers' (2015) gamification model, we have developed a conceptual model that extends the original framework. Our central argument revolves around the idea that the behaviour and attitude of learners or employees are positively influenced by the quality of gaming elements and instructional content incorporated into training programs, but this positive impact is contingent upon the presence of employee motivation.

The Realm of Gamification

Gamification is defined as the use of characteristics of video games in a non-gaming environment to improve user learning experience and motivation (Deterding et al., 2011). Research firm Gartner has predicted that over 70% of Fortune Global 2000 organizations would adopt gamification in alternative ways (Goasduff & Pettey, 2011). Gamification concepts and techniques are being used by organizations to make employees engage in training to make them

behave in the expected way (Perryer et al., 2016). Unlike serious games, gamification does not seek to influence learning directly. Instead, the objective of gamification is to alter a contextual learner's behaviour or attitude which intends to improve pre-existing instruction as a consequence of that behavioural or attitudinal change (Lander, 2015). According to the research designs that compare gamified versus non-gamified learning contexts suggest that any gamification of learning will not produce the desirable outcomes for learners unless the relevant games' elements are utilized. The effect of gamification depends upon the specific game elements used and the contexts in which they are used. DiTommoso's Gamification framework (2011) addresses seven areas of gamification to think about: understanding the business need to gamify, understanding your users, what are the goals and objectives?, identifying necessary skills and actions, identifying the game elements and what are the desired outcomes?

Hamari and Koivisto (2015) explain "*gamification as the use of technologies to simulate game characteristics with the potential to motivate 'players'*". Gamification involves the use of game elements to make teaching and learning fun (Torres-Toukoudidis et al., 2021). Besides the educational field, gamification is widely used in several sectors such as business and health and has recently attracted a lot of attention from both business and academics. In the present context, considering the reap benefits of using gamification, many firms are attempting to use gamification in various areas such as human resource management, marketing and sales etc. Gamification is utilized in these settings to train and develop employees through inspiration, improve consumer engagement with companies, and persuade individuals to change their behaviour (Wunderlich et al., 2020 as in Baah et al., 2016).

Serious Games Vs. Gamification: Insights from the Model of Landers (2015)

According to Landers (2015), there is a difference between serious game design and gamification though both approaches are leading towards increasing learning outcomes. The processes used by both approaches to gain the final outcome which is optimum learning outcomes are divergent from each other. Bedwell's taxonomy defines gamification in the notion of gamified learning as the use of game qualities outside the framework of game with the purpose of influencing learning-related behaviours or attitudes. These behaviours and attitudes are influenced by instructional design quality and/or game characteristics. The behaviours and attitudes of the learner thereby influence the learning outcomes. This is different to the serious games method, in which game attributes are often manipulated to affect learning without the use of a behavioural mediator/moderator.

In the investigation of serious games, games are typically thought to have a direct impact on learning (Figure 1). The input-process-output model is applied in the serious games approach. Thus, instructional content and game characteristics are the inputs to a recurring game cycle that will eventually create learning (Garris et al., 2002). A model like this indicates that the instructional content and game characteristics of serious games directly increase learning outcomes. Games take on the role of instructor in this paradigm by delivering knowledge directly to learners, and a debriefing process is employed to examine that content in terms of overarching instructional goals. Although games can influence learner motivation and engagement, it is not usually the goal of serious games to do so without providing the learner with instructional content.

As in the Figure 2, gamification practitioners, on the other hand, do not frequently look to have an immediate effect on learning. Instead, the goal of gamification is to alter a contextual learner's behaviour or attitude (e.g.; engagement, satisfaction etc.), with the intention of improving learning outcomes as a result of that behavioural or attitudinal change. Debriefing is not typically a part of gamification since learner comprehension is not necessary for gamification as long as the target attitude/behaviour is influenced. For example, in the gamified course which incorporates fantasy aspects is not to teach students about those fantasy components, but rather to boost learner engagement. The course's key teaching components are becoming more effective with higher involvement and ultimately produce positive learning outcomes.



Figure 1. Serious Game Model

Source: Landers (2015)

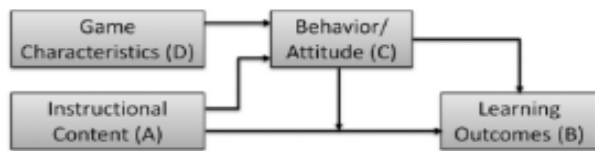


Figure 2. Gamification Model

Source: Landers (2015)

Learning Motivation

Motivation is defined as “the attribute that moves us to do or not to do something” (Broussard & Garrison, 2004, p. 106). Moreover, Brown (1987) has defined motivation as; ‘an inner drive, impulse, emotion or desire that moves one to a particular action’. Motivation is widely regarded as a crucial element within the realm of gamification. Comprehending and utilizing the unmatched motivational power that compels individuals to engage in extended gaming sessions could potentially provide a substantial enhancement to productivity (Perryer et al., 2016).

Existing literature provides two key types of motivation namely; intrinsic motivation and extrinsic motivation. As stated by Ryan and Deci (2000) intrinsic motivation arises when a task is inherently captivating or pleasurable, while extrinsic motivation arises when engaging in the task serves as a path to achieve a favorable result. Gamification involves both intrinsic and extrinsic motivation in which players can be awarded with a price or benefit that motivates them extrinsically while players can be motivated intrinsically by addressing their needs such as their desire to succeed through game elements in gamification (Perryer et al., 2016). It has been revealed that diverse motivational theories such as the Four-drives motivation theory, and self-determination theory connect with gamification elements (Perryer et al., 2016). Existing literature reveals that game elements such as scoreboards, and point systems tend to increase the intrinsic motivation of individuals. However, participants engaging with a gamified system as a single, standalone activity typically encounter minimal to no elevation in inherent motivation and only experience a slight

enhancement in their performance (Mekler et al., 2017). Further, it has been unveiled that a significant amount of research and practical application in gamification revolves around the utilization of points, badges, and leaderboards, which represent some of the most basic game components and primarily serve as external motivators (Armstrong & Landers, 2018). However, depending on the design it may address the intrinsic motivation of employees as well such as when gamification incorporates scoreboards to rank employees it is driven by intrinsic motivation through the self-regulation of individuals (Armstrong & Landers, 2018).

Utilizing gamification in providing team challenges in the workplace and may allow employees to learn new skills together. Players may receive badges for completing team tasks, and carrying on in this way may increase their motivation to learn, which is an inherently motivated action (Gaonkar et al., 2022). Moreover, it is disclosed that when intrinsic motivation and gamification strategies are used together, this additionally fosters involvement and engagement (Gaonkar et al., 2022). Accordingly, the study conducted by Armstrong and Landers (2018) asserts that gamified learning was generally more motivating and captivating when compared to other learning strategies.

Research Aim

In the literature, it is evident that many scholars were keen on finding how gamification can be used as a learning tool to enhance students' learning engagement and satisfaction (Smiderle, 2020; Floers et al., 2022; Abadi et al., 2022) while few have focused on gamification at workplace (Kien and Nguyen, 2021; Cardador et al., 2017). Further, Landers (2015) explored how learning outcomes are influenced by the behaviour/attitude of learners which is influenced by game characteristics and instructional content. The researchers of this paper argue that the relationship between game characteristics and a learner's behaviour/attitude, as well as the relationship between instructional content and a learner's behaviour/attitude, are both contingent on the learner's level of motivation because, even when a game incorporates numerous game characteristics and features high-quality instructional content, if the learner's motivation is low, the expected positive outcomes in terms of behaviour and attitude (such as engagement and satisfaction) will remain unrealized by the learner. Thus the main research aim of this paper is to identify the role of learner's motivation in gamification and expected to test this empirically in future research.

Role of Learner's Motivation in Gamification

In our perspective, we suggest that the connection between game characteristics and the learner's behaviour/attitude, as well as the connection between instructional content and the learner's behaviour/attitude, is influenced by the learner's level of motivation. The rationale behind this assertion is that, regardless of the abundance of game characteristics and the quality of instructional content within the utilized game, if the learner's motivation is low, the anticipated positive impact on behaviour/attitude (such as engagement and satisfaction) cannot be realized by the learner.

According to Leon Festinger's Cognitive Dissonance Theory introduced in 1962, it is asserted that learners need cognitive motivation for effective learning. This implies that learners should genuinely believe in and find value in the subject matter they are about to learn, leading to increased motivation. Thus, according to Festinger, learners must possess a cognitive commitment and motivation to acquire new knowledge.

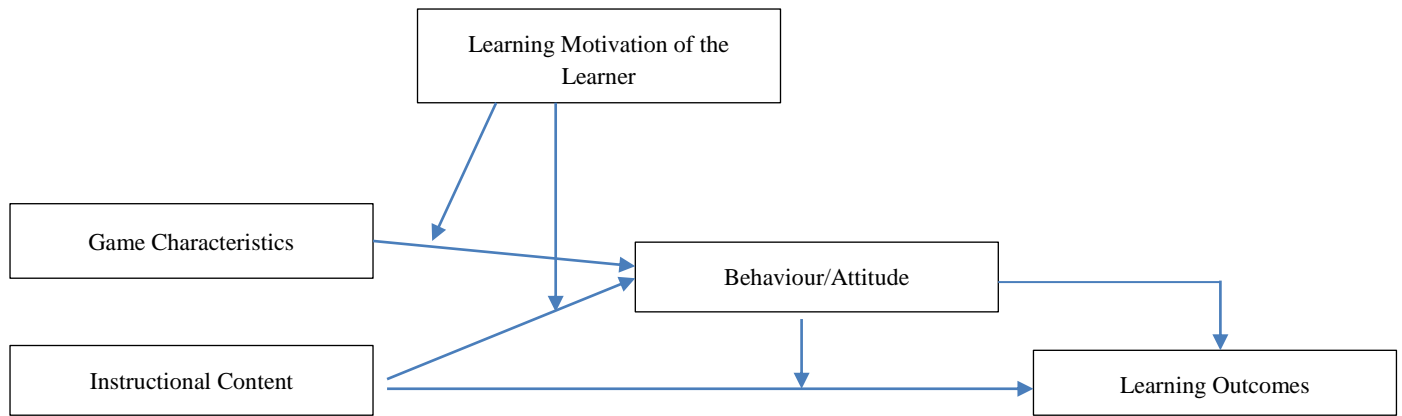


Figure 3. New Conceptual Model on Gamification

Methodology

We conducted a literature review to investigate the role of learner motivation in gamification. Our research began with a thorough exploration of relevant articles in online databases, with a specific focus on understanding how learners' motivation influences learning outcomes through their behaviours and attitudes in gamified environments. To identify pertinent literature on gamification, we employed keywords like "gamification," "motivation of employees in learning," "characteristics of games," and "educational content." Furthermore, we employed the snowball technique, which involves examining the reference lists of various articles, to uncover additional relevant literature. The foundational article for our conceptual paper is "Developing a Theory of Gamified Learning: Linking Serious Games and Gamification of Learning" authored by Richard N. Landers in 2015. We utilized our insights and drew from existing literature to elucidate the various aspects of gamification. In total, our literature review encompassed 38 references, including publications from esteemed sources including Emerald and Sage.

Propositions

Instructional content influences learning outcomes and behaviours

Literature reveals that the influence of instructional content on learning outcomes has been massively studied in the existing gamification literature (Landers, 2015). As stated by Campbell and Kuncel (2002) learning results such as; knowledge, skills, and beliefs as well as behaviours of learners can be altered with improved and better instructional content. People with diverse study habits and learner characteristics seemed to hold different views on instructional quality, experienced varying results, and showed fluctuations in learner engagement and motivation (Lim et al., 2006). Further, proper instructional content has been identified as a critical factor to ensure the success of gamification (Landers, 2015). Moreover, instructional content allows individuals to learn the gamification process, in which without instructional content gamification cannot cause learning of the individuals (Landers, 2015). Thereby, based on the above associations proposition 1 is advanced;

Proposition 1: Instructional content influences learning outcomes and behaviours.

Behaviours/attitudes influence learning

Primary education research in the existing literature reveals that the behaviours of individuals have a strong influence on the learning process of the individuals. As stated by Landers (2015), the

attitudes and behaviours of learners can cause noticeable differences in learning, as these attitudes and behaviours differ depending on the construct. The above fact has been emphasized by numerous scholars in their respective studies such as; it has been revealed that learners who put little effort may perform lower than the rest (Zhao & Kuh, 2004; Carini, Kuh, & Klein, 2006). Therefore, it is suggested that, for gamification to achieve success, the behaviour or attitude that gamification aims to influence must inherently impact the learning process (Landers, 2015). Proving this fact, Hattie, Biggs, & Purdie, (1996) assert that meta-cognitive techniques such as reviewing materials or note-taking have a direct influence on the learning process. Hence, gamification that enables the ability of learners to regulate the frequency of metacognitive reminders has the potential to enhance learning (Landers, 2015). Accordingly, the second proposition is advanced;

Proposition 2: Behaviors/attitudes influence learning.

Game characteristics influence changes in behaviour/attitudes

Within the context of gamification, the incorporation of a greater number of gaming elements, particularly those involving specific rules and goals, has the potential to heighten the desired behaviours and attitudes associated with learning. As per research done at Indiana University, the targeted attitude was student engagement, and possibly even a sense of enjoyment. By incorporating gaming elements, they could enhance the students' engagement and sense of enjoyment toward learning. The extent to which gamification efforts can successfully cultivate or enhance these behaviours and attitudes is a matter that remains to be empirically addressed (Landers, 2015). In the realm of gamification research, fundamental game elements commonly encompass points, badges, awards, missions, challenges, and competition. The utilization of these elements in the gamification process serves as a catalyst for employee engagement and fosters motivation among employees (Kien and Nguyen, 2021). Proposition 3 is formulated based on the aforementioned rationale.

Proposition 3: Game characteristics influence changes in behaviour/attitudes.

Game elements affect behaviours/attitudes that moderate instructional effectiveness

According to Landers (2015), higher-quality instructional content should result in higher learning results for students. However, for this relationship to happen, incorporating fantasy (a game characteristic) should increase students' behaviours and attitudes which will strengthen the relationship between instructional content and learning outcomes.

Furthermore, it's important to note that if the instructional design or content is subpar or doesn't meet established standards, the addition of gaming elements will not positively impact the learning outcomes. In cases where a course has been created without the use of effective pedagogical techniques, gamification will fail to produce any beneficial effects on learning. In essence, if an instructor employs poor instructional design, even if gaming elements are integrated into the learning process, the anticipated improvement in learning outcomes is unlikely to occur (Landers, 2015). In light of these considerations, the fourth proposition was formulated.

Proposition 4: Game elements affect behaviours/attitudes that moderate instructional effectiveness.

The relationship between game elements and learning outcomes is mediated by behaviours/attitudes

The use of gamified practice assessments has been shown to enhance learning. It's important to note that learning would not occur if learners did not engage with these practice tests, which incorporate elements of gamification. In this context, when the game elements such as assessments, challenges, human interaction, and established rules/goals are implemented with the intention of influencing behaviour, this interaction is referred to as mediation (Baron & Kenny, 1986). Gamification is designed to have an impact on certain outcomes (Hamari et al., 2014). Essentially, what this means is that the underlying concept of game characteristics seems to affect learning outcomes indirectly, as it directly influences the behaviours and attitudes of learners, which, in turn, affect the learning outcomes (Landers, 2015). In the theory of gamified learning, for learning outcomes to be improved through this mediating process, the game elements must first stimulate increased engagement and attitudes among learners, subsequently leading to enhanced learning. Building upon these considerations, the fifth proposition was formulated.

Proposition 5: The relationship between game elements and learning outcomes is mediated by behaviours/attitudes.

Learning motivation moderates the relationship between game characteristics and the behaviour/attitude of the learner.

Motivation is one of the greatest drivers of performance that results in great outcomes. Motivation can emerge intrinsically or extrinsically. In the gamification context, it is expected to test learners' intrinsic motivation towards learning. Gamification is the use of a game in the workplace to encourage and motivate desirable behaviours among employees and various studies in the literature clearly show that gamified systems have the potential to motivate employees and promote the optimization and effectiveness of their systems (Encarnaçao, 2021). Smiderle et al. (2020) found that gamified group participants significantly improved the quality of their submitted solutions, achieving more accuracy. This finding confirms the fact that the gamified system has the potential to influence student behaviour. Cardador et al. (2017) propose that work gamification enhances the motivation at workplace and subsequently performance. Basic game features in gamification research can include points, badges, awards, missions, challenges, and competition and applying these features in the gamification process makes employees engage and encourages employees (Kien and Nguyen, 2021). As in Kien and Nguyen (2021), all gamification elements chosen are divided into three main categories i.e., Mechanics (Points, Feedback, Leaderboard, Achievements, Goals), Dynamics (Rules, Rewards, Missions, Collaboration, Competition, Progression Flow), and Aesthetics

(Visual & Sound, Avatar, Narrative, User Experience and User Interface, Style and Themes, Easter eggs). Mechanics are the basic game characteristics that gamification should possess while dynamics are about how the gamification is supposed to be played. The users' emotions affected by the gamification tool are managed by the aesthetics. These gamified components may boost employee motivation by instilling a sense of self-determination, personal development, and competence (Kien and Nguyen, 2021). Gamification has the greatest influence on reward and recognition, procedural justice, feedback, distributive justice, perceived supervisor support, and career, knowledge, learning, and development prospects (Girdauskiene et al., 2022). Oxarart and Houghton (2021) have stipulated that important individual and organizational outcomes can be derived from the effective elements of gamification through self-leadership and self-concordance. Gamification plays a major role in increasing the motivation of learning of the students (Baah et al., 2023). According to Perryer et al. (2016), gamification interacts with various theories of motivation, such as the Four-Drive Theory and Self-Determination Theory and stated clearly that gamification elements can be effectively implemented to achieve personal and organizational objectives. Building upon these arguments, it is inferred that:

Proposition 06: Learning motivation moderates the relationship between game characteristics and the behaviour/attitude of the learner.

Learning motivation moderates the relationship between instructional content and the behaviour/attitude of the learner.

Existing scholarly literature extensively investigates the impact of instructional content on learning outcomes within the gamification domain. Enhanced instructional materials, encompassing aspects like learner responses, knowledge, competencies, and perspectives, have the potential to modify learning outcomes and learner behaviors across diverse content domains and instructional methodologies, with reduced learning being a direct consequence (Landers, 2015). When students fail to engage proactively in educational communities, their advantages are diminished, hence this implies that instructional content has a major influence on learner behaviour. In addition, instructional content is considered as a vital element in gamification. For gamification to achieve success, it is essential that the behavior or mindset being addressed by gamification has a direct impact on the learning process (Landers, 2015). Hence, it is evident, that instructional content influences the behaviour of the learner. However, this relationship is heavily affected by the motivation of the learner. Because although clear instructional content has been provided if the learner is not motivated and not interested in gamification it may not result in any kind of learning or changing the behaviour of the learner. Thereby, in the above relationship learner motivation plays a crucial role.

When people are better motivated they tend to learn well as well as tend to gain more favourable experiences. As stated by Chan and Ahern (1999) the objective of any instruction is to facilitate students in gaining the necessary knowledge or skill in optimal circumstances. In the instructional design literature ARCS model, introduced by Keller is highly considered related to motivation. This model emphasizes on four conditions namely; "attention, relevance, confidence and satisfaction". According to the model, capturing and maintaining the direct attention of learners is a fundamental requirement for motivating them. Secondly, it is

crucial to ensure that learners perceive the learning experience as personally relevant. Therefore, it's essential for students to view the provided instructions as connected to their important personal goals or motivations before becoming motivated to learn. Furthermore, even if the students in your audience perceive the content as relevant and are eager to learn, they may still lack appropriate motivation due to either excessive or inadequate confidence. Hence, to fulfill these three criteria, it is vital to shape the learning materials and environment, including the instructor's conduct, in a way that convinces learners they can master the content and experience genuine success in assignments. Consequently, when these criteria are met, learners will find satisfaction in the provided instructional content and develop a strong desire to learn, thus boosting their motivation (Keller, 2010). However, existing literature has not adequately investigated on enhancing learner motivation through instructional means (Chan & Ahern, 1999).

Behaviour is the result of the interaction between what we believe and how we feel (Bundy, 2004). Numerous factors play a role in determining changes in behavior within a healthcare context, and intrinsic motivation is revealed to be one key factor that influences behaviour changes (Bundy, 2004). Moreover, Bundy (2004) asserts that diverse motivational strategies such as; removing barriers and providing choice, are crafted to enhance the individual's motivation level which leads to behaviour changes individuals. Furthermore, diverse theories explain that motivation has a strong influence on behaviours and attitudes of individuals. As disclosed by Cook and Artino (2016) Expectancy-value theories pinpoint two primary, distinct factors that impact behavior: the extent to which individuals have confidence in their potential for success if they make an attempt, and the extent to which they perceive personal significance, value, or inherent motivation in carrying out the task. Moreover, the active process of regulating one's behaviour and manipulating the environment in pursuit of personal goals is fundamental to functioning as a motivated individual. The decision of whether individuals opt to pursue their goals is significantly influenced by their beliefs regarding their own abilities, values, and interests (Cook & Artino, 2016). Thereby, existing literature claims that motivation has a prominent influence on altering and modifying behaviours and attitudes of individuals. Accordingly building upon the above arguments it is possible to propose the final proposition as;

Proposition 7: Learning motivation moderates the relationship between instructional content and the behaviour/attitude of the learner.

Theoretical Implications

This paper provides significant theoretical implications for existing gamification literature. This study has focused on extending the application of the model proposed by Landers in 2015. Landers model explicates that learning outcomes are influenced by the learners' attitude/behaviours which are also affected by the quality of game characteristics and instructional content. However, the authors of the paper believe that learner motivation should also give pivotal importance to learner motivation in the gamification process as it would enable the learner to decide the extent to which they actively engage in gamification. Thereby, through the base provided in the existing literature, this study emphasizes the role of learner motivation by incorporating learner motivation as a moderating variable on the relationship between instructional content and a learner's behaviour/attitude.

Managerial Implications

This paper has substantial managerial ramifications. In the present digitalized world customer expectations are extraordinary and to guarantee customer contentment and the long-term loyalty of customers, employees are encouraged to exceed their conventional job responsibilities. Therefore, the importance of training becomes pivotal. In the reinvigoration of training and development gamification plays a significant role. However, as gamification is comparatively novel in the corporate context, it is important for managers to have a better understanding of how gamification works and insights into gamification to reap the expected benefits. Hence, this paper enables managers to understand the crucial role of learner motivation when adopting gamification strategies. Thereby when utilizing gamification in the training process not only a greater emphasis should be given to game characteristics and instructional content but also a major consideration should be given to learner motivation which enables managers to customize the gamification technique to suit with existing workforce in the organization to ensure that employees accepted and actively engage in gamification ensuring the success of the training process. Some of the gamification techniques that the organization can use are points and badges (implementing a system where employees earn points or badges for completing tasks, meeting goals, or exhibiting desired behaviours can boost motivation and engagement), leaderboards (creating leaderboards that display top performers can encourage friendly competition and drive employees to achieve their best), social interaction (incorporating social elements, such as shared achievements or collaborative tasks, can strengthen team dynamics and build a sense of community) etc. However, the initial motivation of employees towards these gamification programs is crucial for their success. Managers should promote a positive attitude towards these games before their implementation by effectively communicating their benefits and fostering an enthusiastic approach to the gaming culture. Creating an environment where employees feel excited and engaged about the gamification initiatives can significantly enhance their effectiveness and overall impact.

Conclusion

Gamification nowadays has become a popular method of pedagogical approach used by many academics and teachers to make students engage with the learning process. Gamification can be defined as the employment of game-related attributes (e.g.: scoreboard, leaderboard, badges, awards) as outlined in the Bedwell taxonomy, in settings that are not inherently games, with the intention of influencing behaviours or attitudes related to learning. As Landers (2015) mentioned there is a difference between serious games and gamification. Serious games are more traditional-oriented while gamification is more modernized and influences learners' behaviours and attitudes. In serious games, learner understanding is highly focused but in gamification learner understanding is not that much critical as long as the target attitude/behaviour is affected. As per the Landers (2015) model, the behaviours/attitudes of the learners are influenced by the quality of game characteristics and instructional design quality. The higher the quality of game characteristics and instructional design quality higher the behaviours/attitudes absorbed by the learner and subsequently derive positive learning outcomes.

In the corporate setting, promoting the extensive use of gamification as an employee training approach is highly recommended. Specifically, gamification can be a powerful tool

for boosting employees' creativity and innovation. Nevertheless, it is essential for managers to ensure that employees are sufficiently motivated to engage with the learning material and gaming components, as this is crucial for achieving lasting shifts in their behaviour and attitudes towards learning outcomes.

In this conceptual paper, we developed a model which is an expiation to the model of Landers (2015) by incorporating the learners' learning motivation as a moderator factor between the relationships of game characteristics and behaviours/attitudes and instructional design quality and behaviours/attitudes. From our viewpoint, we propose that the relationship between game characteristics and a learner's behaviour/attitude, as well as the relationship between instructional content and a learner's behaviour/attitude, are both contingent on the learner's level of motivation. Our reasoning behind this assertion lies in the fact that, even when a game incorporates numerous game characteristics and features high-quality instructional content, if the learner's motivation is low, the expected positive outcomes in terms of behaviour and attitude (such as engagement and satisfaction) will remain unrealized by the learner. Considering this argument two new propositions were developed originally which are (1) Learning motivation moderates the relationship between game characteristics and the behaviour/attitude of the learner and, (2) Learning motivation moderates the relationship between instructional content and the behaviour/attitude of the learner.

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