Brands Gamified: Concept, Applications and Challenges

Suzanee Malhotra

Assistant Professor, Shaheed Bhagat Singh Evening College, University of Delhi, Sheikh Sarai, New Delhi-110017

*Corresponding author: suzaneedull@gmail.com (Suzanee Malhotra)

ARTICLE INFO

Key Words: Artificial intelligence, Gamification, Mobile Culture, Six Thinking Hats, Thematic analysis, Virtual Recreation

ABSTRACT

Purpose: This article aims to contribute to build an understanding of the new concept of gamification that has made a buzz for itself recently. Despite being a trendy research topic, it still lacks sufficient literature studies to understand this concept from all angles. This article initially aims to provide an introduction to this trendy concept along with its applications and examples.

Proposed Design/Methodology/Approach: Inspired from Dr. Edward de Bono's, six thinking hats this article provides a new and detailed analysis of the gamification concept from different angles. 12 Qualitative interviews were put to thematic data analysis under Nvivo software for coming to the research findings that are very interesting and one of its kind.

Findings: The findings of this study are very crucial for brands involved and interested in the business of gamification. From the positive and creative sides that this concept offers, this paper has also indicated the negatives, facts and figures, feelings aspect as well as the planning required for this concept. Practical/Theoretical implications: With many new trends emerging in the world of digital marketing over the past couple of years, gamification has created a buzz for itself. An innovative yet appealing tool to attract consumers towards brands and keep them emotionally involved, it has been increasingly used across different types of brands.

Originality/value: A novel approach for understanding the brand gamification concept on 6thinking hats approach is presented in the study. This article provides a base for future studies from an empirical angle in this domain

Received 15.07.2021; Accepted 10.8.2021

DOI: 10.48165/gm.2021.1521

Copyright © Gian Jyoti Institute of Management and Technology, Mohali

(https://www.gjimt.ac.in/about-gyan-management-journal/)

that has not been taken up in this particular study. *Limitations:* This paper used qualitative study and the quantitative study has not been addressed in this article.

Introduction

The growing use of internet and technology have made games a necessary part of our lives providing entertainment (Malaby, 2007). Due to this many daily life activities have become 'game-like' for us, and it is not only related to the traditional video games, but our mobile apps, shopping experience and other processes are increasingly becoming *gamified* (Deterding, 2015). Gamification has become a new trend whose popularity is rising and its use is also increasing in many activities, so is the research also in this area (Eppmann, Bekk & Klein, 2018; Koivisto & Hamari, 2019; Seaborn & Fels, 2015; Terlutter & Capella, 2013).

Gamification has little features of game-like, but not all the features of gaming. It is used in many industries like retail, media, consumer goods etc. It is used for employee education and consumer interest generation. The brands must understand the users' responses in designing their game features like leader-boards, rewards and other 'in-game level outcomes'. Gamification can be also used within the company to increase motivation of employees, job satisfaction, productivity, reduce job turnover etc.

Smartphones, virtual reality or VR and augmented reality or AR have helped in increasing the use of gamification for non-game activities (Maican, Lixandroiu, & Constantin, 2016; Mekler et al., 2017; Seaborn & Fels, 2015). Also the modern lifestyle that wants things with ease is a main reason behind rise of gamification. This idea increases the interests of consumers in education. healthcare, training, and shopping (Bunchball Inc., 2010; Takahashi, 2011). It can be used easily with social media-based apps (Jin, 2016). Businesses also make use of game like features in their apps to link with the consumers in a better and trendy way. This is a form of gamification only. It not only helps in soon meeting of their needs but also rises their joy. Also this is a more owner based way of linking with the consumers, over the mass media based ways. Thus, this concept has become very important now.

Despite gamification idea having a huge growth rate, it has been used very less and majorly its use is to create interests among employees and consumers (Bittner & Shipper, 2014; Conaway & Garay, 2014; Hofacker et al., 2016). The purpose of this paper is to address the gap by trying to introduce this trendy concept along with its applications and examples. Later, inspired from Dr. Edward de Bono's, six thinking hats this article provides a new and detailed analysis of the gamification concept from different angles. This paper is expected to help businesses by giving them some key points about this concept that is very new and trendy.

Literature Review

Gamification refers to the "transformation of technology to become more game-like, with the intention of evoking similar positive experiences and motivations that games do (the gameful experience) and affecting user behavior" (Högberg, Hamari & Wästlund, 2019a, p. 620). Gamification features can be included in any business "activity, system, service, product, or organizational structure" to make it more trending and appealing (Wünderlich et al., 2020, p. 273). Gamification is a recent trending concept "denotes the introduction of the main components of a game, such as fun, rewards, and competition, into a non-game context, such as a website or an application, to increase user engagement" (Lee & Jin, 2019, p. 3).

Because of changing technology and cultures this concept has become popular (Maican et al., 2016; Zichermann & Cunningham, 2011). The rise in smartphones and app culture as well as changing likes of people in favour of games (Maican et al., 2016; da Rocha Seixas, Gomes & de Melo Filho, 2016) that makes businesses to sell goods and services in a gamified way that is also entertaining. Some gamification elements are rewards, competition, victory, fun, story

telling etc. Brand gamification can help to make apps more communicative and consumer based to increase their interest in them (Marie et al., 2018; Yu & Yu, 2007). The help of VR and AR ie virtual and augmented reality can be made to make the in game brand features more appearing to the custom-

ers or users with smartphones (Di, 2010; Dodds, Mohler & Bülthoff, 2011; Slater et al., 2010). AR is uses real and virtual reality features to make things more interesting (Benyon et al., 2006; Di, 2010; Slater et al., 2010).

Gamification as a concept is seen to be a good influencer for many business sectors like retail, healthcare, education etc (Blohm & Leimeister, 2013; Conaway & Garay, 2014; Koivisto & Hamari, 2019; Seaborn & Fels, 2015) with beliefs that it will be adopted by many businesses (IEEE, 2014; Takahashi, 2011). Brand gamification can lead to higher sales, happy consumers with good feedback also (Conaway & Garay, 2014). Studies looking for the various short-term and long-term effects of gamification on consumers are less (Bittner & Shipper, 2014; Harwood & Garry, 2015) and more research is needed about this concept.

Game design features like badges or leader-boards impact consumer's motivation, emotion and brand attitude. Lee and Jin (2019) have shown that winning badges make the consumer choose the brand again also, highlighting the positive role of in-game features on consumers. Leader-board design is important to consumers to keep in their sense of winning and enjoyment which impacts their attitude for the brand also (Mekler et al., 2017). Gamification is both cognitive and emotional so game mechanics must be based on both (Lee & Jin, 2019)

Brand apps used to deliver brand and product information to customers can help in linking with the consumers interactively (Jin, 2016). Brand apps can also create 'real-world experiences' (Lombard & Ditton, 1997). Based on past studies brand apps with gamification features can increase the consumers response for the brands. Fun, rewards, competition, and storytelling are considered as main features of gamification. Consumers enjoy from the 'fun storytelling' in the brand apps as a feature of gamification. Gamification done using brand apps, having fun and storytelling features have strong effects on consumers over others.

Bittner and Shipper (2014) study impact of consumer motivation over brand buying based on game feelings of expressive freedom and self-development. With discount and reward coupons advantage, gam-

ification increases loyalty also (Harwood & Garry, 2015). People like to have fun and like interesting things, thus gamification is based on both these two ideas- fun and interesting. Brand gamification can make boring things fun and enjoyable (Maican et al., 2016; da Rocha Seixas et al., 2016). Zichermann (2010), a famous Youtuber in one of his Google Tech Talks has defined gamification as the fun for future by stating that it involves "the use of game elements and the process of game-thinking and game mechanics to engage users and solve problems".

With including game features in brand apps, the real location of customers can be known and many offers and services can be changed according to them (Benyon et al., 2006; Di, 2010; Dodds et al., 2011; Marie et al., 2018; Slater et al., 2010; Yu & Yu, 2007). Brand gamification can help in real communication with customers and know their feedback directly in fun way (Dodds et al., 2011), which is very unique and interesting way also. Use of brand gamification in the healthcare sector can lead to some positive impact over patients as well educate them in a play-way (Huber & Hilty, 2015).

Brand gamification research is a latest and emerging field (Fijnheer, van Oostendorp & Veltkamp, 2016) where the impact of in-game designs, gaming elements and influence on consumers is yet to be understood properly (Mulcahy et al., 2018). Some studies have also shown that gamification concept can be used inside of the business to improve job satisfaction and employee productivity (Oprescu, Jones & Katsikitis, 2014). Zimmerling et al. (2019) have looked into the brand gamification for employees satisfaction, achievements, and progress. Gamification can also result in knowledge-sharing among employees with motivation (Mekler et al., 2017). All this can help in improving the corporate culture of business.

However, some also believe that if this trendy concept is not properly implemented then it could be a big failure for the business also (Burke, 2013). Many businesses have failed or suffered losses due to wrong designing or planning for this concept and the little research and understanding of this concept is one factor behind this (Morschheuser et al., 2018). The paper shows that companies must develop their apps

with latest technologies to link with customers and provide them with great benefits by using gamification.

Methodology

The paper aimed to explore the new trendy concept of brand gamification, to explain the concept provide its examples and applications. Apart from these, this paper has made use of Dr. Edward de Bono's, six thinking hats to provide a new and detailed analysis of the gamification concept from different angles. For this use of Judgement sampling was made to interview 12 marketing research scholars to uncover the key characteristics of this trendy concept from different angles. Judgement sampling permits us to select units of sample that in most probability can fulfil required objectives for the study (Bryman, 2016). During June 2021 the research scholars from age 26 to 35 years from Delhi University were interviewed as a focused group online. The focused group interviews were put to thematic data analysis under Nvivo software for coming to the research findings that are very interesting and one of its own kind. The thematic analysis kinds of forms themes in the data to come out with the findings. Since this study has made use of 6 thinking hats technique, there were 6 broad themes that came in the thematic analysis.

6 thinking hats is a technique of parallel thinking used in group setting to provide detailed and combined thinking for any idea from all possible angles to get effective solutions or outcomes (De Bono, 2017). This technique was given by Dr. Edward de Bono in 1971. He has described this techniques as a brainstorming activity in his book 'Lateral Thinking for Management' (Aithal & Kumar, 2017b). The simple logic is that human brain can analyze any problem from many different angles, so must be done by the business firms for any business idea or problem (Aithal & Kumar, 2017a; Göçmen & Coşkun, 2019). The 6 different hats as given

by Dr. Bono are- White hat for factual information, real figures or data available; Yellow hat focusing on the positive or benefits side of any idea, what good can that idea bring in; Green hat that sees for the creative side or how can a new idea lead to doing new things in a more innovative way; Red hat sees for the emotional side of any idea or how can it affect people's feelings; Black hat sees for the dark or negative side of any idea, the pessimism or dis-advantages that can happen with the idea; and the Blue hat for the full planning or organization of an idea (Serrat, 2017).

There are only a few marketing studies that have made use of this technique in research, as mostly this technique has been used in HR and OB majorly (Aithal, & Kumar, 2017c). Thus, the use of this technique in this paper is new and innovative for research. Also, this paper has used innovative Nvivo software for coming with the new and interesting findings. Table 1 shows quotes of research scholars as found in analysis and the coding that has been done with the help of Nvivo. Nvivo can do graphical analysis like generating word clouds from the most spoken words of the interviews. The Figure 1 shows the word cloud.

Analysis

Gamification has become a new trendy area for research (Hammedi, Leclerq & Van Riel, 2017; Högberg et al., 2019b; Jang, Kitchen, & Kim, 2018; Parjanen & Hyypiä, 2019; Zimmerling et al., 2019), but still is little research on this concept from different approaches. This paper has looked into this area by doing 12 qualitative interviews of marketing research scholars and then using Nvivo software for thematic data analysis on the lines of six-thinking hats method. This section has shown the analysis of the interviews on 6 thinking hats approach. Table 1 summarizes the views of interviews as found by the 6 thinking hats approach.



Fig. 1: Word cloud Source: Author

Table 1: 6 Thinking Hats views summarized for Brand Gamification

White Hat, Facts and Figures

- "....you know India has a huge number of internet users, after China, that is, the second-largest internet user country. So the possibility of using anything related to mobile phone use will be profitable in India."
- "I have seen in marketing reports that in 2020 only, many people in India have started playing some type of mobile or computer game daily, of course that is due to Covid."
- "There are some notes about India like a rapid rise in use and cheap price of smartphones with cheap mobile data have made mobile phones as the most preferred device for playing games which can impact decision making of firms...."

Yellow Hat, Positivity

- "When consumers become players for a brand in their games and they earn some reward points or discount coupons then chances of they coming back to buy from that brand in future are high I guess."
- "....the game like features can make the simple brand advertisement more dramatic and visual, and I believe that can make the advertisement more interesting for consumers." "... I guess the simple plus of brand gamification is making the buyers know a lot about a brand and its products. You see if you teach small kids the a to z with some mobile
- apps having better graphics and design they learn easily. Same is with consumers, where the game like brand apps can make consumers learn about the brands..."

Summary themes

- large number of internet and smartphone users
- cheaper mobile data and smartphones
- many online gamers after Covid

Summary themes

- rise in consumers revisit numbers
- interesting advertisements
- innovative way of sharing brand related information

Green Hat, Creativity

- "... brand need data for consumers to better the brands. With gamification the data can be collected easily and in a creative manner plus it can be of unique type also like how different emotions while playing the games affect consumers."
- "... you see with games come competition, and if brand gamification can be used for competition among company's employees then that will be a creative use of gamification."
- "we have seen people blocking ads on internet or mobiles, but on a gamified brand app that won't happen provided the story is interesting for them."

Summary themes

- unique and new kind of data about consumers can be collected
- can be used to create feeling of competition among employees
- can prevent ad-blocking problems

Red Hat, Emotions

- "....I myself play mobile games. With winning the games come some medals and badges. They make me feel proud. What if brand gamification can make use of this feeling of
- "...the game like features can make the simple brand advertisement more dramatic and visual, and I believe that can make the advertisement more interesting for consumers." "... I guess the simple plus of brand gamification is making the buyers know a lot about a brand and its products. You see if you teach small kids the a to z with some mobile apps having better graphics and design they learn easily. Same is with consumers, where the game like brand apps can make consumers learn about the brands..."

Summary themes

- feeling of pride with brands can make consumers share and talk feedback easier
- innovative way of sharing brand related information

Green Hat, Creativity

- "... brand need data for consumers to better the brands. With gamification the data can be collected easily and in a creative manner plus it can be of unique type also like how different emotions while playing the games affect consumers."
- "... you see with games come competition, and if brand gamification can be used for competition among company's employees then that will be a creative use of gamification."
- "we have seen people blocking ads on internet or mobiles, but on a gamified brand app that won't happen provided the story is interesting for them."

Summary themes

- unique and new kind of data about consumers can be collected
- can be used to create feeling of competition among employees
- can prevent ad-blocking problems

Red Hat, Emotions

"....I myself play mobile games. With winning the games come some medals and badges. They make me feel proud. What if brand gamification can make use of this feeling of

pride of consumers for their brands.... That can be something new don't you agree?" "... modern day people are able to use and talk easily with some apps. If brands create game like app features for brands and use that to talk to consumers then the consumers would also be more ready to talk..."

"... I have read in a magazine report that gamification is 75% use of psychology with 25% use of technology, so brands can use various psychological features in designing games with technology to make consumers feel good...."

Summary themes

- feeling of pride with brands can make consumers share and talk feedback easier
- good way to attract consumer's psychology

Black Hat, Pessimism

"In India some consumers may not like this idea or may not understand or may not use the idea totally, especially the older ones. They fear new things according to me" "for any new concept the brand needs to be clear in objectives. If they are unclear then wrong design, wrong planning, wrong training all is waste of money... and that is huge..." "many companies don't have skill and quality to design games and apps. That is a minus"

"doing new things, new ideas is expensive, so money management may be an issue as per me.."

Summary themes

- old consumers may not like or support
- may be a failure without planning for everything
- lack of skill set
- costly affair

Blue Hat, Planning or Organization " For gamification the brand systems, activities and plans need to be on same lines as of the game-design features, dynamics and mechanics. That is main requirement."	Summary themes - develop designing and game making skills - create ideas from crowds - get funds from big investors
"Gaming would need learning, crowdsourcing of ideas, great design and visual skills." " it would help if any firm can get funds from big investors or other sources to manage things"	

Source: Author

Findings

The findings of this paper are very crucial for brands involved and interested in the business of gamification. The findings as seen in 6 themes of qualitive study on the basis of the 6 thinking hats lines are as follows:

- White Hat, Facts and Figures- The white hat meant to factual information and figures about the brand gamification make the focus group member think from objective angle. As stated in Table 1 there are some factual points about this concept. India is a country with not only large number of smartphone and internet users, resulting in mobile and app culture, but also the internet costs and smartphone prices are very cheaper here as compared to elsewhere. Also, the Covid has increased the online game players or users.
- Yellow Hat, Positivity- The yellow hat meant to share good and positive things about the brand gamification make the focus group member think from positivity angle. As stated in Table 1 there are some good points of this concept. With brand gamification consumers can win vouchers, scratch cards, coupons thus the sales of the brands can easily rise. Also the advertisements done in brand gamification manner can impact the consumers more visually and in an interesting manner. It can also in a new way and interesting manner provide brand information to people via game like features, storytelling games.
- Green Hat, Creativity- The green hat meant to share newness and creative things about the brand gamification make the focus group member think from creative angle. As stated in Table 1 there are some creative points of this concept. Brands need data of consumers and with gamification new and

- interesting kind of data can be collected from the apps about what game features effect consumers and the reactions also. Also consumers block ads on digital platforms easily. But an app with interesting gamified features can solve this problem and the consumers can also enjoy the ads that are more interesting. Not only this concept can help the consumers, but if companies use this concept to create a game or competition among employees then employee productivity can also rise.
- Red Hat, Emotions- The red hat meant to share feelings and emotions related to the brand gamification make the focus group member think from emotional angle. As stated in Table 1 there are some feelings points of this concept. The digital trophies or digital awards that users win while playing on the gamified apps brings feeling of self pride and also pride for the brand. Also, the victory can result in bragging rights that results in creating good motivation. The modern time is mobile culture and app culture, where apps make it easy for the consumers to talk to brands and give feedback. In games some features may make the consumers happy, or some may make them sad, some thrilled. These psychology emotions can be known by the brands via gamification and use in future to make further plans, ads or brand features.
- Black Hat, Pessimism- The black hat meant to share warnings or pessimistic things related to the brand gamification make the focus group member think from pessimistic angle. As stated in Table 1 there are some negative points of this concept. This is a new concept, so old consumers may not understand or like this well. Also, many companies do not have game making skills or mechanics with them and doing anything new costs huge money.

Plus, if the planning or strategy fir this idea goes wrong then the whole effort may fail totally.

• Blue Hat, Planning or Organization- The blue hat meant to share how to planning or organize the strategy related to the brand gamification make the focus group member think from organizational angle. As stated in Table 1 there are some points related to planning for this concept. For getting

this idea into reality the companies must work to develop their game designing and making skills. For ideas to make brands gamified the companies can get ideas from people itself. And since this concept needs huge money, so big investors can be reached to get those funds.

Summary of the findings are presented in a diagram view given as in figure 2.

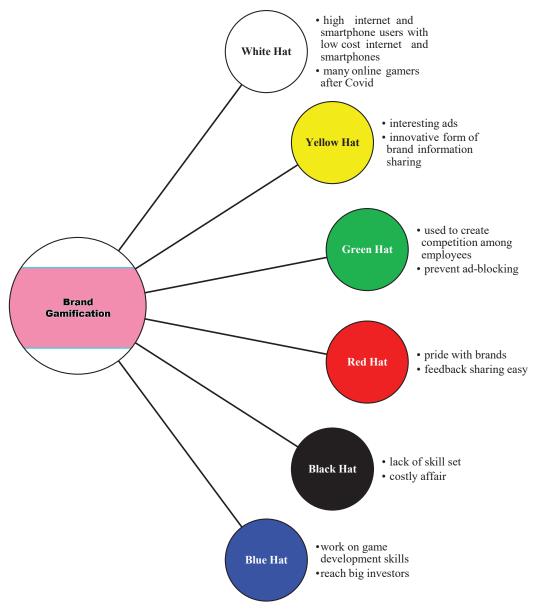


Figure 2: 6 Thinking Hats Overview for Brand Gamification

Source: Author

Discussion and conclusions

This paper has focussed on an emerging area of research called brand gamification concept, its examples, features and has looked at this trendy idea from all main angles from which any business will look at it. Brand gamification is now popular because of the mobile and app culture growing which has made the use of apps to promote a brand very easy and also interesting. This makes it possible for companies to easily promote their brands with the process of brand gamification, using game-like features in brand apps to attract consumers.

The sub-elements of gamification that make it trendier are fun, competition, storytelling, rewards etc. The study found that the subfactors of gamification Both competition feeling and storytelling feature have great impact on users along with fun and rewards. It is because the people always like the fun and competition feature of games which make the games also more interesting. And it is that users enjoy the brand stories as they are told in between the games, that many people block in other apps. But with brand gamification, brands use their own brand apps and tell them stories about them in that in a game like way. This makes the story reach to the consumers in a fun way.

Also, when consumers win the games and win rewards like brand coupons or discount vouchers that is more likely to increase the sales of brands. Not only for consumers, but this concept can be used for the internal employees also for training them, testing them or motivation them. This can be a new and time saving way of motivating or encouraging the employees also. With changing times brands also need to change and learn. This paper's findings provide interesting and important information to brand marketers, game designers, and importantly companies using apps to reach consumers in this era of app culture.

The 6 thinking hats technique used in the study provides the companies with all the angles good, bad, creative, facts, feelings and planning needs for this concept to be used by them. While the scope is large for this idea as seen by white hat, also there are many good points like rise in sales and get feedback seen by yellow hat. The red and green hats show the feelings that can be used in creative ways and also the use of this concept for employee development training. While the

black hat has pointed out the cost and skill lacking by the companies, the blue hat tells if the companies plan and coordinate resources and learn for new skills then the limitations can be reduced.

Future Scope and Limitations

Brand gamification can make use of latest technologies in a fun way and make some boring things fun for consumers. Brand gamification can not only make things entertaining for consumers but also satisfies them in a fun manner. Companies can also use this concept to talk to their consumers, how about them, over the older means of promotion. It can also help to improve the brand features. This paper hopes to be a great guide for future research on brand gamification in business field. Also, more studies to explore this filed from quantitative or empirical angle can be done which are the limitations of this paper. This paper has not studied the gender or age differences which is also a limitation of the paper.

References

Aithal, P. S., & Kumar, P. M. (2017a). Ideal analysis for decision making in critical situations through six thinking hats method. *International Journal of Applied Engineering and Management Letters (IJAEML)*, 1(2), 1-9.

Aithal, P. S., & Kumar, P. M. (2017b). Lateral thinking in managerial decision making through six thinking hats technique. *International Journal of Scientific Research and Modern Education (IJSRME)*, 2(1), 53-58.

Aithal, P. S., & Kumar, P. M. (2017c). Integrating theory a and six thinking hats technique for improved organizational performance. *International Journal of Applied Engineering and Management Letters* (*IJAEML*), 1(2), 66-77.

Benyon, D., Smyth, M., O'Neill, S., McCall, R., & Carroll, F. (2006). The place probe: Exploring a sense of place in real and virtual environments. Presence, 15(6), 668–687.

Bittner, J.V., & Shipper, J. (2014). Motivational effects and age differences of gamification in product advertising. *Journal of Consumer Marketing*, 31(5), 391-400.

- Blohm, I., & Leimeister, J. M. (2013). Gamification. Business & information systems engineering, 5(4), 275-278.
- Bryman, A. (2016). *Social research methods*. Oxford university press.
- Bunchball, I. (2010). Gamification 101: An introduction to the use of game dynamics to influence behavior. *White paper*, *9*, 1-18.
- Burke, B. (January 21, 2013). The Gamification of Business. *Forbes*. Retrieved July 28, 2021 from https://www.forbes.com/sites/gartnergroup/2013/01/21/the-gamification-of business/?sh=3cd1b85d4dc2
- Conaway, R., & Garay, M. C. (2014). Gamification and service marketing. *SpringerPlus*, *3*(1), 1-11.
- De Bono, E. (2017). Six thinking hats. Penguin.
- Deterding, S. (2015). The lens of intrinsic skill atoms: A method for gameful design. *Human– Computer Interaction*, 30(3-4), 294-335.
- Di, L. M. (2010). New method to measure end-to-end delay of virtual reality. Presence: Teleoperators and Virtual Environments, 19, 585–600.
- Dodds, T. J., Mohler, B. J., & Bülthoff, H. H. (2011). Talk to the virtual hands: Self-animated avatars improve communication in head-mounted display virtual environments. PLoS One, 6(10), e25759.
- Eppmann, R., Bekk, M., & Klein, K. (2018). Gameful experience in gamification: Construction and validation of a gameful experience scale [GAMEX]. *Journal of Interactive Marketing*, 43, 98-115.
- Fijnheer, J. D., van Oostendorp, H., & Veltkamp, R. C. (2016, October). Gamification in a prototype household energy game. In *Proceedings of the 10th European conference on games based learning* (pp. 192-201).
- Göçmen, Ö., & Coşkun, H. (2019). The effects of the six thinking hats and speed on creativity in brainstorming. *Thinking Skills and Creativity*, 31, 284-295.
- Hammedi, W., Leclerq, T., & Van Riel, A.C. R. (2017). The use of gamification mechanics to increase employee and user engagement in participative healthcare services: A study of two cases, *Journal of Service Management*, 28(4), 640-661.
- Harwood, T., & Garry, T. (2015). An investigation into gamification as a customer engagement experience environment. *Journal of Services Marketing*, 29(6/7), 533-546.

- Hofacker, C. F., De Ruyter, K., Lurie, N. H., Manchanda, P., & Donaldson, J. (2016). Gamification and mobile marketing effectiveness. *Journal of Interactive Marketing*, 34, 25-36.
- Högberg, J., Hamari, J., & Wästlund, E. (2019a). Gameful Experience Questionnaire (GAMEFULQUEST): an instrument for measuring the perceived gamefulness of system use. *User Modeling and User-Adapted Interaction*, 29(3), 619-660.
- Högberg, J., Ramberg, M. O., Gustafsson, A., & Wästlund, E. (2019b). Creating brand engagement through in-store gamified customer experiences. *Journal of Retailing and Consumer Services*, 50, 122-130.
- Huber, M. Z., & Hilty, L. M. (2015). Gamification and sustainable consumption: overcoming the limitations of persuasive technologies. In *ICT innovations for sustainability* (pp. 367-385). Springer, Cham.
- IEEE (2014). Everyone's a gamer IEEE experts predict gaming will be integrated into more than 85 percent of daily tasks by 2020. Retrieved July 28, 2021 from https://www.prnewswire.com/news-releases/everyones-a-gamer---ieee-experts-predict gaming-will-be-integrated-into-more-than-85-percent-of-daily-tasks-by-2020- 247100431.html
- Jang, S., Kitchen, P. J., & Kim, J. (2018). The effects of gamified customer benefits and characteristics on behavioral engagement and purchase: Evidence from mobile exercise application uses. *Journal of Business Research*, 92, 250-259.
- Jin, C. H. (2016). The effects of mental simulations, innovativeness on intention to adopt brand application. Computers Human Behavior, 54(1), 682–690.
- Koivisto, J., & Hamari, J. (2019). The rise of motivational information systems: A review of gamification research. *International Journal of Information Management*, 45, 191-210.
- Lee, J. Y., & Jin, C. H. (2019). The role of gamification in brand app experience: The moderating effects of the 4Rs of app marketing. *Cogent Psychology*, 6(1), 1576388.
- Lombard, M., & Ditton, T. (1997). At the heart of it all: The concept of presence. *Journal of computer-mediated communication*, 3(2), JCMC321.
- Maican, C., Lixandroiu, R., & Constantin, C. (2016). Interactivia. ro–A study of a gamification framework using zero-cost tools. *Computers in Human Behavior*, 61, 186-197.

- Malaby, T. M. (2007). Beyond play: A new approach to games. *Games and culture*, 2(2), 95-113.
- Marie, K., Shivam, M., Gijs, M. W., Reichert, N. Z., Salamon, J., Timothy, B., ... Rafael, B. (2018). STAR: Superhuman training in augmented reality. In Proceedings of superhuman sports design challenge (2018) (pp. 6). New York, NY: ACM.
- Mekler, E. D., Brühlmann, F., Tuch, A. N., & Opwis, K. (2017). Towards understanding the effects of individual gamification elements on intrinsic motivation and performance. *Computers in Human Behavior*, 71, 525-534.
- Morschheuser, B., Hassan, L., Werder, K., & Hamari, J. (2018). How to design gamification? A method for engineering gamified software. *Information and Software Technology*, 95, 219-237.
- Mulcahy, R.F., Russell-Bennett, R., Zainuddin, N., & Kuhn, K.-A. (2018). Designing gamified transformative and social marketing services: An investigation of serious m-games. *Journal of Service Theory and Practice*, 28(1), 26-51.
- Oprescu, F., Jones, C., & Katsikitis, M. (2014). I PLAY AT WORK—ten principles for transforming work processes through gamification. *Frontiers in psychology*, 5, 14.
- Parjanen, S., & Hyypiä, M. (2019). Innotin game supporting collective creativity in innovation activities. *Journal of Business Research*, 96, 26-34.
- da Rocha Seixas, L., Gomes, A. S., & de Melo Filho, I. J. (2016). Effectiveness of gamification in the engagement of students. *Computers in Human Behavior*, 58, 48-63.
- Seaborn, K., & Fels, D. I. (2015). Gamification in theory and action: A survey. *International Journal of human-computer studies*, 74, 14-31.

- Serrat, O. (2017) Wearing Six Thinking Hats. In: Knowledge Solutions. Springer, Singapore.
- Slater, M., Spanlang, B., Sanchez-Vives, M. V., & Blanke, O. (2010). First person experience of body transfer in virtual reality. PLoS One, 5, e10564.
- Takahashi, D. (April 14, 2011). By 2015, 50 percent of companies will embrace gamification, Gartner says. VentureBeat. Retrieved July 28, 2021 from https:// venturebeat.com/2011/04/14/by-2015-50-percent-ofcompanies-will-embrace gamification-gartner-says/
- Terlutter, R., & Capella, M. L. (2013). The gamification of advertising: analysis and research directions of in-game advertising, advergames, and advertising in social network games. *Journal of advertising*, 42(2-3), 95-112.
- Wünderlich, N. V., Gustafsson, A., Hamari, J., Parvinen, P., & Haff, A. (2020). The great game of business: Advancing knowledge on gamification in business contexts. Journal of Business Research, 106, 273-276.
- Yu, W., & Yu, I. (2007). An artificial reflex improves the perturbation-resistance of a human walking simulator. Medical Biological Engineering Computing, 45, 1095–1104.
- Zichermann, G. (2010). Fun is the future: Mastering gamification [YouTube Video]. *Google Tech Talk*. Retrieved July 28, 2021 from http://www.youtube.com/watch?v=6O1gNVeaE4g
- Zichermann, G., & Cunningham, C. (2011). Gamification by design: Implementing game mechanics in web and mobile apps. "O'Reilly: Canada.
- Zimmerling, E., Höllig, C. E., Sandner, P. G., & Welpe, I. M. (2019). Exploring the influence of common game elements on ideation output and motivation. Journal of Business Research, 94, 302-312.