Gamification types for business needs

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Paper from the EMAC Regional 2022 Conference, Kaunas, Lithuania, September 21-23, 2022

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Abstract: *The aim of the paper to carry on literature review research is to explore gamification types in for-profit organizations. Gamification offers positive impact on various factors such as motivation, knowledge, and enjoyment. Most of the collected studies claimed that gamification positively influenced the employees or customers in terms of their knowledge, attitude, or brand loyalty.* Nowadays the most active generation of consumers and most participants in the labor market is the millennial generation. When creating gamification activities, the types of players must be considered, because a different set of playing mechanics is relevant for different gamification player types.

1.Gamification types

To identify the types of gambling in business, authors reviewing the literature on this theory since it was developed more than a decade ago. Due to the fact that this field is relatively new most of the literature was selected from the last decade. Authors of the paper mainly searched the Web of Science and Scopus databases for targeted articles, using the keyword "gamification" and "serious gaming" and "disruptive". Authors reviewed the titles, summaries, and keywords of xxxx articles for further review and excluded those articles where the main discussion was not considered a disruptive innovation. In today's high competition for consumers and employees, companies need to look for an additional element of motivation to keep customers and employees engaged.

Recently, games have become an established form of entertainment, consumer culture, and are a common part of people's daily lives (Malaby, 2007). For generations born after 1980, digital computer games have been part of everyday activities and replaced them with other entertainment activities. In computer games, everyone found their interest for someone it was a competition with others, for someone it was a to achieve high scores and so various elements of playing motivation were triggered in computer games. "Gamification" is a term originated in the digital media industry. This term is connected with the technological advances felt in the 1980s and the 1990s, which originated a new generation. The so-called Y generation portrays those who are technology fans (Rodrigues et al., 2021). The first documented use dates back to 2008, but the term did not see widespread adoption before the second half of 2010. Parallel terms continue being used and new ones are still being introduced, such as "productivity games", "surveillance entertainment", "funware", "playful design", "behavioral games", "game layer" or "applied gaming". Yet "gamification" has arguably managed to institutionalize itself as the common household term (Determing et al., 2011). Mapping research regarding the general impact of gamification and whether it was positive, neutral, mixed or not applicable show that 73,1% articles rate gamification with positive impact and only 9,7% with negative impact (László, Krishna and Katalin, 2020).

According to this conceptualization, gamification can be seen to have three main parts: 1) the implemented motivational affordances, 2) the resulting psychological outcomes, and 3) the further behavioral outcomes (Hamari, Koivisto and Sarsa, 2014), see in Figure 1.

Figure 1. Conceptualization of gamification (Hamari, Koivisto and Sarsa, 2014)

This paper argued that current "gamified" applications present emerging phenomena that warrant new concepts and research. Specifically, it suggested that insight into "gamefulness" as a complement to "playfulness" – in terms of design goals as well as user behaviors and experiences – marks a valuable and lasting contribution of studying "gamified" systems. Partly in reaction to this, the term "gameful design" – design for gameful experiences – was also introduced as a potential alternative to "gamification" (Determing, Dixon, Khaled and Nacke, 2011). Technological advances have offered ample opportunities for playful and positive experiences to be included in the use of more traditional systems, even though such systems are not designed for that purpose Some researchers have also argued that contemporary people and so-called "digital natives" may be more susceptible to the gameful experience even in "non-game contexts," which would be a consequence of learning motivational orientations and ways of engaging in activities through playing games that have seeped into everyday life (Högberg, Hamari and Wästlund, 2019). Moreover, in many instances, gamification has been

employed to encourage people to make "good" decisions, which relates the phenomenon to a concept of "choice architecture" defined in behavioral economics. This concept, which entails an optimistic view to behavioral biases, is a form of soft paternalism that "tries to influence choices in a way that will make choosers better off, as judged by themselves". (Hamari & Koivisto, 2015).

Based on the results of the Delphi study was identify four layers of gamification in which research is most urgently needed first, was for a deeper understanding of users' responses to game-design elements, such as leaderboards and rewards, that impact users' engagement with the game ("in-game level outcomes"), second, explored the impacts of gamification to an intra-organizational context, in particular by looking at gamification's impact on employee attitudes and behaviors, such as motivation, job satisfaction, productivity, and job turnover ("intra-organizational level outcomes"), third, was need more knowledge on the impact of gamification on customer attitudes and behaviors ("customer level outcomes"). Four was research on the transformative impact of gamification on users, for example, in customers' long-term energy consumption or changes in health-related behavior ("transformative level outcomes") (Wünderlich et al., 2020) see in Figure 2.
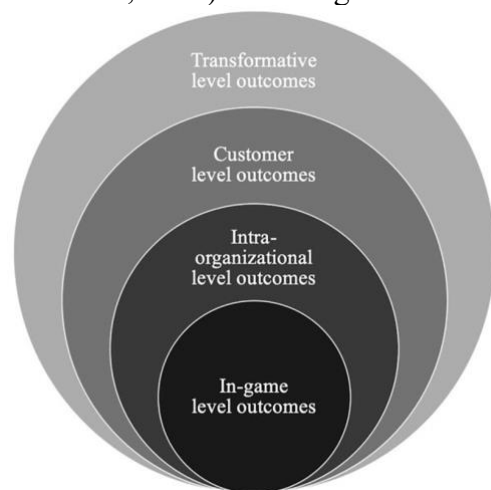

Figure 2. Impact of gamification. (Wünderlich et al., 2020)

One established way to define games is to describe them as having a few necessary features or conditions. In an attempt to make a synthesis of definitions, as Juul (2003) reported six such conditions: (1) games are based on rules; (2) they have variable outcomes that are quantifiable; (3) different outcomes in a game are assigned different values, both positive and negative; (4) effort must be invested to affect the outcome; (5) the outcome is important to the player; and (6) optionally, games can have real-life consequences (Högberg, Hamari and Wästlund, 2019). If the gamification is perceived as easy to use, it may promote senses of efficiency as well as experiences of an obstacle-free use of the system. These in turn may generate more a positive attitude and an increased willingness to continue using the service. Ease of use has especially been proliferated in technology acceptance literature as one of the main antecedents for technology adoption. It refers to the individual's perception of the required effort to use a system (Hamari & Koivisto, 2015).

To better understand the users' responses to the game design elements in the four layers of gaming and their impact on users, it is necessary to consider the stages of each layer of the company gamification impact and analyze the results. The same users in different layers of a company's gamification experience may have different motivations and different influences on gaming design elements. See Figure 3.
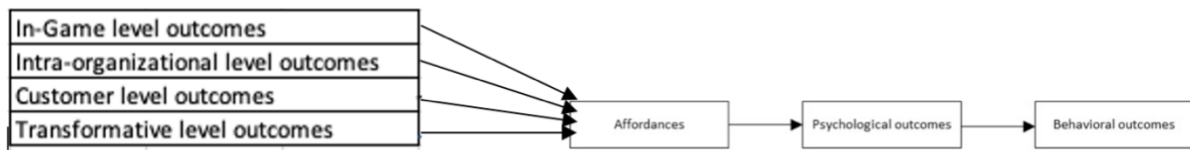
Figure 3. Impact of gamification outcomes

1.1. Meaningful gamification

As Nicholson (2015) described meaningful gamification is the use of gameful and playful layers to help a user find personal connections that motivate engagement with a specific context for long-term change. While reward-based gamification can be useful for short-term goals and situations where the participants have no personal connections or intrinsic motivation to engage in a context, rewards can reduce intrinsic motivation and the long-term desire to engage with the real-world context. If the goal is long-term change, then rewards should be avoided, and other game-based elements used to create a system based on concepts of meaningful gamification. Nowadays, personalization is very important, so it is needed to understand the player types of gamification to make Meaningful gamification.

User types and the game design elements suggested by Marczewski (source) to address the motivations of each type. Philanthropists are motivated by purpose. They are altruistic and willing to give without expecting a reward. Suggested design elements: collection and trading, gifting, knowledge sharing, and administrative roles. Socialisers are motivated by relatedness. They want to interact with others and create social connections. Suggested design elements: guilds or teams, social networks, social comparison, social competition, and social discovery. Free Spirits are motivated by autonomy, meaning freedom to express themselves and act without external control. They like to create and explore within a system. Suggested design elements: exploratory tasks, nonlinear gameplay, Easter eggs, unlockable content, creativity tools, and customization. Achievers are motivated by competence. They seek to progress within a system by completing tasks or prove themselves by tackling difficult challenges. Suggested design elements: challenges, certificates, learning new skills, quests, levels or progression, and epic challenges (or "boss battles"). Players are motivated by extrinsic rewards. They will do whatever to earn a reward within a system, independently of the type of the activity. Suggested design elements: points, rewards or prizes, leaderboards, badges or achievements, virtual economy, and lotteries or games of chance. Disruptors are motivated by the triggering of change. They tend to disrupt the system either directly or through others to force negative or positive changes. They like to test the system's boundaries and try to push further. This type is derived from SDT, but from empirical observation of this behavior within online systems. Although disruption can sometimes be negative (e.g., cheaters or griefers), this is not always the case because disruptors can also work to improve the system (Gustavo et al., 2016). Successful gamification is not simply applying game elements or game mechanics but is rather a more holistic approach to game thinking. Bartle developed a classification of player types for video games (Achievers, Explorers, Socializers, and Killers) that is based on a character theory of player styles. This classification gives rise to the notion that different people may enjoy different types. Then, Kim enhanced Bartle's player types and adjusted the styles with social actions (Compete, Express, Collaborate, Explore) (Bovermann & Bastiaens, 2020).

Gamification offers a positive impact on various factors such as motivation, knowledge, and enjoyment. Most of the collected studies claimed that gamification positively influenced the employees or customers in terms of their knowledge, attitude, or brand loyalty. This means

that gamification is a proven tool that can improve the operations of business organizations. Gamification can have a positive impact on business processes in different ways. Managers may consider applying gamification either to increase employee performance or motivation or they can use gamification to attract more engaged customers and increase their brand loyalty (László, Krishna and Katalin, 2020). Studies showed that game elements improve the subjective experience of the task. In both studies, participants in the gamified condition experienced more positive affect, less motivational conflict and the task was experienced as less effortful. Positive affect served as a mediator for the effect of gamification on task disengagement, suggesting that lack of positive affect motivates people to disengage from a cognitive task. Further, despite the absence of a direct effect of gamification on task accuracy, we found evidence for an indirect effect via subjective effort in both studies (Bernecker & Ninaus, 2021). Mapping research regarding gamification elements show most popular elements in articles are about rewards, badges and points (László, Krishna and Katalin, 2020).

Gamification can increase employee engagement, and thus will lead to revenue growth. It is estimated that a 3-point increase in employee engagement levels can cause a 5% increase in revenue in the following year. Thus, employee engagement assumes great significance for any organization seeking to enhance growth (Bhattacharya & Gandhi, 2020).

Gamification impacts the motivation of consumers and employees. When appropriately used according to the type of players, this will increase engagement in the company's brand. Research shows that employee involvement also increases the company's income, but for this to happen, personalized motivational play programs need to be developed according to the types. The company will not be able to achieve high results using only the most popular gaming design elements, because different types of players have different motivations in gaming activities.

1.2 Gamification's impact on generations

Digital literacy lays the foundations of key skills in order to stand up to the test of supporting employability in the 21st Century. Generation Z is at an advantage when they are considered in comparison to the predominant social setting of previous decades. Contemporary young people were born in technological times, and therefore their way of communicating is highly socialized. In this way, their use of digital devices is increasing, and they benefit from 'speaking' an innate digital language. This acts as a point in their favor when it comes to accessing the job market (Pérez, Garnica, and Moreno, 2021). Generations exposed to and experiencing similar social, technological and historical events, tend to demonstrate commonalities of behaviours and ideologies). Following Generation X are the demographic cohort of millennials or Generation Y. The "no future" Generation X has given way to the "has no clue where we are going" Generation Y. Howe and Strauss are often credited with coining the word "Millennials." However, there is considerable confusion on the exact year span which encompass the millennial generation (see Table 1).

Generation	Period	Other Names	Typical Characteristics/ Behavioural Patterns
Traditionalists	1945 & before	Veterans, Silent, Radio Boomers, The Forgotten Generation	Conformers, dedication, sacrifice, duty before pleasure, discipline, patience, loyalty
Baby Boomers	1946 to 1964	Moral Authority, "Me" Generation	Anti-government, equal opportunities and rights, personal gratification
Gen X	1965 to 1981	The Doers, Post Boomers	Balance, diversity, entrepreneurial, fun, highly educated
Millennials	**1982 to 2000**	**Gen Y, Gen Next, Echo Boomers. Digital Natives, Net Generation**	**Self-confident, sociability, diversity, extreme fun, extremely techno savvy, instant gratification**
Centennials	2001 onwards	iGen, Gen Z, Gen Zee	Vigilant outlook, tempered expectations, less self-absorbed, more self-assured

Source: Dutta & Jain (2016).

Table 1. Generation Classification and Typical Behaviors Associated with the Generations, (Jain & Dutta, 2018)

Millennial generation is the newest entry to the workforce and the most demanding as consumers. Job switching is very high in this generation, particularly in the IT sector. Our study indicates that this generation cannot be engaged with just an enabling infrastructure (e.g. sports facilities); they desire a supporting work environment—in terms of supervisory support, coaching/mentoring, yoga sessions, meditation and emotional well-being—that encourages participation in such activities, and inclusion of these activities in the appraisal process. A meaningful relationship with the boss, peers and other stakeholders is highly desirable (Bhattacharya & Gandhi, 2020). Research shows that along with the finding from generation X model, can be analyzed those users continue to use the gamification if they can see perceived usefulness in the system. Different from Millennials that consider still use the gamified system even though they only perceive social influence and playfulness (Sukmaningsih, et.al. , 2020). Researchers believe that the integration of gamified features makes onboarding solutions more effective and more user-oriented, especially for employees of the generations Y and Z. Important information can be learned in a playful way and contact with advisors and future team members is facilitated (Heimburger et.al, 2020).

Gamification in Millennials has positive and significant indirect effects on behavioral intention through the flow state. In the case of the Generation X, it has been detected that flow interferes in its perception of ease of use. The behavioral intention of using the Web page is directly correlated with the purchase intention. Companies should offer a fun interface to Millennials and an environment easier to use to the Generation X, for gamification to be successful (Jurado et.al, 2019) and millennials are likely to constitute nearly 75 percent of the workforce by 2025 (Culiberg & Mihelic, 2016). This means that gamification is a proven tool that can improve the operations of business organizations. Managers may consider applying gamification either to increase employee performance or motivation or they can use gamification to attract more engaged customers and increase their brand loyalty (Szendrői, L., Dhir, K. S. , and Czakó, K. ,2020)

Generations before the millennials were the ones who developed the elements and mechanics of games and gamification but were themselves less involved in gaming. The millennial generation is now the most active consumer and most majority in the job market and has already engaged with the company's brand's gamification, so they are more open to gamification activities. Generations born in the 21st century are more open to new technologies because they are daily in an environment full of digital technologies. Need to make a research un find a correlation between generations and the types of players, so companies can create a meaningful and personalized gamification mechanism and elements for engaging consumers and employees with a company brand.

1.3. Driving force of gamification.

The concepts of Gamification rest on different motivational theories: Maslow's pyramid, Intrinsic and extrinsic motivation, Goal-setting theory, Flow model, Self Determination Theory (SDT) (Ulmer et al., 2020). According to the theory of Achievement Motivation and Millennial Characteristics, need for power relates to the choices a millennial learner has in terms of what (subject or topic), when (time), where (place) and how (method/style) s/he wants to learn. The level of control and flexibility offered to them by the gamified learning platform to conveniently take up the course at an aptitude level relevant to them. Hence, the sequential unlocking of the course that will allow them to summarize their learning over a period of time (Jain & Dutta, 2018). Researchers found that the use of leaderboards has a detrimental effect on intrinsic motivation in learning, especially when the point system is not provided as a form of feedback. Hence, educational institutions need to be very careful in implementing gamification in order not to negatively affect the intrinsic motivation of the learners. Researchers also found that intrinsic motivation tends to be highest when both the leaderboard and point system are not provided. Researchers believe that when both the leaderboard and the point system are not available, learners tend to adopt the mastery goal over the performance goal due to the lack of feedback on their overall performance. With a mastery goal in mind, students' intrinsic motivation is heightened. When a leaderboard is provided without a point system, learners may feel controlled or pressured to become a top performer, which decreases their intrinsic motivation (Chan et.al, 2018).

As personal data is collected during manufacturing processes, data access must be regulated, and the privacy of the users must be maintained. Moreover, the users of the gamified workplaces must be informed about the data acquisition and usage. The participation in the Gamification system should be voluntary. Furthermore, the mapping between physical activities to virtual performance indicators should be carried out in a transparent manner (Ulmer et al., 2020). A learning process based on learning loops can be initiated and is particularly conducive to efficient knowledge transfer. In addition to factors such as motivation and enjoyment, participants achieve a positive learning effect as long as challenge and skill are balanced. Since the concept of the game scenario emphasized a high degree of social interaction between the players, the choice fell on a classic serious game form with an orientation to the concepts of simulation and business games. The serious game concept can be adapted and extended to the needs of an advanced training seminar due to its modularity and extensibility of its content. Taken together, serious games have a high potential to support vocational training in learning factories as additional teaching instruments and, thus, increase both fun and efficiency in learning (Teichmann et.al, 2020).

Researchers (Werbach & Hunter, 2012) described Game mechanics as can see in Figure 1 and the case analysis above were combined with experience in Serious Games and awareness of developing trends to refine a classification framework of how Serious Games can be used in companies.

Mechanic		Definition
Challenges	→	Puzzles and other activities implying a certain level of effort to resolve
Opportunity	→	Elements of Randomness
Competition	→	One player or group wins, and another loses
Cooperation	→	Players must work together to achieve a shared goal
Feedback	→	Get information about player progress
Acquisition of resources	→	Obtaining collectible or useful items
Rewards	→	Benefits of some action or realization
Transactions	→	Exchanges between players, directly or through intermediaries
Shifts	→	Sequential participation, alternating players
Win states	→	Goals that make a player or group the winner

Figure 4. Game mechanics (Werbach & Hunter, 2012)

The researchers conclude that the scientific literature has looked at the elements of play, mechanics, and the types of players, but the effects of these elements of gamification on different generations have not been sufficiently studied. More in-depth research is needed on the impact of gaming elements on player types of different generations.

1.4. Discussion.

When companies analyze gamification levels, they need to consider the differences between generations. Nowadays the most active generation of consumers and most participants in the labor market is the millennial generation. When creating gamification activities, the types of players must be considered, because a different set of playing mechanics is relevant for different player types and choosing only the most popular gamification mechanics company will not achieve the maximum engagement of participants.
In order to create a more complete gamification activity that would motivate most participants, it is necessary to personalize the gamification activity according to generations, types of players and different company impact levels of involvement. However, the field of research is very wide, and this paper presents just an insight in the large scope of questions what should be analyzed in the future researches.

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