

BEHAVIORAL PSYCHOLOGY CONCEPTS AND THEORIES EMBEDDED IN GAMIFICATION

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ABSTRACT

Technological advancements, interconnectivity, and competitiveness brought about by globalisation experienced unprecedented development. Some undesirable changes like increasing employee turnover, 'burnout', and need for greater autonomy is observed. Similar trends are noted in spheres like learning and banking. Academia identifies 'low motivation and engagement' as a dominant cause for behavioural changes in participants. The interest in Gamification to improve motivation and engagement across commercial, learning, and organisational sectors has grown following significant success stories in different sectors. Gamification of processes and content had the potential to address issues of disengagement in disparate sectors. In order to appreciate how Gamification can be deployed more effectively to instil motivation and improve engagement amongst participants in different activities, psychological and behavioural impact of Gamification is studied. This paper aims to identify the evolution and adaptation of theories and concepts in Gamification as a tool to improve employee engagement. The control, leader board, points, levels of employees are calculated and mentioned. This paper hence attempts to identify the evolution of theories linking Gamification to motivation, engagement, and behaviourism. The objective of the paper is to inform both, the academics and practitioners of the conceptual requisites to maximise the potential of Gamification.

Keywords: Motivation, Engagement, Gamification, Behaviorism, Turnover, Extrinsic Motivation, Intrinsic Motivation

INTRODUCTION

Traditionally, work and play have been understood separately, almost mutually exclusive areas of human activity. Further, each has its own characteristics of serious and playful endeavor respectively. However, in recent times, there has been an increasing overlapping of activities of these spheres, with games becoming serious engagement and work becoming more enjoyable and fun-filled activities (Ferreira et al., 2017). Some of the earliest, but often overlooked correlation between work and play were studied academically by Huizinga that can be seen in *Homo Ludens* (1938) and by Roger Caillois, in *L'occchiodiMedusa* (1960), *The Writing of Stones* (1970) and *Man, Play & Games* (1960) (Robison, 2007). The current interest in gamification theories bears conceptual resemblance to the observations made by such earlier work by Huizinga and Caillois. The core of the earlier work by Huizinga and Caillois is founded on the "long-term analogies observed between the games and societies" (Idone Cassone, 2017). Specific observations about games and societal activities are embedded in the Caillois' definition of games as comprising of four categories: Agon (competition/superiority on a level-playing-field), Alea (randomness), Mimicry (improvisation, simulation), and Ilinx (risk-taking, thrill-seeking, "pleasurable-torture"). Huzinga refined the concepts further by adding the dimensions of Paidia (play) and Ludus

(game) (Jensen, 2013), that indicate instinctive exuberance and Mastery rewarded (refined, disciplined, and contrived together indicating “order”) (Robison, 2007). Gamification in the current times can be clearly understood to be comprising of the characteristics described in the propositions observed by earlier works of Caillois and Huizinga.

This article takes into consideration the fact that in contemporary times, a recent market research found that not more than 15% of employees globally (Matt Alderton, 2019) and 34% in the U.S are engaged with organizations according to the Gallup poll (Ted Skinner, 2021). In spite of the fact that companies spend more than \$18 billion annually on tools to improve employee engagement; the study goes on to observe that mere financial rewards, and perks “fall short of driving employee loyalty” (Matt Alderton, 2019). According to Ted Skinner, whereas as motivation is the “will to do something”, engagement is the “active agreement to do something for someone” (Ted Skinner, 2021). This study also takes into consideration a recent case study “Gamification and Work Motivation “by Shannon (2020). (Shannon, 2020) uses a quantitative analysis for empirical observations; the theoretical premises used in the research was based on Maslow’s hierarchy needs and Herzberg’s two factor theory of motivation. In this paper, further exploration of theories is undertaken to understand the inter-correlation between theoretical concepts (Fogg’s behavior Model, Self-Determination Theory, and Gartner’s hype Cycle) and gamification to understand the impact on motivation and thereby on Engagement. Further, more support to link Gamification, with motivation (both intrinsic and extrinsic) and engagement is found in the exploratory conceptual study titled “A Conceptualization of Employee Engagement Based on Gamification ”by (Akbari, 2020) where the authors undertake the study based on Choi’s model (2015).

The factors contributing to employee motivation and thereby engagement in organizational context comprises of three elements a) employees discretionary effort towards achieving organizational goals and objectives; b) making the best use of available resources to meet challenges at work in the most efficient and productive manner, and c) a supportive and conducive work environment that helps keep employees motivated through collaboration, competitiveness, sense of completion, and psychological satisfaction.

LITERATURE

Employee Engagement

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Employee management has been identified as one of the most important factor to organizational functioning and growth as it is inextricably related to HR factors– productivity, morale and retention (Clack, 2021; Derval, 2019; Mahapatro, 2010) The benefits of engaged employees in an organization have been identified in current times as a) better customer satisfaction 2) improved productivity and efficiency 3) reduction in staff turnover 4) lower absenteeism 5) enhanced company culture 6) improved safety (Valamis, 2020). However, in spite of the continual academic pursuit, there is a lack of consensus among academicians regarding the conceptual meaning of employee engagement.

Some of the significant theoretical concepts on engagement (in different contexts such as learning and organizational work) was proposed by Kahn (in 1990 and 1992) (Terry 2020) followed by the largely acknowledged Job Demand –Resources (JD-R): theory proposed by Baker and Demerouti in (2007). Academic literature cites more theoretical postulations relevant

to current scenarios at the workplace. However, most of the current observations and theoretical formulations are based on empirical theories put forth by Kahn and others.

Building upon the empirical theoretical proposition of Kahn, modern theories such as JD-R incorporate facets of all stakeholders- organizational, psychological and physical characteristics as causative to employee engagement (Sun & Bunchapattanasakda, 2019). Literature on employee engagement, encompasses the skills, emotional efforts, and cognitive demands and the consequent costs on employees such as insecurity, work overload, and social-life sacrifice at the personnel level (Akbari, 2020; Clack, 2021; Derval, 2019; Mahapatro, 2010; Niraula & Phil, 2020; Thomas, 2017). On the organizational level, the resources needed to counter negative affectations for ensuring engagement (exhibiting “full self”) are those that help alleviate demands by providing for an environment to encourage engagement. Specifically, some of the job resources have been identified as meaningful feedback, communication channels, rewards, autonomy, scope for innovation and facilitation of career growth opportunities. Specifically, in a seminal work, titled “Employee Engagement Level and Its Key Determinants: a Study in the Context of Nepalese Media Sector” (Niraula & Phil, 2020) found that job resources, communication, facilities provided by the organization, participatory culture, and recognition and performance appraisal are the key HR practices to keep employees engaged.

The evolution of conceptual postulations is an ongoing exercise. The academia is divided over definitions of employee engagement [what do you mean?]. The term involves disparate facets and parameters. The means and mode of measurement of such parameters are not yet formalized. This has led modern authors Remo (2012), Saks & Gruman, in 2014 to ask, “What do we really know about Employee Engagement?” (Saks & Gruman, 2014), and later by Young in 2018.

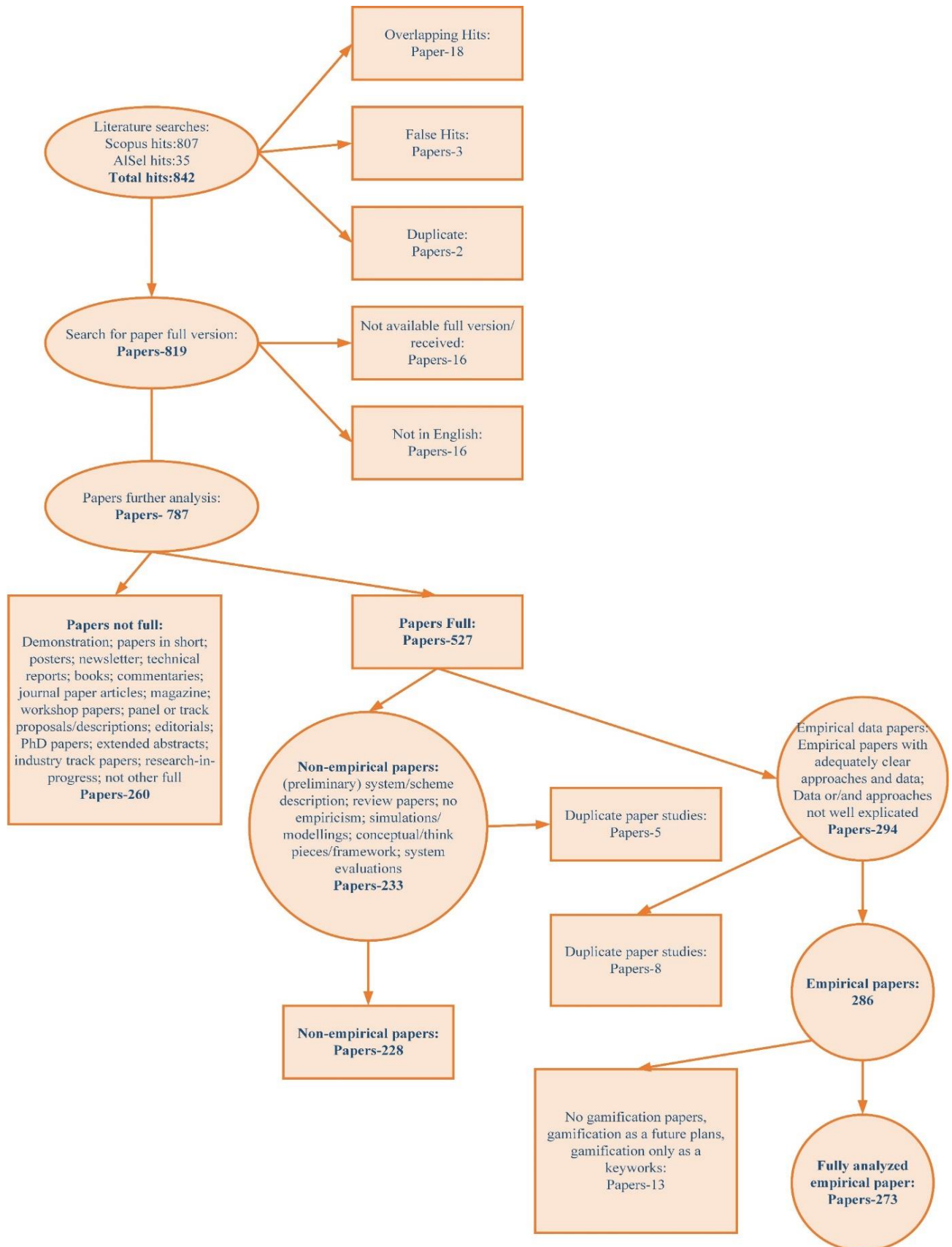


FIGURE 1
(KOIVISTO & HAMARI, 2019) FLOWCHART DESCRIBE THE PROCESS OF
LITERATURE REVIEW OF GAMIFICATION

Table 1
LITERATURE REVIEWS SUMMARY ON GAMIFICATION

Sl. no	Reference	Features of Gamification	Results	Content for Gamified	Theoretical connections
1	(Eleftheria et al., 2013)	Badges, points, virtual goods, challenges,	Positive	Augmented reality science book	Not available
2	(Hanus & Fox, 2015)	Leaderboard and badges	Positive	Two college courses	Cognitive motivational theories
3	(De Freitas & de Freitas, 2013)	Rewards, levels, points	positive	Computer science class	Not available
4	(Gibson et al., 2015)	Badges	Positive	Not available	Intrinsic and extrinsic motivation
5	(O'Byrne et al., 2015)	badges	Positive	Youth program	New literacies studies
6	(Barata et al., 2013)	Badges, points, challenges, leaderboards, levels	Positive	Computer engineering course	Not available
7	(Betts, Bal & Betts, 2013)	Levels, elements, choice	positive	Web-based collaborative learning tool called curatr	Not available
8	(Berkling, & Thomas, 2013)	Levels, points, leaderboard	Negative	Software engineering course	Motivational Theory
9	(Kingsley, & Grabner-Hagen, 2015)	Points, Badges, quests	Positive	3D Game lab Software	New literacies studies
10	(Thom, Millen & DiMicco, 2012)	Points, badges and status	Negative	Social network service	Intrinsic and Extrinsic Motivation
11	(Todor & Pitică, 2013)	Rewards, Badges, Points	Positive	Course in electronics	Not available
12	(ParulKhurana, n.d.)	Levels, Badges, Points,	Positive	Teaching programming languages	Not available
13	(Brewer et al., 2013)	Points and rewards	Positive	Children's learning	Not available
14	(Leaning, 2015)	Leaderboard and points	Mixed	e-media course	Situated Motivational affordance

Modern engagement theories are built on empirical engagement theoretical propositions by Kahn– significant in it is the “ability to harness their ‘full self’”, that not only indicates autonomy but also confidence to take up responsibility. The role of the organization in encouraging such expression is found in the JD-R theory which is much more relevant in current times of technological advancement and interconnectedness. However, academicians do not concur on the definition and factors of engagement, and hence is still an ongoing pursuit.

In current times where feedback, recognition, interconnectivity and technological advance dominate all aspects of human activities, Gamification is increasingly being looked upon as a tool to improve motivation in diverse serious undertakings. Gamification is based on the concept of making ‘serious work’ more enjoyable, thereby invoking better engagement. Another important observation when considering the modern workforce is that there are worryingly more instances of ‘burnout’, ‘job-hopping’ and lack of loyalty at workplaces.

GAMIFICATION

Gamification is in its nascent stage and the most widely accepted definition is ‘Use of game elements in a non-entertainment context’ (Deterding et al., 2011; Werbach & Hunter,

2012). The intention behind using gamification in workplaces goes beyond winning, and incorporates more of a habit-forming pursuit aligned towards larger organizational goals and vision (Gunn, 2020). A variation of the definition of Gamification is proposed by Nicholson, (2012). Nicholson (2012) encapsulates effective Gamification perceptively (Nicholson, 2012) as “meaningful Gamification is the integration of a user-centered game design element into non-game contexts” (Dubey, Chavan & Patil, 2016).

Combining the two explanations above, Thomas Hsu, the executive head of Global Collaboration of Accenture also proposes organizations to use gamification as a tool to “use game psychology and game dynamics to change behavior” (Harbert, 2013). Thomas Hsu encourages organizations to use gamification in the workplace and business processes as the conventional tools used to improve efficiency, engagement and motivation no longer seem sustainable enablers. He advises organizations to invest in playful activity constructs that gamification can embed in organizational processes and activities. According to him, a playful environment is both enjoyable and motivating (with rewards and fair, instant feedback) (Harbert, 2013) that helps employees engage better with stakeholders.

The underlying theme Thomas Hsu tries to convey in his observations is that psychological affectations are crucial factors in pursuit of achieving desirable employee engagement outcomes. The implication of Thomas Hsu’s observations regarding Gamification based on practical experiences involves not only the on the elements and strategies but also on the outcomes used in organizational (Accenture) construct.

The message in the observation of Thomas Hsu is that Gamification can be used as a tool to help keep employees motivated, an important precursor to improvement in employee engagement in organizational tasks. Secondly, in the current technological state and the involvement of the current generation with electronic devices, and more so with videogames, Gamification coordinates varying facets of motivational psychology, econometrics from commercial activities, gaming industry (video games) and ICT (Internet and Computer technology) to achieve impressive results (McKenzie, 2011; Xu, 2012).

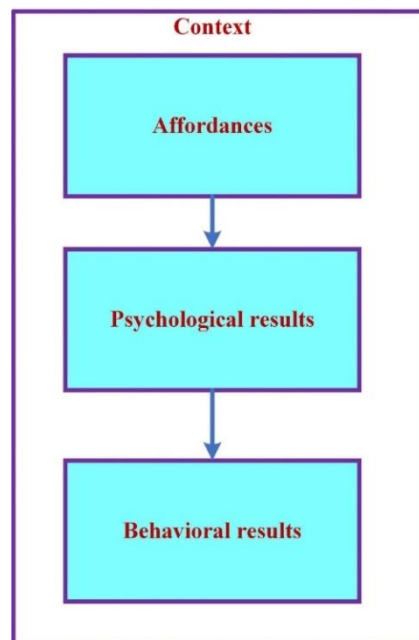


FIGURE 2
OVERALL CONCEPT OF GAMIFICATION

The aim of gamification to support and motivate is shown in figure.2. Mark Thomas (now with PPI Network), an international business consultant advises referring to the Gartner’s Hype cycle in order to understand the response of employees to technology tools for

improvement in organizations. Organizations pass through the “peak of inflated expectations” upon “being subjected to “technology trigger” only to go through “trough of disillusionment” before finally realizing the “slope of enlightenment” and settle in the “plateau of productivity” – higher level of productivity compared prior to that when the trigger was applied (Thomas, 2017). In his article titled “HR and the “Hype Cycle” (Thomas, 2017), Thomas supports his claim through the historical following observations about organizational perspectives:

1980s & 90s - Quality and “Customer is King” initiatives

1990s – Business Process Engineering, Ulrich’s HR Model, Core Competence

2000s – Knowledge Management, Emotional Intelligence, the Learning Organization and the War for Talent

Today – Staff Engagement, Wellbeing, Evidence Based Management, Dumping the Annual Appraisal & Digitising L&D and core HR Processes

Further, Gartner’s Hype Cycle has been used by HR (human resources) professionals “to track the maturity and adoption of specific technologies”, similar to the acclimation to new software’s by practitioners. Teresa Zuech, (2020) advises organizations to take cognizance of cloud-deployed suits in HCM (Human Capital Management); he anticipates that by 2025, 60% of organizations in the large and medium sector will have a diversified and dispersed workforce. Zuech cites the observations of Helen Poitevin, (VP analyst, Gartner Inc.) to state that HCM projects face “transformational impact of new technologies” (Zuech, 2020). Zuech advises: “HR leaders and their IT partners can use the Gartner Hype Cycle for Human Capital Management, 2020 to gauge the maturity and capabilities of those new technologies” in his article “3 Trends in the Gartner Hype Cycle for Human Capital Management, 2020” (Zuech, 2020).

The specific game elements that drive motivation and engagement in enterprise gamification are described as Playfulness, Motivation, Collaboration and Competitiveness. The game elements designed for organizations are formed through purposive design of PBL (Points, Badges, leadership Board) along with levels, provisions for autonomy, social connectivity platforms and other tools. The design of the gamified activities is centered on the specific goals of the organizations and the profile of the employees in the context of the enterprise environment and work culture.

Motivation

Motivation has been regarded in literature (especially with regards to Gamification) mainly as appositive psychological affectation causal to behavioral changes brought about by meaningful engagement in undertaken tasks (Dorling & McCaffery, 2012; Yang, 2014). In reference to using Gamification in academic learning for improving the engagement of learners, Dorling & Mccaffery (2012) suggest understanding the psychological preferences and orientation of the 21st century learner and devising means to improve motivation amongst learners and thereby engagement to improve outcomes. In one of the latest case studies, Sari Shannon, (2020) observed that “gamification can have many positive impacts on work motivation” (Shannon, 2020).

Further to understanding motivation sought to be used as moderator to improving engagement using Gamification as a tool, according to Muntean (2011); Swan (2012); Zichermann (2011) who provide the insights of inducements of Motivational psychology as being intrinsic motivation and extrinsic motivation (Matthews, Campbell & Falconer, 2001; Cunningham, 2011). Matthews et al., (2001) define achievement and success as an indication of extrinsic motivation, and that of feelings of interest and satisfaction in any engagement as intrinsic motivation. Porter & Lawler (1968) have advocated designing the workplace environment to ensure intrinsic and extrinsic rewards upon achieving effective performance levels (Matthews, Falconer, Joyner, Gilliland & Campbell, 1999).

Intrinsic and Extrinsic Motivation

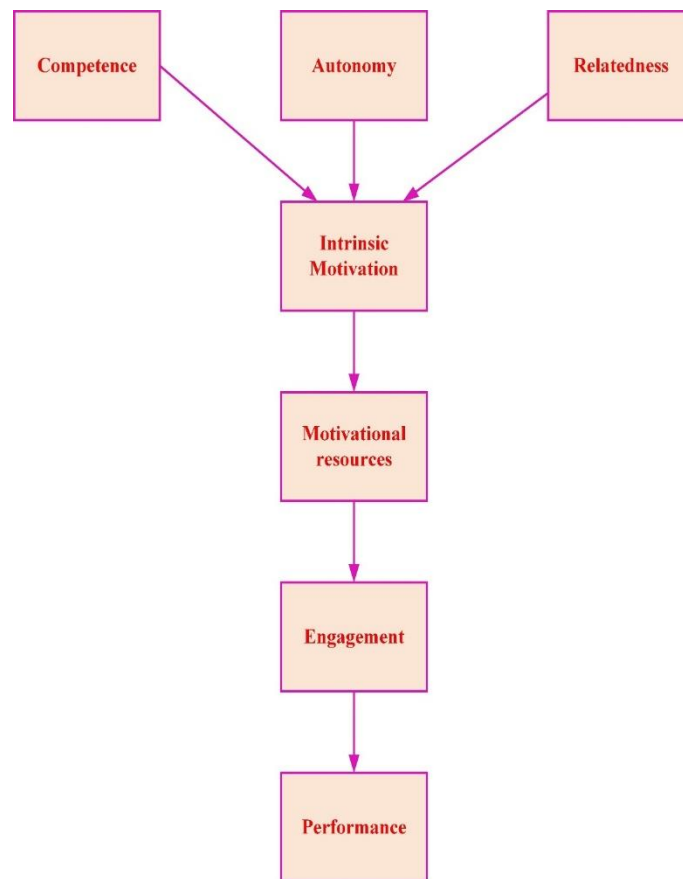


FIGURE 3
ENGAGEMENT AND PERFORMANCE MODEL

The aim of gamifying is to improve engagement of employees in the pursuit of organizational goals. The positive correlation of engagement with organizational performance has been observed in scholarly literature (Buggie, Pluck & James, 2015). According to Fogg's Behavior Model, motivation is the dimension that is indicative of the user's willingness to accomplish assigned tasks. The success in design of game elements in gamification is the ability to motivate employees to improve engagement. According to Abraham Maslow's theory (1943), the motivational factors are identified based on basic human needs: safety, psychological needs, love/belonging, esteem and self-actualization. Depending on the presence of these factors, Maslow theorizes that human's priorities their needs and are motivated to accomplish them. Finally, B.F. Skinner proposed that each individual is motivated by different factors and that each individual is driven by a combination of factors contextually. In organizations, employees need to align their free will with the common goals set by the management. Thus, the organizational goals can be achieved when there is an alignment of individual priorities and collective goals. An employee needs to be motivated by both individual as well as organizational requirements. Motivation can be both extrinsic as well as intrinsic. Though both are causal to positive changes in engagement, extrinsic motivation has been observed to be unsustainable while intrinsic motivation is sustainable and hence has more potential for behavioral changes.

The extrinsic motivational inducement in literature has been identified as rewards or feedback (including penalties) in terms of success or failure measured exclusively by tangible outcomes (Yang, 2014). On the other hand, the focus of intrinsic motivation is on behavioral aspects rather than merely on rewards or tangible outcomes. Intrinsically motivated people would be engrossed in activities because they enjoy the process of doing the task (Richter,

Raban & Rafaeli, 2015; Suh, Wagner & Liu, 2015). The focus of intrinsic motivation is on behavioral aspects rather than merely on rewards or tangible outcomes. Behavioral pursuits and the change in habits is one of the essential elements sought through Gamification.

Adding to discussion, Fogg's Behavior Model holds that ability and motivation are correlational. A trigger (external stimuli) is required to inculcate motivational behavior in employees. The required stipulation, however, for motivation to take effect is that the trigger or external stimuli should be balanced with the current ability of the participant to confidently attempt achieve assigned tasks. If the capabilities and challenge (external stimuli) are mismatched then the motivation is not manifested. For motivating participants to engage with tasks the stimuli should be challenging enough but not disproportionately high or low, that would result in boredom or give up citing inability to cope.

Behaviorism

According to the Stanford Encyclopedia of Philosophy, "behaviorism is a doctrine — a way of doing psychological or behavioral science itself" (Graham, 2019). Put colloquially, behaviorism is the attitudinal perception of viewing psychological state through empirical constraints. Wilfred Sellars (1912-1989) simplifies the concept by stating that a behaviorist considers only behavioral evidence to explain a state of mind or to differentiate between two relatable states of mind, such as belief and desire, for example. Sellars states that mere attribution is of no consequence if not supported by empirical behavioral evidence.

In terms of the behaviorism doctrine, however, the comprehension of behaviorism involves three claims – 1) Methodological: Psychology is a science of behavior; 2) Psychological: the sources of behavior are not internal (mental events or psychological process) but ambient conditions and 3) Analytical: in terms of psychological theory development all attributes of state of mind concerning mental concepts should be understood or replaced by behavioral concepts.

In specific reference to motivational and engagement states of employees in an organization, and to the work in which they are involved, B. F. Skinner provides the most comprehensive treatise following the development of cognitive science from 1960 to 1985. The relevance of Skinner's social worldview seen in reference to Gamifications a tool to improve motivation and thereby engagement is embodied in his "aversions to free will, to homunculi, and to dualism as well as his positive reasons for claiming that a person's history of environmental interactions controls his or her behavior" (Graham, 2019). Skinner insists that "it is in the nature of an experimental analysis of human behavior that it should strip away the functions previously assigned to a free or autonomous person and transfer them one by one to the controlling environment" (Graham, 2019).

In the context, an important theory is the Self-Determination Theory (SDT). SDT can predict "goal-motivated behavior" by probing innate psychological needs and estimating the impact of external stimuli (rewards and punishments, for example) (Gears, 2011). It covers effect of both, intrinsic as well as external stimuli on motivation (Ackerman & Tran, 2018; Deci & Ryan, 2008). The three main contributors to cause motivation, as defined by the SDT are Competence (skill, ability to complete an assignment, as in a game), Relatedness (socializing with players in the same/similar activity, often arousing competitiveness), and Autonomy (the independence to choose paths towards achieving goals). In essence, as explained by (Gears, 2011), motivation directs behavior as an outcome of innate desire towards accomplishments. As seen by the Skinner's behavioral theory, the motivational aspects are exhibited socially by the behavioral aspects induced by external stimuli.

METHODOLOGY

The criterion for including articles accessed in this review of literature on gamification to improve employee engagement is based on the different theoretical concepts proposed by academia and used by organizations towards achieving specific goals. The search method for articles is explained in the flow chart below for easier understanding. The main steps involved in the study of articles are: Identification, Screening, Eligibility, and Inclusion.

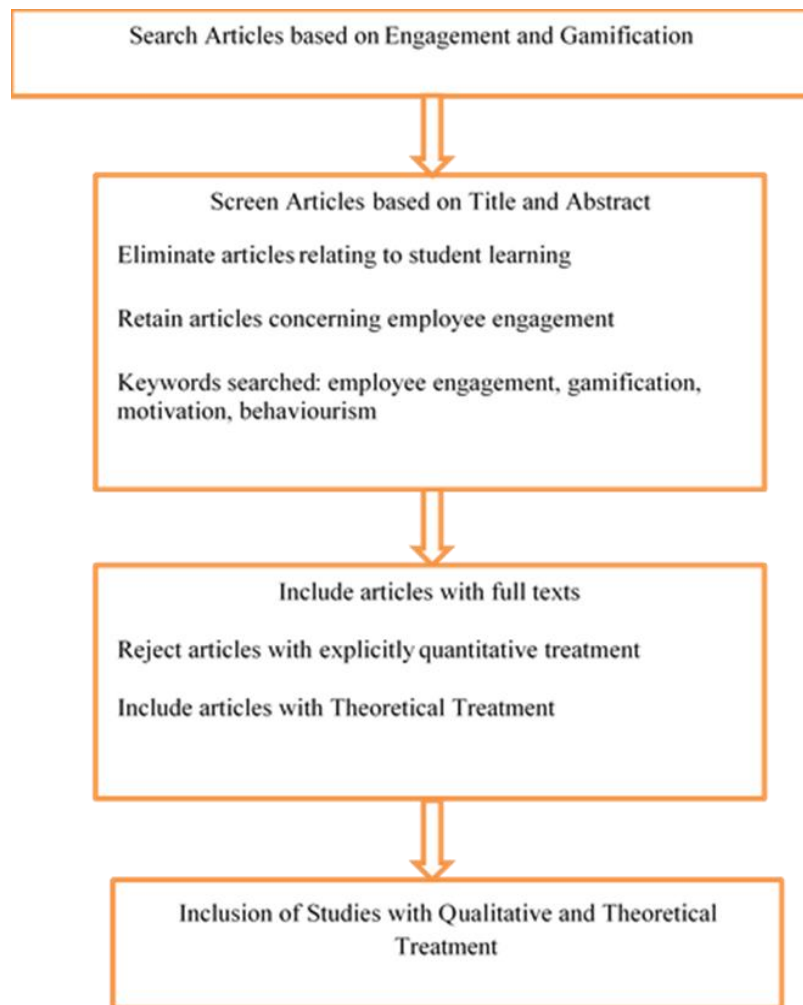


FIGURE 4
SEQUENCE ADOPTED FOR THE LITERATURE SEARCH

SUMMARY

This study purpose concept of design and methodology to solve the motivational and engagement issues for employer in organizational. A summary was carried out to evaluate the gamification environment. Gamification is a new and irreversible trend in motivating modern employees and the management of most large western organizations is based on its components (Miciuła & Miluniec, 2019). Therefore, increasingly modern firms are integrating gamification components to their work in order to include employees in the efficient and successful performance of their responsibilities. At the recruitment stage of modern job candidates, who need the elements of gamification are already used are:

- Know the real working environment picture
- Learn about the culture and principle of the firm
- Learn about workload and expectations
- Learn to know the business day

It has to be nourished and skillfully inspired by its employees. It is its main asset (Baxter, Holderness & Wood, 2017). Gamification programs encourage separate tasks to be integrated into a coherent and effective working environment. It helps to improve company communication, streamline procedures and so save time and the subsequent rise in corporate competitiveness. The successful game design enables players to try attain success on several occasions. In the split environment, failure is redefined where it is not a setback but “a chance to learn and remedy errors” (Baker, 2004).

Research has shown that players who received constructive comments in a gamified environment after failure have exhibited good emotion regarding their experience as a “route to success” in the gamified world (Attali & Arieli-Attali, 2015). In order to evaluate its full potential, researchers have proposed the use of full play features over a longer time period. Limited game elements can not provide a desirable or measure effect, in isolation from an existing course. The limited application of gamification to the learning of certain features of games produced mixed or negative performance and motivation results.

The gamification project for the Santander bank is an example of the number two practical application of gamification in business. A mobile application that permits virtual customer discussions from the preparation to the end of the sales process is developed to meet its needs. The aim is to achieve maximum numbers of customers (Rodrigues et al., 2018). The bank consultant has the choice of selecting between three customers of various difficulty levels. Player achievements in the form of a rating have been published, and this introduces a competition element. More than 78% of the project staff raised their performance by 20%, contributing to the bank’s financial success. This example shows the efficiency of the game mechanics provided for managing human resources in companies. Gamification is a frequently employed phenomena in education, recruitment, sales, and marketing, and continues to grow in popularity (Herzig et al., 2015).

The implementation of gamification programs in a company has several advantages. Not only the individual himself, but the whole company are aware of the good impacts of gamification. Efficient corporate management is built mostly on proper human resources management. Mostly on proper human resources management (Nikolaou, Georgiou & Kotsaralidou, 2019). It is its most significant capital that employees in the organization have to be fostered and skill motivated. Gamification programs encourage separate tasks to be integrated into a coherent and efficient working environment. It helps to improve workplace communication and simplify procedures, saving time and thereby increasing the company’s competitiveness.

CONCLUSION

The aim of this article was to identify in literature the significant concepts and theoretical premises relevant to the use of emerging deployment of Gamification on organizations to improve employee motivation and engagement. This search has revealed that the concept of overlapping play and serious work has been studied for long, since 1938 by Huizinga and Callioisin later decades; Essentially, work and play are not mutually exclusive activities, as also that each benefits from other when relevant elements in measured and due proportion are used.

The use of Gamification as a tool lies in its potential to inculcate positive behavioral changes such as competitiveness, collaboration and knowledge sharing in the workplace in pursuit of goals set by organizational management. The mediating factor between gamification (as the input) and engagement (as the output) in enterprise Gamification is Motivation. Motivation is a psychological state that is understood in literature as the precursor to behavioral change. Points, levels and leaderboards are not only the most basic, but also three of the most often used features in a game. The roots of motivational discourse and empirical foundations can be found in Maslow’s work in 1943 followed by B.F. Skinner, upon which modern theorists

such as Yang & Suh et al., and Richter et al., in 2015 added further insights that have been used when deploying Gamification.

This work intends to bring to light the main concepts around which Gamification and engagement theories have been appreciated in literature, both as an academic pursuit as well as the practical implications that organizations may do well to consider in achieving better productivity and growth through creation of supportive ambience for employees. Such a pursuit is relevant in times of changing technological advances, globalization, and need for inculcation of better engagement behavior.

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