

Gamification in training and development processes: perception on effectiveness and results

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Simeia Azevedo Santos

*Faculdade de Economia e Administração,
Pontifícia Universidade Católica de São Paulo, São Paulo, Brazil*

Leonardo Nelmi Trevisan

PPGA, Pontifícia Universidade Católica de São Paulo, São Paulo, Brazil

Elza Fátima Rosa Veloso

*Mestrado Profissional em Gestão de Negócios,
Faculdade FIA de Administração e Negócios, São Paulo, Brazil, and*

Marcelo Antonio Treff

Pontifícia Universidade Católica de São Paulo, São Paulo, Brazil

Abstract

Purpose – Gamification is the use of game elements in different contexts. It is also a tool with potential application in several areas, including training and development. From this reference, this study has a main objective to identify a perception of efficiency and the measurable results in the process of gamification in training and development actions.

Design/methodology/approach – The quantitative stage of the research sought to investigate the perception of efficiency of professionals who have already undergone gamified training, collected through an online form with responses on a Likert scale and treated with the Minitab Statistical Software. The qualitative stage, on the other hand, identifies the perception of results through classification with professionals who develop gamified training, with the results found in the content analysis techniques.

Findings – The compiled results confirmed the presence of engagement and its influence on motivation as one of the advantage points for the application of gamification. It was also possible to find in these results the relevance of design care for the game/training interaction to work effectively.

Originality/value – Among the trends of greatest incidence found in the research, are the possibility of associating gamification with virtual reality and augmented reality, as well as with simulators to enhance the experience lived by the player during training.

Keywords Gamification, Training, Development, Engagement

Paper type Research paper

1. Introduction

The past two decades have witnessed an unfolding of major human resource activities, making the function's responsibilities evolve to a more strategic level. The first evolution has progressively added the areas of labour and union relations, recruitment and selection, remuneration and benefits, performance, quality of life, training and development into human

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resource management procedures. More recently, this evolution has also involved computerisation and use of algorithms for management of these human resource sub-systems, as addressed by [Posthumus, Santora and Bozer \(2017\)](#).

The area of training and development is one of these sub-systems, which is aimed at improving personal competencies in the labour context. Training is an educational process which helps express the individual's potentialities by providing information so that he or she can learn new knowledge and skills for professional application. This is also a process of short-term assimilation aimed at recycling knowledge, skills and attitudes directly related to tasks performed in the work settings ([Marras, 2016](#)).

According to [Dutra \(2016\)](#), the learning process goes through several steps whose actions of different nature interact to each other synergistically, allowing the individual to achieve his or her purposes of personal development and contribution to the organisation. The search for necessities and the selection of method are one of the pillars for the application of the training process in which there should be adhesion and context so that progress and points of improvement can be verified at the end of the training ([Noe, Hollenbeck & Gerhart, 2005](#)).

With the emergence of new responsibilities in the management of human resources, new trends have gained prominence in the business in general. [Meeker \(2018\)](#) conducted a report on the trends enabled by the wide use of Internet, including speed in adopting disruptive technologies, availability of Internet access and cloud network, and on how these new technologies are changing the way of communication and learning and the labour world in general.

According to [Meeker \(2018\)](#), the service provided by Sony PlayStation allowing access to games increased significantly in 2017, being ranked fourth in the list of on-line services and only behind Netflix, Amazon and Spotify, the most popular champions of entertainment. There are also new tools available in the context of increasing access to new technologies, such as the increasing use of personnel management platforms based on gamification for collaboration and share of information.

The use of games in training and development is a theme which has been addressed in the literature since the 1990s ([Gramigna, 1994](#); [Falcão, 2008](#)), in which ludic learning was considered a major force in on-site games (e.g. board games and off-line games), if compared to the approaches in the 2000s and onwards.

With the availability of technologies and their increasingly low cost and popularisation, the possibilities of training based on gamification elements also began to be spread and listed among prominent trends for the next years, as presented in the [Great Place to Work report \(2018\)](#).

Notably, the digital serious games market has gained an increased projection in Brazil over the past years, a fact supported by the publication of the Second Census of the Brazilian Digital Games Industry in 2018 under sponsor of the Ministry of Culture. Serious games are defined as those simulating high-risk situations, such a medical training in emergency situations and experience in risky situations (e.g. military training). Among the companies participating in the census, 16.3% cited the development of games for corporate training ([Sakuda & Fortim, 2018](#)).

According to [Poyatos Neto \(2015\)](#) and [Mattar \(2018\)](#), the term "gamify" was originated in the 1980s, although the words "gamify" and "gamification" only first appeared in 2008. However, it was only in the mid-2010 that the term was consolidated as a technical jargon, and since then has been widely adopted.

The classical widely cited definition by [Deterding, Sicart, Nacke, O'Hara & Dixon \(2011\)](#) addresses the gamification as being the use of game design elements in non-game contexts. Gamification consists of using aesthetic and reasoning mechanisms of the games out of the usual context and in association with entertainment in order to solve practical problems, awaken engagement and promote knowledge.

Game elements can be referred as well-designed rules, score, challenges, collaboration, puzzles, role-playing, among other factors related to the mechanics of motivation, interaction and reward (McGonigal, 2011; Marczewski, 2017). Activities from different sectors can be gamified, such as child and adult education, administration and marketing. In the latter case, for instance, gamification of tourism marketing might involve branding or selling to help the relationship with brands (e.g. point programs for airline tickets), sciences and several other activities and sectors. In this sense, other examples are presented by Mattar (2018), who also cite cases reported by Meister (2012) and Vianna (2013) in which gamification is applied to corporate and business areas.

From the contextualisation of the relationship between training, development and gamification trends, the main objective of the present study is to identify the perception on effectiveness and results measurable in the process of gamification so that training and development can be significantly enhanced.

2. Theoretical reference

2.1 Training and development

As late as the 1980s, the authors who studied the human resources management divided it into three or four groups in which training and development is one of these, as exemplified by studies by Tichy, Fombrun & Devana (1982). Fidelis & Banov (2006) define training as a process of qualification and provision of professional skills to prepare the individual to perform specific tasks in the job. According to Marras (2016), training is a way to adjust knowledge, skills and attitudes regarding work or position held.

Swanson (2009) defines training and development as a process of developing and boosting proficiency in order to improve the performance of the organisation, working groups and each worker regarding the work processes, which also culminates in career development and leadership.

Training of individuals in the organisations, performed by the personnel management, is a process which can be elaborated by the company in order to facilitate the employees' learning of the functions or competencies related to their performance in the work (Noe *et al.*, 2005). These competencies include knowledge, skills and behaviours which are basic for a successful performance.

Training can be introductory, that is, aimed at providing initially required information to the new employees and allowing their integration to the organisation or can be performed throughout the employee's tenure in the company in order to recycle and update specific knowledge in his or her area of work. (Marras, 2016). The learning generated by the process of training can result from observation and joint experience, as well as from the interaction with other employees, in which the joint use of all these approaches is common.

With regard to learning in training, it is also important to cite the assumptions of Andragogy introduced by Knowles (1980), namely: *autonomy*, in which adults feel capable of making own decisions; *experience*, which provides the basis for learning new concepts and skills; *readiness to learn*, which is related to the fact that adults are more interested in learning what is related to real situations in their life; *application of learning*, which is aimed at practicality, i.e. where learning is focused on problems rather than on knowledge; and *motivation to learn*, which is related to personal values and goals.

To assess the success of a training module, one can use increase in productivity, improvement in the result quality, reduction in the cost related to time and re-work, optimisation of efficacy, perception of change in attitudes and behaviours, increase in knowledge and awareness, as shown by Marras (2016). Improvement of corporate environment and increase in personal motivation are also considered.

In studies on this theme, situations in which training and development were not effective in the context of organisational culture were also explored and have citations. For instance, [Argyris \(1986\)](#) addresses the problems regarding training and development as being actions, termed by the author as “defensive loop”, which appear at the levels of leadership and even reach the purpose of developing new skills, but whose knowledge is simply not applied to the situations as expected in practice, thus ironically resulting in loop ([Argyris, 1986](#)).

The concern is on correctly performing the application of the training modules on a quality basis. According to [Marras \(2016\)](#), the factors influencing the quality of a training program are the following: teaching experience of the instructors and technical qualification of the training promoters; module’s rationale, which must show learning process and its application to the everyday work; quality of the resources used, such as exhibition activities, lectures and symposiums by using presentations, films and audios; interactive activities involving case studies, simulations and symposiums on Internet, computer or smartphone; and use of activities with game elements carrying the experience in the context addressed.

The new technologies are changing more quickly than ever before in the history the way people live, including how they relate to each other and how they work, which consequently also affects significantly the way how organisations operate and interact internally and externally with the society ([Folan & Browne, 2005](#); [Malone, 2006](#); [Cardador, Northcraft & Whicher, 2016](#); [Schwab, 2016](#); [OIT, 2018](#)).

In this context, gamification using computer elements becomes a resource which can be explored in activities of training and development.

2.2 Gamification

The term “gamify” was originated in the 1980s, when Richard Bartle, a professor of the University of Essex, used the word to name the act of “making something which is not a game into a game”.

[Werbach & Hunter \(2012\)](#) and [Marczewski \(2017\)](#) support that the application of game elements in other contexts can be termed gamification, which is the use of mechanisms, principles and rules of the game in several contexts. For [Zichermann and Linder \(2013\)](#), gamification can be defined as the inclusion of mechanics, style, reasoning or design techniques of games in order to involve people in the solution of problems. Game elements refer to well-defined rules, score, challenges or collaboration, puzzles, role-playing, among other factors related to the mechanics of motivation, interaction and reward ([McGonigal, 2011](#); [Marczewski, 2017](#)). The use of gamification is not synonymous with use of games, but with use of elements and mechanics present in games.

2.3 Characteristics of gamification

From the studies on games, conducted by [Huizinga \(2000\)](#) in the 1930s, it is possible to list eight major characteristics common to all activities considered or rated as games, namely: voluntary participation; game for distraction; game beyond reality; time and space limitation for a defined goal; clear rules; feedback system; and end-of-game situation.

Gamification is a methodology based on game dynamics and whose objective is to use tools based on game elements, such as involvement, engagement, rewards and awards, and feedback. For instance, feedback is used to encourage the participant or player to reach the goal, which results in a sense of achievement and consequently in the progression towards the final objective ([Marczewski, 2017](#)).

According to [Penenberg \(2015\)](#), corporate gamification improves the performance precisely because of factors such as the use of rewards, which reinforces positive aspects and helps engagement.

The proposal of gamification for training process consists of providing a ludic, natural and dynamic learning aimed at boosting skills to solve problems and of encouraging the participant to proceed to achieve the upcoming goals, always supported by dynamically provided feedback, in addition to increasing content retention by means of interaction and experience (McGonigal, 2011; Cherry, 2012; Chou, 2015).

One proposal of activities with gamified tools is characterised by well-defined and clear objectives leading progressively to small achievements, which is supported by continuous feedback. The user should always participate voluntarily and have prior knowledge on the rules of the activity, in which the challenges are presented to the player so that he or she can reach the final objective, like in a game (Deterding *et al.*, 2011).

As the gamified task provides continuous feedback and rewards small achievements in the performance of the player, who in turn can have a clear view of his or her progress as well as recognition with awards and scores, these elements bring to the gamified activities characteristics of engagement which are similar to those perceived in games (McGonigal, 2011). In both digital and material contexts, it is important that the game has a clear message, that is, its goals and final objective should be clearly understood by the participant.

Progress tracking based on the well-defined conclusion of the tasks is another point which should be made very clear (Chandler, 2012; Chou, 2015; McGonigal, 2016). This element is linked to the issue regarding the progress perceived by the player or by the individual who participates in the training, and also to the issue regarding the feedback given at the end of each small task, phase or group of tasks. The feedback process is also related to the rewards given according to the score range or award method used in the organisation. Moreover, the interface with the user should also be adequate for achieving the desired results, especially in digital settings (Chandler, 2012).

The unpredictability, which is stressfully perceived in real life, can have a ludic aspect and provide learning experiences in the game setting as it represents a safe environment, far from the real risks. According to Burke (2015) and Mullins and Sabherwal (2018), gamification involves people at an emotional level and it reveals itself to be powerful factor for engagement. Adding to this context is the intrinsic motivation resulting from the sense of autonomy, which progresses together with the domain of a given topic, such as the learning of a topic addressed in the training. For Suits (2005), game playing is a voluntary attempt to overcome obstacles.

According to McGonigal (2011), the presence of challenges demands the player to use his or her creativity and skills to achieve the objective, which makes the task rewarding when solved. The game gives feedback continuously on the performance of an activity so that the player has a clear notion of his or her progress and is recognised by the game. These characteristics, when coordinated and combined, bring engagement to the gamified activities similar to that perceived by gamers regarding the tasks proposed by the games

Werbach and Hunter (2012) define six phases or steps for a good gamification implementation, which is known as the six D's of gamification. These six steps are the following:

- (1) Defining business objectives to understand the target goal and make it clear. For the authors, the objectives can be defined by listing them in priority order and explain them;
- (2) Delineating desirable behaviours after the objectives were defined and reasons for gamification explained. It is necessary to delineate what should be expected from the users and their activities and behaviours in the system or game;

- (3) Describing the players to know the relationship the game will have with them. That is, whether they are employees or clients, what can motivate them to continue in the tasks, all items to be described in this step;
- (4) Devising cycles of activities to allow the players to remain interested in participating and overcoming the proposed challenges. Type of feedback to be given to the players or gamers should be considered, including how they can be engaged with the loop of activities based on the tripod of motivation, action and feedback;
- (5) Don't forget the fun, in which the users should participate in the game voluntarily and enjoy accordingly;
- (6) Deploying adequate tools to verify whether there are already defined or developed ones for implementing the gamification proposal, including possible tools to be used with the best cost-benefit (Werbach & Hunter, 2012).

With these steps suggested by Werbach & Hunter (2012), it is possible to develop a gamified process so long as they are well-structured and chained. However, the authors do not ensure that taking these steps will be enough for a successful gamified process, since it is important to understand whether the process makes sense in the context in question, whether the elements are well designed and whether the interaction with the game is satisfactory.

As insisted by Chandler (2012) and Alves (2015), it is needed to verify whether the system's interfaces are satisfactory, whether the analysis of information transfer or whether the knowledge also occurs satisfactorily to achieve the goals proposed by the gamification on a convincing basis.

2.4 New forms of interaction

Advances in the technology have provided more efficient means to perform activities, which was only possible analogically (Malone, 2006). These advances changed attitudes and opened new possibilities of interaction between environment, technology and behaviour of the individual.

The Second Census of the Brazilian Digital Games Industry (Sakuda & Fortim, 2018) showed that about 43% of all games are developed to run on mobile devices or smartphones, 24% are developed for computers, 16% are developed for web platform, and 10% are already developed to run with virtual and augmented reality technologies.

A comparison with data from the First Census of the Brazilian Digital Games Industry (2016), published in 2016 by the same researchers (Sakuda & Fortim, 2018), showed that there was a mean increase of 290% in the number of games developed to run with virtual and augmented reality technologies, not only for entertainment games, but also for those aimed at corporate training and services.

Gamification developed in digital and virtual environments, with the help of technology, has also generated new incremental experiences.

Among the examples of cases with platforms providing digital gamification services for corporate training, there is the case of an automobile assembler whose objective was to establish a sales force [1] according to the user's experience. By means of short videos showing small tasks, answering frequent questions from customers or providing content-based micro-learning, the company managed to increase by four times the commitment to training. Another example of case was the gamification for training and recognition in call centres, in which learning trails, ranking systems and rewards are used as a form of recognition. As a result, the participants' performance is followed up by the system in real time, which allows business decisions to be made more quickly and accordingly.

The use of virtual and augmented realities can enhance the experience of using a game for training (e.g. experiences involving situations which represent a high risk of hazard or insalubrity, as is the case of agribusiness training for use of pesticides and agro-toxics), as addressed by Kelly (2017) and experienced with Xtreme VR headset (2018).

Augmented reality is a technology which allows the virtual world to be mingled with the reality, thus opening a higher number of possibilities of interaction. According to Tori, Kirner and Siscoutto (2006), augmented reality is a system which complements the real world by assigning virtual components (e.g. sounds, images and videos) to real objects in order to enrich the user's experience with the real environment by means of technological tools, such as tablets and smartphones.

The advantage of augmented reality in relation to the virtual one is basically the cost of the technology, which is more affordable as it runs on smartphones in association with augmented reality glasses (Xtreme VR, 2018). The challenge regarding its use is the same cited in the gamification process proposed by Werbach & Hunter (2012): to define the points and goals of the training so that knowledge transfer can occur on an aggregate and satisfactory basis.

In this process of evolution, it is mandatory to observe that technology is a tool rather than an end itself. Therefore, technological advance assists and enhances the results of the training programs in a variety of contexts, but it is necessary to do it together with relevant content (Sousa & Rocha, 2019; Gattulloa, Scuratib, Fiorentino, Uvaa, Ferrise & Bordegonib, 2019).

3. Methodological procedures

This is an exploratory study aimed at assisting the systematisation of information on the theme (Seltiz, 1974), consisting of two phases:

The qualitative phase involved data collection from a semi-structured questionnaire, which was applied to professionals who had already used or participated in the development of a gamified training. This sample is non-random and the subjects had to be working in companies where gamification was used for training or solutions were obtained by using specific consulting support. Content analysis was used to interpret the resulting data according to the semantic categorisation proposed by Bardin (1995).

The quantitative phase was performed by using an on-line Likert-type questionnaire applied to professionals who had participated in some gamified training on personnel management platforms, with score ranging from 1 to 10 points for each question. Data analysis was performed based on mean values and standard deviation according to an approach proposed by Richardson (2015) and on investigation strategies and method designed for research and communication as proposed by Vergara (1998), Cooper & Schindler (2003) and Creswell (2007).

4. Analysis of results

Google forms application was used to develop the questionnaire for the quantitative phase of the study, which consisted of 12 items. The six first questions were aimed at personal data, group profile and validation, whereas the other six ones were aimed at measuring motivation, learning progress, perception on feedback, applicability of the training, score for experience and free comments on the experience lived.

This phase had 56 valid answers from respondents who reported that they had already participated in corporate training on a gamified platform. The answers were recorded in spreadsheet and the data were analysed with Minitab statistical software (version 18), including normalisation of database for quantitative questions according to a score ranging from 0 to 100 for the answers.

The questions regarding the qualitative phase were elaborated with the following objectives: to list the major motivational triggers related to gamification which can be explored in trainings and development; to list the main difficulties found in the use of gamification for training; and to describe the characteristics indicating contribution from gamified activities of training and development.

Data were collected by means of semi-structured interview based on a 13-item questionnaire in which the seven first questions were aimed at personal data, group profile and yes-no validation. Content analysis was performed to know the most liked elements, elements which most contributed to the results, difficulties and problems found, advantageous aspects and general perception on the use of gamification.

The answers were given by ten professionals who participate or have participated in the development and elaboration of gamified training. These professionals were initially contacted in events on human resources and technology and their participation in the study was confirmed in the majority of the cases on LinkedIn, a professional network.

All the professionals interviewed have relevant experience in the area, with an experience time of six years, on average, working in projects of development and implementation of gamified corporate training (see [Figures 1 and 2](#)).

Based on the quantitative results, one can find that “perception on engagement” was the highest-rated answer among the participants, who in their majority feel motivated to continue and progress in the training. This answer is validated by the highest mean rate (83,214 in the quantitative question) as well as by the most mentioned word in the comments for this group. The question on applicability of the content learnt in the gamified training had comparatively the lowest mean rate. This demonstrates that the perception on the applicability of the content learnt in the daily routine is more likely to be better calibrated in relation to the content.

Content analysis and semantic categorisation ([Bardin, 1995](#)) were used for qualitative questions, highlighting the frequency in which certain characteristics emerge and

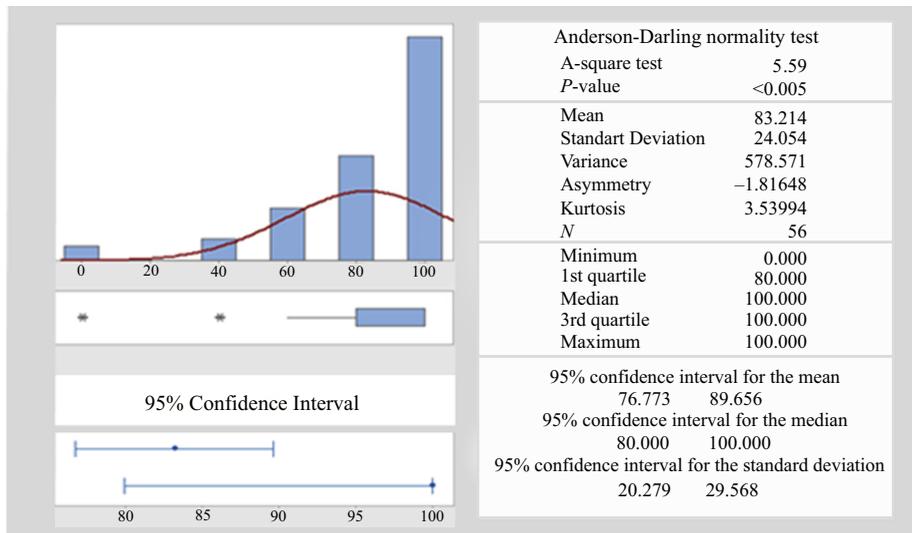


Figure 1.
Summary report for the question on motivation to progress

Source(s): Minitab data search, 2018

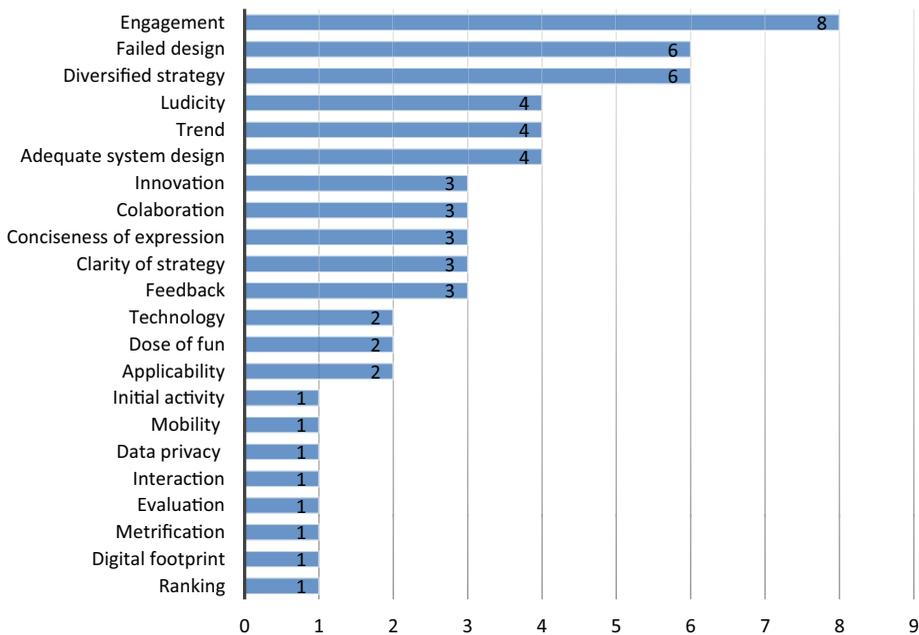


Figure 2.
Incidence of the categories of the qualitative analysis

Source(s): Elaborated by the authors, 2018

considering not only the presence of a given element, but also the absence of a given characteristic in the excerpt of the text.

From an overall analysis of the categories, one can highlight the frequency in which the word “engagement” was cited by the interviewees in their answer to questions on the most-rated elements and the most advantageous aspect in the gamified training. There was a relationship between engagement and intrinsic motivation, which can be observed in the excerpts below:

Interviewee #1: It signals progress and boosts engagement, and it’s through intrinsic motivation and

Interviewee #5: gamification encourages people to overcome, and this further improves the engagement.

According to [Alves \(2015\)](#), this improved engagement is directly related to the relevance of the content addressed by the users of the game and to the way used to promote learning. This factor is directly linked to the next most rated item, which is the question on “failed design”, that is, the main difficulties found in the gamified training. On the other hand, a positive version was also observed in the question on “general perception on the use of gamification” for the category “adequate system design”.

For [Werbach and Hunter \(2012\)](#), one of the six elements of gamification is the ludic factor (i.e. fun) provided by the game, as reported by [Huizinga \(2000\)](#), who explored the game elements. However, the former authors also pointed that it is important to use entertainment accordingly, without exaggerations, which corresponds to the results found in the interviews.

Next, the category “trend” was highlighted in four comments on the general perception on gamified training, in which interesting issues on gamification are addressed, such as its use as a tool to draw attention from different generations in which novelty aspects are brought by

the game, including new technologies which may be associated to the process of gamification (e.g. virtual or augmented reality). Gamification can be used not only for corporate training, but also for many other technical ones such as heavy industry, agribusiness and pharmaceutical industry, only to cite some examples.

Kelly (2017) conducted a study on the forces which will change the world, as is the case of the smartphones, which usually require lighter technology in relation to devices for virtual reality while at the same time can potentially aggregate relevant information to the real environment (Tori *et al.*, 2006). The category “innovation”, which was cited in some answers to the question on advantageous aspects of gamification in processes of training and development for human resources, is very close to this classification.

Dynamics, mechanics and components of the games, as proposed by Werbach and Hunter (2012), also appear as categories in some answers: the dynamics of interaction with other players, an item in the question on advantageous aspects; the mechanics of collaboration, an item regarding the question on the highest-rated element in the gamified training, and the mechanics of feedback in the game progression, also listed in the same question; and components, which are all the elements used to build the game interface. This game interface is represented in one of the answers found in the categories “diversified strategy” and “ranking”, both cited in the question on the elements most liked by the interviewees.

Some of these categories are deeply linked to the objectives listed in the theory of training and development, even before any link with the objectives of gamification regardless of the process involved, but they actually unify the goals for a better result, as the following categories:

“*Clarity in the Strategy*”: one of the points raised by Marras (2016), Noe *et al.* (2005) and Knowles (1980) is the list of phases to determine the need of a training, in which one seeks to know the items to be covered according to the need of both individual and organisation, individual’s level of readiness for training, environment and support material to be used for this purpose. This also happens in the game, an item cited in the six phases (or the 6 Ds) for gamification (Werbach & Hunter, 2012);

“*Technology*”: one of the training strategies is the resources used in their application (Marras, 2016). In this category, the use of simulators was cited as a means already used elsewhere, but which has room and potential to evolve in quality;

“*Applicability*”: In the setting of training, if the individual does not see any value or significance in the activity proposed, then there will be no relevant result. Therefore, as stated by Dutra (2016) and supported by Knowles (1980), if the need is not latent or not perceived by the own user, there will be no enough engagement with the actions of development.

The category “conciseness of expression” also shows an aspect regarding the preoccupation with presenting an effective solution capable of attracting and retaining the user’s attention. This was cited in the answers to the question on what contributed most to the results

Other less-mentioned categories are very interesting and deserve attention. These are “metrification”, “evaluation” and digital footprint”.

For issues such as metrification and evaluation, there is an advanced discussion about the measurement of the results of a gamified training as well as about other human resources areas, such as recruitment and selection by using gamified processes. This is supported by interviews and HR Techs reports (Liga Insights, 2018).

The issue on “digital footprint” is directly related to both metrification and data privacy as the data left behind by all users in the virtual and cloud environments is a track record which can be used to determine preferences and profiles, including other analyses not necessarily impartial. In this sense, the issue on privacy of the data and authorization for their use is one of the modern global problems being discussed in this era of network, digitalisation of processes and digital gamification.

The category of “mobility” was cited by only one interviewee, which is characterised by the possibilities brought by the technology, more specifically, the use of computer or smartphone to perform more activities remotely on the Internet.

The category “initial attractiveness”, mentioned as one of the answers to the question on the difficulties found, was cited by only one interviewee. However, this issue deserves to be highlighted as other problems were mentioned by the majority of the interviewees after they had a first contact with the gamer. There is also the possibility that a gamified training could face a challenge at the start, that is, in the first phase. In order to minimise this problem regarding the initial attractiveness, not only the proposition needs to be adequately presented, but also the initial communication with the collaborator so that he or she knows that access will be important and useful in some aspect.

5. Final considerations

The results from this study have allowed the identification of the main elements of gamification and its relationship with the practices of training and development based on both numerical information and categories of terms mentioned in the analysis of the results. In the open questions, some interviewees had the highest rates in the gamified training in relation to the previous purpose, as the increase in effective participation ranged from 20% (in a finance service company) to up 200% (in a sales force staff).

The high rate of frequency for the word “engagement” was the strongest indicator of concordance regarding the use of gamification in the processes of training and development. This happens because the game helps people getting engagement from the feedback of small achievements, which in turn motivates them to continue, whereas a training expected to reach the results needs to have the participants engaged to achieve the final purpose. Engagement is quite mentioned by the professionals and also has a good perception among them, which strengthens the information and supports what was found in the theoretical references.

Another interesting aspect was the presence of the categories “ludicity” and “dose of fun”, in which the former is positively mentioned and the latter negatively in cases of exaggeration or use out of the context. Ludicity has to do with lightness and a safer learning environment, but in excess it can be perceived as childish, which is seen negatively and causes it to lose its initial purpose.

The issue regarding the new ways of interaction and iteration listed in the theoretical references, especially the use of activities such as the hackathon, which a kind of competition for groups of hackers who seek to create new solutions for a give problem (Shawee, 2020). These applications, which are created based on virtual and augmented realities, were also mentioned in the interviews through the categories “trend” and “innovation”.

The issue on insertion of technology in this process also confirmed the facilities created by the possibilities of a large-scale application, metrification and mobility (e.g. having access to the training on a smartphone). In addition, insights on new issues such as data privacy (in which personal data are recorded on the network) and digital footprint (in which game data are recorded on a database) were also mentioned in the interviews.

Other aspects such as habit formation, despite being mentioned only once in the categorisation, are also linked to the learning loop approach by Herger (2014) and experiences reported by McGonigal (2016) when they assessed the expectations regarding a development program, as proposed by Marras (2016) in the literature on human resources.

In sum, the study sought to demonstrate the application of gamified training with professionals who had already developed and used gamification successfully. Part of them were corporate consultants specialised in gamification platforms and the other are members of companies investing in this training format for a given objective, a fact which makes the opinions of the interviewees qualified and relevant in this context.

In this way, we sought for the opinion of professionals who had been trained by means of gamification so that each group of professionals could record their opinions and perceptions for this scenario.

This theme on the gamification aimed at human resources activities still has room and potential for growth in terms of research on applicability and results. For this reason, some of the suggestions for further studies are the following: (1) to keep on following up the growth of this market and professional sectors using gamification successfully; (2) to further understand the elements which can cause failure in the design; and (3) to investigate the most common errors which should be avoided depending on type of training, area of professional activity and business sector.

Another suggestion for further studies on the use of gamified tools, which will widen this scope, is to relate aspects of a successful gamification and its applicability in other human resources sub-systems rather than training and development, such as recruitment and selection of people and cycles of performance evaluation.

Note

1. Research data, 2018

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Corresponding author

Simeia Azevedo Santos can be contacted at: sazevedotreinamentos@gmail.com

Associate Editors: Lucas, Angela