

What is this thing called gamification?

JOCIMARIO ALVES PEREIRA¹

BRUNO SILVA LEITE²

Universidade Federal Rural de Pernambuco, Brasil

Recibido el 09-12-23; primera evaluación el 30-09-24;

segunda evaluación el 17-11-24; aceptado el 30-11-24

ABSTRACT

Gamification is a process that has been the subject of debate in the 21st century. The mistaken concepts regarding ludic activity, games and gamification are a particularly delicate topic. Although they share a single “gene”, they can be separated, mainly in terms of their objectives and their application in education. This essay seeks to clarify the conceptual limits of gamification and its relationship with ludic activity and games, exploring concepts and approaches. We aim to counter the views that doubt gamification. Hence, while not disregarding other research, we will show that the ludic aims to entertain (play), the game to compete and gamification to involve participants, using elements of games in activities other than games.

Keywords: Ludic; Game; Gamification.

¿Qué es la gamificación después de todo?

RESUMEN

La gamificación es un proceso que en el siglo XXI ha sido objeto de discusiones. Una cuestión particularmente sensible sobre el tema son los equívocos conceptuales relacionados con lo lúdico, el juego y la gamificación. Aunque poseen un “gen” singular, es posible separarlos principalmente, considerando los objetivos y

¹ Mestre em Química pela Universidade Federal Rural de Pernambuco (UFRPE, Recife, PE, Brasil). Doutorando do Programa de Pós-graduação do Ensino de Ciências (PPGEC) da Universidade Federal Rural de Pernambuco (UFRPE, Recife, PE, Brasil). Professor de Educação Básica da Prefeitura de Conceição, Paraíba, Brasil. Membro do Laboratório para Educação Ubíqua e Tecnológica no Ensino de Química (LEUTEQ). Endereço eletrônico: jocimario.alves@ufrpe.br ORCID: <https://orcid.org/0000-0002-8131-4495>

² Doutor em Química computacional. Mestre no Ensino das Ciências e Licenciado em Química. Professor de Química e de Tecnologias no Ensino de Química da Universidade Federal Rural de Pernambuco (UFRPE). É docente permanente no Programa de Pós-Graduação em Ensino das Ciências, no Doutorado em Ensino da Rede Nordeste de Ensino (RENOEN) e no Programa de Mestrado Profissional em Química em Rede Nacional (PROFQUI), todos na UFRPE. Endereço eletrônico: brunoleite@ufrpe.br ORCID: <https://orcid.org/0000-0002-9402-936X>

su aplicación en educación. En este sentido, este ensayo busca elucidar las fronteras conceptuales de la gamificación y sus relaciones con lo lúdico y el juego, explorando las relaciones y enfoques conceptuales. De esta forma, se espera contribuir con la incierta visión de la gamificación. Así, sin relegar otras investigaciones, se asegura que el objetivo de lo lúdico es entretener (jugar), del juego competir y de la gamificación sería involucrarse mediante un proceso que hace uso de elementos del juego en actividades que no son juegos.

Palabras clave: Lúdico; Juego; Gamificación.

O que é gamificação, afinal?

RESUMO

A gamificação é um processo que no século XXI tem sido alvo de discussões. Uma questão particularmente sensível sobre o tema, são os equívocos conceituais relacionados ao lúdico, jogo e gamificação. Que apesar de possuírem um “gene” singular, é possível de separá-los, principalmente, considerando os objetivos e sua aplicação, na educação, por exemplo. Neste sentido, este ensaio busca elucidar as fronteiras conceituais da gamificação e suas relações com o lúdico e o jogo, explorando as relações conceituais e abordagens. Assim, esperando contribuir para combater a visão dúbia sobre a gamificação. Destarte, sem relegar outras pesquisas, assegura-se que o objetivo do lúdico é de entreter (brincar), do jogo competir e da gamificação engajar por meio de um processo que faz uso de elementos de jogos em atividades que não são jogos.

Palavras-chave: Lúdico; Jogo; Gamificação.

1. INTRODUCTION

Before delving into the outline of this work, we shall explain the choice of this essay's title; “What is this thing called Gamification?”. It was inspired by the book “What is this thing called Science?” by Alan F. Chalmers, and seeks to present a clear and precise view of gamification. We should clarify that the analogy of the title guards the similarities, because Chalmers (1993, p.11) explores “modern opinions on the nature of science”. This essay addresses the understandings, implications, relationships and reflections on gamification in the educational context.

On this basis, this essay will objectively discuss the conceptual boundaries of gamification. It is essential to highlight that this study will defend ideas from previous contributions and aims to establish a limit to achieve a definitive construction. Ideas in the form of a concept can therefore enable us to reach a definition.

Essentially, this arises first from the intrinsic relations of “gamification” with other concepts, such as “playfulness” and “game”; second, by the emphasis that gamification is given in the literature (Baptista & Oliveira, 2018; Hamari & Koivisto, 2015; Leite, 2017), which in some situations is described as an active methodology relevant to the teaching and learning process; and last, by the interpretation and enhancement of the discussions on the topic, which is evidently not yet fully clarified, especially in the field of education.

It is also worth emphasizing that one of the sensitive aspects of the discussions outlined in this study is the complex impasse in the community that researches and disseminates gamification. Some understand it as a subcategory of the game or related to it (Cleophas et al., 2018), while another group argues that gamification is something broader and more complex than a game, mainly related to promoting engagement (Hamari & Koivisto, 2015; Leite, 2017), and understands it as a process.

The authors hope that this essay will provide an overall view of the characteristics of gamification. We will start by presenting a theoretical outline of the nature of play and games and go on to present the origin and evolution of the term “gamification”. This is supported by a dialogue with specialized literature, including Brogère (2010), Deterding et al. (2011), Kapp (2012), Koivisto and Hamar (2014), Caillois (2017), Huizinga (2019), to support the evidence of the theoretical and practical limits of gamification. This section will not present conceptual details of play and games but will serve as a basis for explaining gamification (the subject of this essay).

2. DEVELOPMENT

2.1. Ludic: the “play” that generated “everything”

The term ludic (*lúdico* in Portuguese) comes from the Latin “iocus”. However, as its spelling and phonetics are similar to the word “ludus” (the Latin word from which the Portuguese word for “game” is derived), its conceptual definition can be complex, and may imply that play and game are synonymous (leading to a confusion of “ludic” with “game”).

The association of “ludic” with “game” is observed in other languages. In French the verb *jouer* resembles the root of the word “game”, and is associated with play. English has the word *ludic*, which is a literal translation of *lúdico* (in Portuguese), but English also uses the term *playful*, in addition to the word *play*, which refers to fun, and which is sometimes translated as

playing, and “game” which is or should be the word used for the Portuguese *jogo*. According to Leite (2017), the word *game* in English is generally used for a type of game with rules, unlike *play*, which also means game, but in the sense of fun, pleasure, ludic, and does not necessarily have rules.

However, based on the work of Kishimoto (2011), Caillois (2017), and Leite (2022), a difference can be observed between “ludic” and “game”. The former is an intuitive, free and natural activity that aims to have fun (entertainment), and it is associated with games involving objects, narratives, and/or images of the subject. The latter is a formal activity with clear rules and whose central objective is competition.

These assumptions suggest that “game” may have its origins in “ludic” and that when a game is formalized, given specific rules and its aim is competition rather than fun, a game is created. Ludic is organic, free for fun, and it occurs through games. Games are formal and have competition rules. A game can be understood as something with no definition, as the player is seeking enjoyment. This can be confused with ludic, but if there are rules, the activity is characterized as a game.

The statement that ludic is the origin of the game and not vice versa is based on Huizinga (2019), who affirms that play is older than culture. However, he refers to “play”, the ludic. Hence, ludic would be older than culture and, consequently, older than the game.

Nevertheless, it is important to consider that due to the natural quality of ludic activity, the aspects, characteristics, and elements that constitute it are multiple, flexible, and complex. However, ludic activity must be aimed at fun (or not). In this sense, Luckesi (2022) explains that an activity may be ludic for one individual, but not for another. He thus highlights that the ludic process is associated with the psychological singularities of each individual, corroborating the idea of a natural, organic process, free for entertainment.

In view of this, it is pragmatic to recognize that the ludic can be applied to different actions or activities, such as health treatments and/or education, so that it can be a process of improvement for those involved (Kishimoto, 2011; Luckesi, 2022). Some examples might be the use of theatrical scenarios to explain content (in the field of education) or for recreation for people undergoing health treatment (in the field of health). We could therefore suggest that the ludic promotes entertainment (fun), so the activity can be ludic at certain times, not at others, and it will depend on the objective of the action. The “magic cube” (Rubik’s Cube) is one example of this. The Magic Cube (FIGURE 1) is an easy-to-use hands-on material that anyone can use. The pieces of the Magic

Cube articulate with each other through a central piece, allowing the user to rotate the cube 360 degrees vertically and horizontally.

Figure 1. *Magic cube*



The Magic Cube was created in the 1970s by Erno Rubik as an educational tool for architecture classes, specifically to demonstrate concepts of three-dimensionality (Zeng et al., 2018). In teaching mathematics, the Magic Cube allows teachers and students to explore concepts involving plane and spatial geometry. Rubik's Cube has become a very popular toy, a ludic object (allowing different people to have fun). However, assembling Rubik's Cube is challenging, and not everyone can have fun with it, so it loses its ludic aspect.

On the other hand, there are competitions for assembling Rubik's Cube, making it an object for a game (it loses its ludic aspect and acquires a game characteristic) due to the existence of rules and competition. From this example, we observe that Rubik's Cube can be a ludic artifact or a game, depending on the use it is given.

2.2. Game: competition, competition and competition

As previously described, game is a formalized activity which has particular rules and whose main aim is competition. However, when the word "game" is used, the term has a certain ambiguity. It can mean both an object (a deck of cards, dominoes, etc.) or an activity (football, basketball, for example).

This perspective is a product of the game's intimate relationship with society, where it is possible to observe at least traces of the practice (of the game) in all known societies as they are derived from ludic (Caillois, 2017; Huizinga, 2019; Kishimoto, 2011). A game may also be understood to be

an integral part of the culture of different peoples, as a formal practice of humanity.

According to Huizinga (2019), a game “is a voluntary activity or occupation, carried out within certain and determined limits of time and space, according to freely agreed but obligatory rules, endowed with a purpose, accompanied by a feeling of tension and joy and an awareness of being different from ‘everyday life’” (Huizinga, 2019, p. 35-36). In other words, a game is a voluntary individual or collective activity composed of rules understood and freely accepted by a subject (or several of them, called players) and developed in a defined space and time to achieve a specific objective. Koster (2013) states that a game is a system in which players engage in an abstract challenge by rules, interactivity, and feedback, resulting in quantifiable products and arousing emotional reactions.

Starting from the definition and structure of game, we may recognize two large groups: the analog game (AG) and the digital game (DG). The first type (AG) are “common” games which make use of material resources (non-digital) or just strategies in a set of rules that promote competition – remembering that their origin comes from the ludic (Brougère, 2010; Kishimoto, 2011). The second (DG) are games that make use of some interface, platform, or digital resource (DR), but which started as “AG”. DG initially appears as a reinterpretation or transposition of AG, as an electronic (digital) construction or representation with surrealist and fictional scenarios and narratives from games that use imagery resources and/or objects. The idea of creating DG emerged in the 20th century, but it gained more prominence and relevance in the 21st century. With the advances in digital technologies (DT) and multiple platforms, they gained greater prominence and relevance.

However, the division into two large groups (AG and DG) is recent, and there are other lists and classifications of games, such as the classification described by Cailliois (2017) related to action or practice strategy, *Agôn* (conflict/combat), *Alea* (risk/ “bad luck”), *Mimicry* (mimicry/ illusion) and *Ilinx* (vertigo/ disorientation). Cailliois (2017) highlights that this classification can establish close or distant relationships with entertainment. However, it is challenging, given that the entertainment promoted by the game comes from a ludic origin and, as Lukesi (2022) describes, what is ludic for one individual may not be fun for another, and hence it is difficult to classify the game as an activity which promotes, or does not promote, entertainment . Nevertheless, it is clear that the game has rules and its aim is to compete.

Other classifications of games are observed in the literature, occasionally mixed, using different terms such as educative games, educational games,

didactic games, pedagogical games, serious games, and simulation games. These classifications represent complex concepts on which the scientific community has not yet reached consensus.

It is necessary first to reinforce the concept of the game as a formalized activity, which has particular rules and whose central objective is competition. This clarifies the difference between the educative game and the educational game. “Educative” is related to actions in education, in the sense of learning, while “educational” is an adjective related to something more systematic, i.e. something related to a process. Therefore, an educative game is a game with some aspect of customs, such as morals or ethics, which can support behavior through the game. An educational game is one with aspects appropriate for a teaching and learning construct, a resource with clear and intentional pedagogical aspects (Kishimoto, 2011). In this view, the educative game is a subset of the educational game.

The pedagogical game, which in practice is an educational game, is regarded as an activity that can be applied for pedagogical purposes, supporting the teaching and learning process as a resource to explore specific skills and competencies (Kishimoto, 2011). On the other hand, it is understood that the didactic game discussed in the literature (Cleophas et al., 2018; Lima & Messeder Neto, 2021) is not a game specifically, as it does not aim at competition.

In practice, the didactic game uses game elements to engage, thus becoming a gamification with the aim of teaching and learning. It is noticeable that the term “didactic game” has crystallized as a type of game, although there is no epistemological support for this according to the concept of the game, as we will explore in the next section.

Finally, serious games and simulation games are practices, actions, and environments (spaces) representing real or fictional situations, enabling a learning space with specific skills and competencies for an action or activity. According to Wilkinson (2016), there are several perspectives for defining serious games that move between academia and industry in addition to their interdisciplinary character of promoting inconsistent definitions and/or multiple conceptualizations (Laamarti et al., 2014; Wilkinson, 2016).

One definition for serious games is that they are “games that do not have entertainment, pleasure or fun as their main objective” (Laamarti et al., 2014, p. 3). Serious games usually refer to games used for training, advertising, simulation or education, designed to run on personal computers or video game consoles (Baptista & Oliveira, 2018; Susi et al., 2007). However, Ahmed and Sutton (2017) point out that simulators do not possess the aspects observed

in serious games. Simulations narrow the focus of serious games. Simulation is the imitation of reality, recreating an alternative reality within a controlled environment, used for training, entertainment, and explanation (Ahmed & Sutton, 2017).

On this basis, we can see that games are applied in education as in ludic activities. On the other hand, we often see practices in which the game loses its formal aspect and its competition aspects are minimized. Its conceptual characteristics (formality of rules for a competition) are lost, and it assumes the aspects of its origin (ludic), or new processes. Here we can see that some terms may have been coined for practices that necessarily have a “relationship” with games. However, some of these practices are designed to promote engagement by making use of game resources (elements) in activities that are not games, as they are not geared to competition, and are therefore called gamification.

2.3. Gamification: a path to engagement

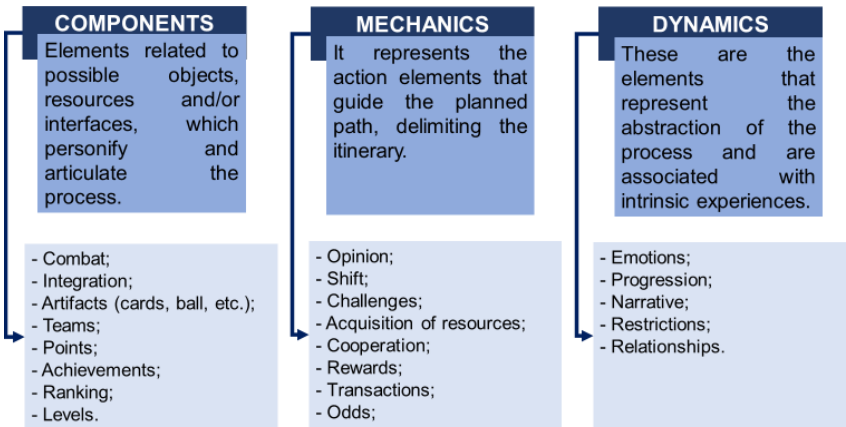
The term gamification has been attributed to an expression coined in the early 21st century by Nick Pelling to describe interfaces and game engines as resources to make electronic transactions enjoyable (Kapp, 2012). However, although the term emerged at the beginning of the 21st century, the practice was observed much earlier for using game elements to motivate individuals.

The literature often defines gamification as game elements in activities that are not games (Deterding et al., 2011; Hamari & Koivisto, 2015; Leite, 2017). However, definitions and concepts evolve according to the construction and development of knowledge, and hence the idea of gamification may have been expanded since it was first developed in the early 21st century. According to Koivisto and Hamari (2014), gamification has been defined according to behavioral issues, trends, and the learning situation.

It is always hard to define a concept, and gamification is no exception. For Deterding *et al.* (2011), gamification consists of game elements and game design techniques in non-game contexts. This definition is also found in Leite (2017, p. 2), in which gamification “[...] consists of the use of game elements (thoughts, mechanics and strategies) outside the context of games”. For Mishra (2013), it is a technique to influence the motivation or engagement of people to solve complex problems, carry out specific actions, or just have fun. Another factor that has been discussed in the works that define the concept of gamification, according to Hamari and Koivisto (2015), is whether gamification provides ludic and free-form experiences (*paidia*) or more structured and rule-oriented experiences (*ludus*).

On the basis of these definitions, we can conceptualize gamification pragmatically as a process in which game elements are used in practices that are not games, in order to promote engagement and thereby recognize three categories of substantial game elements for structuring gamification: components, mechanics, and dynamics (Figure 2).

Figure 2. *Game category and elements*



Note: Adapted from Pereira and Leite (2023).

The components constitute the most practical and specific level elements in a game related to generating mechanics (Paixão & Cordeiro, 2021). For Werbach and Hunter (2012), components are a particular instantiation of game mechanics and dynamics. Instantiation is a process through which an existing object (class) is copied.

The mechanics are seen as basic processes that generate the following actions and generate engagement in the player (Werbach & Hunter, 2012). A mechanic is related to one or more dynamics (Paixão & Cordeiro, 2021). Dynamics are the high-level aspect of the gamified system that must be considered and managed (Werbach & Hunter, 2012). This is the most abstract level, relating to implicit elements (emotion, relationship, narrative, etc.), and the dynamics do not participate directly in the game but must be managed and represent the general panorama of the experience (Paixão & Cordeiro, 2021).

We can find different game elements in the three categories (component, mechanics, and dynamics) (Leite, 2017; Werbach & Hunter, 2012). However, the elements highlighted in Figure 2 are commonly observed in works involving gamification (Baptista & Oliveira, 2018; Pereira & Leite, 2023).

Gamification consists of combining dynamics, mechanics and components to achieve a specific proposed objective.

Regarding the approach/distancing of play and games, Deterding et al. (2011) highlight that gamification is distinguished from recreational and “regular” games due to the objective of the action, which in the case of gamification is the promotion of engagement. Consequently, due to the broad possibility of using game elements, the possibilities for executing gamification are quite varied. Therefore, it is possible to describe at least two types of gamification found in the literature, called structural and content gamification (Leite, 2022).

Structural gamification is the process by which game elements are applied extrinsically without modifying the content; in practice, it can only modify the form of presentation and actions on the content. In this regard, game elements are resources to structure the activity, making them attractive to participants and promoting involvement to generate engagement. This means that structural gamification can be applied to already known activities in a versatile and personalized way without modifying the scenario other than involving the subjects.

A practical example of structural gamification is credit card loyalty, which provides points to attract customers to specific rewards. Another example is the Brainly platform (a platform for communication between students and experts in solving multiple knowledge questions), which seeks to engage people through game elements, such as points and medals, in solving a problem. The most common elements in structural gamification are points, trophies, achievements and levels.

Content gamification consists of a more profound and more intrinsic gamification, which means that game elements modify the content, making the content more attractive and dynamic, achieving the engagement of participants through the immersion relation in practice. It is worth noting that this type of gamification has an architecture closer to a game, despite its objective being to promote engagement and not competition, which can merely appear as an element and not as an objective. An example of content gamification would be digital applications for language courses, such as Duolingo or Babbel, or a multitasking platform, such as Gamefic (a platform for gamification), which allows one to modify tasks to involve participants, specifically for gamification.

In content gamification, new scenarios are created. One form of content gamification is to create a story in which the content will be developed as part of the plot. The escape room can be configured as a gamification of content

since each puzzle solved in the escape room leads the participant to a concept. It is like a content puzzle, in which the content combines to reveal an explanation, a concept. Another example of content gamification is the QR code, with which the student answers the QR code questions and discovers the content.

With this explanation of the types of gamification (structural and content), we can also say that they can be developed with elements of both AG and DG. However, gamification should not be confused with the creation of games (Koivisto & Hamari, 2014; Pereira & Leite, 2023), of any kind.

Gamification must also be applied with care because if its objective is to promote engagement, it is connected to a development interest, whether this is an action or an activity. It is important to highlight that engagement is complex, and must crucially involve individuals through intrinsic and extrinsic aspects.

In this context, we can see gamification applied in different sectors, such as marketing, administration, business, social and educational:

- Gamification in administration continues to drive engagement in solving tasks in a way that makes individuals active in the process, generally associating their activities with bonus elements that can be financial contributions, career development, and even emotional contributions, such as ringing a bell when completing a task or reaching a goal.
- In business, it is used to increase productivity, motivating employees to perform their work and achieve the challenges proposed by the company (the goals);
- In the social sphere, social impact challenges encourage people to participate in specific purposes, in church campaigns for example, and in non-governmental organizations (NGOs) for collecting donations and/or helping with certain actions for a specific audience (Leite, 2022);
- In education, gamification has a broad spectrum and can be applied to improve learning and increase student engagement and commitment to learning. It can be used within an active methodology perspective, in which the teacher acts as a mediator, giving students autonomy and freedom, and placing them at the center of the learning process, for example. It may therefore be inferred that gamification in education implies didactic and pedagogical alternatives for the teaching and learning process associated with learning theories such as active learning (Leite, 2022; Pereira & Leite, 2023). Indeed, gamification in education promotes engagement, provides opportunities for active learning,

and contributes to knowledge construction and the embodiment of learning.

- In marketing, gamification is used as an engagement resource for the presentation and promotion of products, involving individuals and thus catching their attention, which may include loyalty programs that connect the customer to the company. In this context, gamification is used to build loyalty and engage the target audience in campaigns, such as points and rewards cards, earning air miles to exchange for tickets or products, encouraging loyalty, increasing use and motivation.

It is therefore clear that gamification is a broad process. As some authors have proposed (Baptista & Oliveira, 2018; Kapp, 2012; Pereira & Leite, 2023), some aspects of it have yet to be explored in order for its full potential to be achieved, and this would involve improving the theoretical and practical framework, to fill in the gaps in the process. These include the scenario in which gamification is treated as a “neologism” for games aimed at the field of education, which is notably a limited construction of the gamification process, as it is applied in different sectors (marketing, business, social and administrative).

In this regard, Table 1 revisits the concepts of play, games and gamification, and other terms such as educational games (pedagogical games and didactic games) and serious games/simulators, which form different objects.

Table 1. *Concepts of entertainment, game, gamification and associated terms*

Category	Concept
Ludic	Intuitive, free, and organic activity with the purpose of having fun (entertainment). The ludic is associated with games that happen with objects, narratives and/or images of the subject.
Game	Formalized activity, supported by particular rules and whose main goal is competition.
Gamification	Process in which game elements are used in practices that are not games, with the aim of promoting engagement.
Educative game	A game that presents some aspects of customs, such as morals or ethics, establishing the behavior through the game.
Educational game	A game that leads to a teaching and learning construct, a resource with clear and intentional pedagogical aspects.
Pedagogical Game	In practice, it is an educational game, an activity used for pedagogical purposes, supporting the teaching and learning process as a resource to explore specific skills and abilities.

Category	Concept
Didactic game	This is not a type of game, as its goal is not competition. In practice, “didactic games” use game elements to engage, configuring as gamification.
Serious Games/ Simulators	They are practices, actions, and environments (spaces) that represent real or fictional situations, enabling a learning zone with specific skills and abilities for an action or activity.

As stated above (and summarized in Table 1), the relationship between the categories (ludic, games, gamification, educational games, serious games and simulators) have a complex “gene” that causes the lines between conceptual limits to be fine. The use of the term player is one of the problems. In an activity that is not a game, such as gamification or a ludic activity, some authors often mistakenly to call the participant a “player”.

We must stress that gamification is not a game, and hence the term “player” in gamification is inappropriate. We recommend that the term be adjusted to the type of activity performed. When gamification is applied in the teaching and learning process for example, we would recommend the term “student”. In business, the terms should be “client” or “target”, and when generalizing, the most suitable terms are “user” or “participant”.

These problems are part of the construction of knowledge, which is fluid, in agreement with Chalmers (1993), who describes the nature of science, and states that there should not be a palpable limit to knowledge. Hence perceptions about knowledge should bear in mind that knowledge of something will not be static, as there must be a continuous reflection to achieve improvement and understanding of what we seek to know. The definition of the term gamification, from its origins to date, has gone through construction processes, so there are points and counterpoints, which must be carefully discussed, aiming for a construct.

Despite the agreement that in order not to limit knowledge, concepts should not stagnate or crystallize, it is sound practice to establish definitions so that knowledge can be structured and organized, making it solid, explicit, and practicable. The conceptual delimitation between ludic, game, and gamification, as well as educative games, educational games, pedagogical games, and serious games, therefore follows the singularity of their origins. However, it is possible to establish more specific characteristics, considering their application in practice, how this is structured, and the objective of the practice.

Hence we can say that gamification is derived from game elements that have their core in play, just as games originate from play. They therefore may

seem similar, but the objectives of the practices are quite distinguishable, between playfulness – playing (entertainment), game – competing (competition), and gamification – engaging (engagement). Identifying their objective is fundamental for differentiating them.

To illustrate this argument, we took as an example the use of a deck of playing cards, which can be used in various practices. The deck can be used in a game, such as poker, “buraco”, “truco”, “sueca”, “twenty-one”, which have their own rules, which can vary depending on the region and culture. However, the fundamental objective of all these games is competition. Hence the cards can be used in other activities, such as magic tricks, in an entertainment activity, in a ludic way (Santos & Almeida, 2018), without being characterized as a game.

Playing cards can also be a resource for esoteric practices, those traditionally performed by the Romi people for centuries for example, without being regarded as a game. Clearly, playing cards can be used in different processes and activities, both from a ludic perspective (magic, esotericism, etc.) and in a gaming context (poker, blackjack, etc.), and the difference is indicated in the objective. The deck can be used in a ludic activity, game, gamification, and/or educational game (Table 2), in which the purpose (objective) of those involved will determine the characteristics of the activity.

Table 2. *Perspectives on using a deck of playing cards for the purpose of entertainment/playing/gamifying/educational games.*

Class	Description
Ludic	The deck is configured as a ludic activity when used as a resource to perform dynamics, such as “magic tricks” which aim to be an entertainment, a game.
Game (entertainment)	The deck can be used from a gaming perspective as an instrument for play, as in the “game of 21”, which is played with one or up to eight decks of 52 cards each, in which the general rules are to have at least two participants who start the game with two cards and go through rounds where each player draws cards to add up to a maximum score of 21 points. Whoever reaches this score first wins the game; otherwise, the one with the lowest number of points and closest to 21 points wins. In this context, it is clear that the deck is used through rules and has the objective of competition.
Educational game (Pedagogical game)	From a pedagogical game perspective, cards would be used as a game for a pedagogical action. For example, the teacher could use the “game of 21” in an arithmetic class to explore addition and subtraction calculations with all the game formalities as a process for improving mathematics skills. It would have game aspects, however, as it focuses on a pedagogical purpose.

Class	Description
Didactic game	In a didactic game, the cards can be organized with information on a specific subject. For example, it is possible to use the deck with a description of the properties of the chemical elements in the periodic table, containing the symbol, atomic number, mass number, etc. From there, the teacher can apply them (with personalized cards) in a chemistry class as a teaching resource. In practice, this is a structural gamification, as it did not change the content, just changing the way of presenting it (through playing cards), for teaching and learning using game elements to promote engagement.
Gamification	In a gamified activity, the deck of 52 cards can be used as a game element (in the components category). For example, the cards can be organized with specific information of any content (soccer, for example), and a brand that sells products from that sport rewards its customers with a card for every R\$ 20 purchased. When collecting a certain number of cards, the customer receives a 30 percent discount on products signed by soccer athletes. This practice is configured as a gamified activity, seeking to engage a specific audience. Other game elements are present in this practice, such as the challenge (element of mechanics) and emotions (element of dynamics).

As already described in Table 1 and corroborated in Table 2, the ludic, games, and gamification are differentiated by their objectives and not by the resources used, thus presenting a unique characteristic. On the other hand, it is worth highlighting that in the case of educational games, these are nothing more or less than gamification. This statement is supported by the fact that this practice (called “didactic game”) does not have competitive objectives, so it is not a *stricto sensu* game (or pedagogical game). This practice seeks engagement in a learning process and is considered gamification. Although there are arguments in defense of the term didactic game (Cleophas et al., 2018; Lima & Messeder Neto, 2021), within the concepts presented and defended in this study, the didactic game is indeed gamification.

The term gamified activity is commonly used in research into gamification. It is understood as a practice aimed at engagement that uses elements of game but which is not considered a game and the participant is not considered to be playing, and hence erodes the concept of gamification.

In short, based on the concepts and examples described, it is understandable that the boundaries between categories (gamification, games and playfulness) and subcategories (didactic games, pedagogical games and serious games) can be confusing. However, we can also say that gamification, like the other categories (games and playfulness), has its own specific situation. Evidently,

gamification can be explored in different contexts and environments, such as education, where it becomes relevant because it provides the teaching and learning process with an active methodology.

3. CONCLUDING REMARKS

This essay aimed to discuss the concept of gamification by briefly addressing the concept, its relationship with the ludic, and its differences from the game, seeking to identify probable limits between these terms. The authors could infer that the ludic is the origin of the game and that the game is the origin of gamification when the ludic is formalized (with rules and a competitive character), and the game created. When elements (of games) are appropriated with a view to engagement (motivation), that is gamification.

The study made it possible to highlight the very close relationship between the ludic, games, and gamification, and that it is the objectives of the practice which will define the category in question. It is therefore the goal of the action that is the foundation for the concepts of ludic, games, and gamification. It is thus possible to create a gamified activity that can later be applied as a game or vice versa, as exemplified by Rubik's Cube and the deck of cards.

It is important to emphasize that the game may even involve fun (which is the objective of the ludic), although the aim of the game continues to be competition. Gamification may also do so, using competition as an element of the game, but its objective remains that of promoting the engagement of those involved. That said, it is reasonable to highlight that without the ludic there would be no game, just as without the game, there would be no gamification.

It is also important to emphasize that gamification is the process in which game elements are used in practices that are not games in order to promote engagement. Gamification should not be confused with other terms because, when structuring a gamified activity, one should use some game components, mechanics, and dynamics (*i.e.* game elements) to involve the participants so that they are intrinsically attracted and the objective of the action (engagement) is achieved.

We should also recognize that terms such as didactic games, characterized in specific cases of gamification (in education), lead to uncertainty with regard to the word "game". However, the view that didactic games are contained in gamification and not the opposite is a significant step towards improving the theoretical and practical understanding of gamification. While some scholars defend the term "didactic game", this study, anchored in the concepts it

presents, makes clear that it is gamification, even without limiting gamification to education alone, given that it can be applied in other areas.

Finally, the conceptual conflicts regarding gamification must be the subject of regular discussion, from understanding the origin of the term to its application, since gamification has been applied in different contexts and, despite the specific purpose (engagement), its practice has attracted diverse audiences. This purpose of this essay was not to provide a definitive understanding of the term but to encourage conversation about gamification and how it has been approached in education. The debate on gamification needs further discussion, including arguments in favor and against those offered in this study, given that it is the plurality of ideas which builds knowledge, and which in turn will allow us to answer the question: “What is this thing called Gamification?”

Acknowledgements

This work was supported by the National Council for Scientific and Technological Development (CNPq) [grant numbers 422587/2021-4]; and the Foundation for the Support of Science and Technology of the State of Pernambuco (FACEPE) [grant number APQ-0916-7.08/22].

REFERENCES

- Ahmed, A., & Sutton, M. JD. (2017). Gamification, serious games, simulations, and immersive learning environments in knowledge management initiatives. *World Journal of Science, Technology and Sustainable Development*, 14(2/3), 78-83. <https://doi.org/10.1108/WJSTSD-02-2017-0005>
- Brougère, G. (2010). *Brinquedo e Cultura*. (8ª ed). Cortez.
- Baptista, G., & Oliveira, T. (2018). Gamification and serious games: A literature meta-analysis and integrative model. *Computers in Human Behavior*, 92, 306-315.
- Caillouis, R. (2017). *Os Jogos e os homens: a máscara e a vertigem*. Vozes.
- Chalmers, A. F. (1993). *O que é Ciência Afinal?* Brasiliense.
- Cleophas, M. G., Cavalcanti, E. L. D., & Soares, M. H. F. B. (2018). Afinal de Contas, é Jogo Educativo, Didático ou Pedagógico no Ensino de Química/Ciências? Colocando o Pingos nos “Is”. In M. G. Cleophas, & M. H. F. B. Soares (Eds.), *Didatização Lúdica no Ensino de Química/Ciências: teorias de aprendizagem e outras interfaces*. Livraria da Física.

- Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011). From Game Design Elements to Gamefulness: defining “gamification”. In *Proceedings of the 15th International Academic Mindtrek Conference: envisioning future media environments*, Tampere.
- Hamari, J., & Koivisto, J. (2015). Why do people use gamification services? *International Journal of Information Management*, 35(4), 419–431.
- Huizinga, J. (2019). *Homo Ludens: o jogo como elemento da cultura*. (9ª ed.). Perspectiva.
- Kapp, K. M. (2012). *The Gamification of Learning and Instruction: Game-Based Methods and Strategies for Training and Education*. Pfeiffer & Company.
- Kishimoto, T. M. (Ed.). (2011). *Jogo, Brinquedo, Brincadeira e a Educação*. (14ª ed.). Cortez.
- Koivisto, J., & Hamari, J. (2014). Demographic differences in perceived benefits from gamification. *Computers in Human Behavior*, 35, 179–188.
- Koster, R. (2013). *Theory of fun for game design*. Paraglyph press.
- Laamarti, F. Eid, M., & Saddik, A. (2014). An overview of serious games. *International Journal of Computer Games Technology*, 2014, 1-15. <https://doi.org/10.1155/2014/358152>
- Leite, B. S. (2017). Gamificando as aulas de química: uma análise prospectiva das propostas de licenciandos em química. *Revista Renote: Novas Tecnologias na Educação*, 15(2), 1-10. <https://www.seer.ufrgs.br/index.php/renote/article/view/79259/46153>
- Leite, B. S. (2022). *Tecnologias Digitais na Educação: da formação à aplicação*. Livraria da Física.
- Lima, L. R. F. C., & Messeder Neto, H. S. (2021). O debate conceitual do jogo no ensino de química/ciências: nem todos os “is” têm pingo. *Revista Eletrônica Ludus Scientiae*, 5(1), 182-194. <https://revistas.unila.edu.br/relus/article/view/2844/2844>
- Luckesi, C. C. (2022). *Ludicidade e Atividades Lúdicas na Prática Educativa: Compreensões Conceituais e Proposições*. Cortez.
- Mishra, R. K. (2013). Infosys Labs briefings gamification: Rediscover the power of engagement. *Infosys Labs Briefings*, 11(3), 2-4.
- Paixão, W. B., & Cordeiro, I. J. D. (2021). Práticas de gamificação em turismo: Uma análise a partir do modelo de Werbach & Hunter (2012). *Revista Brasileira de Pesquisa em Turismo*, 15(3), 1-15. <https://doi.org/10.7784/rbtur.v15i3.2067>
- Pereira, J. A., & Leite, B. S. (2023) Gamificação no Ensino de Química: uma Revisão Sistemática da Literatura. *RECIT: Revista Eletrônica Científica*

- Inovação e Tecnologia*, 14(32), 1–19. <https://periodicos.utfpr.edu.br/recit/article/view/15233/pdf>
- Santos, V. O., & Almeida, V. L. (2018). Matemática e Resolução de Problemas. *Remat: Revista Eletrônica da Matemática*, 4(1), 147-162. <https://periodicos.ifrs.edu.br/index.php/REMAT/article/view/2768/2065>
- Susi, T., Johannesson, M., & Backlund, P. (2007). *Serious games: An overview*. School of Humanities and Informatics, University of Skövde.
- Werbach, K., & Hunter, D. (2012). *For the win: How game thinking can revolutionize your business*. Wharton digital press.
- Wilkinson, P. (2016). A Brief History of Serious Games. In R. Dörner, S. Göbel, M. Kickmeier-Rust, M. Masuch, & K. A. Zweig (Eds.), *Entertainment Computing and Serious Games*. Springer International Publishing.
- Zeng, D.-X., Li, M., Wang, J.-J., Hou, Y.-L., Lu, W.-J., & Huang, Z. (2018). Overview of Rubik's cube and reflections on its application in mechanism. *Chinese Journal of Mechanical Engineering*, 31, 1-12. <https://cjme.springeropen.com/articles/10.1186/s10033-018-0269-7>

Roles de autor: Pereira, J. A.: Conceptualización, Metodología, Análisis formal, Investigación, Escritura – Borrador original. Leite, B. S.: Conceptualización, Metodología, Supervisión, Escritura – Revisión y edición, Administración del proyecto, Adquisición de fondos.

Cómo citar este ensayo: Pereira, J. A., & Leite, B. S. (2025). What is this thing called gamification? *Educación XXXIV*(66), 194-212. <https://doi.org/10.18800/educacion.202501.E002>

Primera publicación: 23 de enero de 2025.

Este es un artículo de acceso abierto distribuido bajo los términos de Licencia Creative Commons Atribución 4.0 Internacional (CC BY 4.0), que permite el uso, la distribución y la reproducción sin restricciones en cualquier medio, siempre que se cite correctamente la obra original.



Available in:

<https://www.redalyc.org/articulo.oa?id=717882065010>

How to cite

Complete issue

More information about this article

Journal's webpage in redalyc.org

Scientific Information System Redalyc
Diamond Open Access scientific journal network
Non-commercial open infrastructure owned by academia

Jocimario Alves Pereira, Bruno Silva Leite

What is this thing called gamification?

¿Qué es la gamificación después de todo?

O que é gamificação, afinal?

Educación

vol. 34, no. 66, p. 194 - 212, 2025

Pontificia Universidad Católica del Perú,

ISSN: 1019-9403

ISSN-E: 2304-4322

DOI: <https://doi.org/10.18800/educacion.202501.E002>