

# Teacher training in digital culture through gamification<sup>1</sup>

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## *Formação de professores na cultura digital por meio da gamificação*

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### ABSTRACT

The context of digital culture implies a re-dimensioning of teacher training, in view of the specificities of digital competences necessary for the development of a quality education and that addresses current issues. In this sense, the question arises: how does teacher training through gamification enable a new look at teaching? This article presents the result of an empirical investigation, of a qualitative nature and from the perspective of pedagogical intervention, which aimed to analyzing how teacher training using the gamification strategy enables the understanding of teaching practice. The gamified subject, and the focus of this investigation, is offered in undergraduate courses and fits into the list of subjects in the pedagogical context. As data collection instruments, participatory observation and a questionnaire were used. The analysis occurs from the categorization and theoretical confrontation. The results indicate that the gamification of the subject allowed the participants to understand the scope of the teaching action, not being limited to the physical space of the classroom, with the appropriation of different methodologies.

*Keywords:* Education. Teacher training. Gamification. Digital Culture.

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## RESUMO

O contexto da cultura digital implica num redimensionamento da formação docente, tendo em vista as especificidades das competências digitais necessárias para o desenvolvimento de uma educação de qualidade e que atenda as questões da atualidade. Neste sentido surge a questão: como a formação docente por meio da gamificação possibilita um novo olhar sobre a docência? Este artigo apresenta o resultado de uma investigação empírica, de cunho qualitativa e na perspectiva da intervenção pedagógica, que teve como objetivo analisar como a formação docente utilizando a estratégia da gamificação possibilita a compreensão do fazer docente. A disciplina gamificada, e foco desta investigação, é ofertada em cursos de licenciatura e se enquadra no rol de disciplina do contexto pedagógico. Como instrumentos de coleta de dados foram utilizados a observação participativa e um questionário. A análise ocorre a partir da categorização e confrontação teórica. Os resultados indicam que a gamificação da disciplina permitiu aos participantes compreender a amplitude da ação docente, não se limitando ao espaço físico da sala de aula, com a apropriação de metodologias diversas.

*Palavras-chave:* Educação. Formação de professores. Gamificação. Cultura Digital.

## Introduction

The social changes arising from digital culture have made it possible to reflect on how we do many things, including how we relate and how we seek to prepare ourselves for the world of work. In the context of Higher Education, the questions about how a teacher should be trained fall into discussion, sometimes in the field of theories and epistemologies, sometimes in the technical-practical field, when these dimensions should be considered together.

With the specificities of the digital skills necessary for the development of a quality education that meets the contemporary, there are proposals for initial or complementary training that discuss topics such as active methodologies, innovation in education, learning based on digital games, blended learning, among others. Also, in this sense, proposals for the inclusion of gamification in the area of education, incorporating it as a didactic strategy, have been the target of experiences and studies of master's and doctorate degrees, in Brazil and worldwide.

Gamification, coming from the field of administration and marketing, uses the elements of digital games in contexts that are not games, aiming to engage

people in solving problems, or in proposing more experiential learning. However, for Pimentel (2018), when incorporated into education, gamification must be structured aiming the people's interaction with each other, with the world and with technologies. Such interaction enables the development of learning.

Based on concerns about the potential of gamification for teacher training in Higher Education, this investigation starts from the following problematic question: how does teacher education through gamification enable a new look at teaching? The aim of the investigation was to analyze how the training of teachers using the gamification strategy makes it possible to understand teaching. For this, an intervention was developed on a subject that is offered in the undergraduate courses of a Higher Education Institution, and that is part of the disciplines of the pedagogical training axis.

This article presents the result of an empirical research, of a qualitative nature and under the perspective of a pedagogical intervention. The subject, with a workload of 80 hours, was gamified, becoming the focus of this investigation. The first part presents the theoretical understanding of digital culture, followed by the presentation of gamification in the educational context. In the second part, the methodological issues of the research are presented, as well as the data and the discussion. Finally, considerations about the development of the study and its main findings are presented.

## **Teacher training in digital culture**

The concept of digital culture is fundamental to understand the changes in social relations. For Pretto and Silveira, (2008, p. 78), digital culture “[...] intrinsically indicates a growing process of reorganization of social relations mediated by digital technologies, affecting to a greater or lesser extent all aspects of human action”. In addition, Cintra (2003, p. 18) indicates that digital culture is “[...] that which arises from the phenomenon of computer-mediated communication (CMC) reinforced by the high connectivity provided by the Internet”. The way we use technologies to promote interactivity is the most evident change in digital culture.

The social changes experienced in the last 30 years have revealed characteristics of how society has increasingly sought to integrate and interrelate people and their cultures (CASTELLS, 2007). If the globalization process has allowed people and products to move from one side of the planet to the other, sharing habits and cultures from such different regions, social groups are also

looking to register and strengthen their own cultures, for fear that everything that has been built over time will be lost with *inculturation*. Such orthodox positions have a more radical and, sometimes, violent perspective.

In this context of social change, contemporary society, connected through the internet, experiences a paradigm shift and reflects directly on the way we live, teach and learn in this digital culture. Castells (2007) conceptualizes the networked society, synthesizing the morphology of this new way of living in common, emphasizing the systemic and the interconnected. However, Siemens (2012) conceptualizes it as a connected society, being its striking and defining characteristic, which directly implies in the way we learn.

In this study, we have appropriated this understanding of a networked society as a significant point for understanding the digital culture in which we live and which defines postures and behaviors in the most varied aspects of life. The concept of digital culture presented by Lemos and Cunha (2003), and Santos (2013), comprises the understanding that cyberculture is the relationship between Digital Information and Communication Technologies (DICT) and culture, emerging from the convergence of computerization/telecommunication and constituting “[...] a type of sociotechnical design” (SANTOS, 2013, p. 26), in which digital artifacts provide intense interaction, multiplying the dissemination of information and the creation of communities of practice in digital social networks.

For Bangemann (1994), we are experiencing the information society, while DICT are generating a new Industrial Revolution around the world, in no way comparable with the revolution that started in the 18th century. For this author, what we have now is the possibility to process, store, retrieve, and communicate information in any form, without the limits of distance, time or quantity.

The information society (BANGEMANN, 1994) is understood by Lévy (1996; 1999) from cyberculture, in which digital and virtual have a direct impact on the ways we communicate and deal with knowledge. Kozinets (2014) affirms that our worlds and our social relationships are becoming digital or incorporating digital into everyday life, implying a series of changes in our daily actions and thoughts, including in our relationship with what we know and how we use this knowledge in a practical way.

Although Lévy (1999) affirms that we live in cyberculture, the most significant aspect of this new interpretation of society is the change in technology, from analog to digital. What may seem to be a simple change of artifact denotes the acquisition of new characteristics, such as the use of digital artifacts for life situations that were previously concentrated on human competences. Today, for example, robots are used in medical procedures and drones monitor the growth or irrigation of crops.

However, Castells (2007) and Buckingham (2012) state that it is not simply technology that is changing society, because technology is the result of social dynamism itself and its search for survival. On the other hand, we observe that there is a dialectic between society and technologies, in the sense that this relationship promotes changes in all contexts. Such changes are the result of the ways of understanding life, as well as the relationships between people.

For Coll, Mauri and Onrubia (2010, p. 75), “[...] the simple incorporation or use of ICT itself does not inexorably generate processes of innovation and improvement in teaching and learning”. According to these authors, the use of technologies should be reflected and oriented to the production of innovation, promoting different attitudes and options or creating new forms of communication, interaction and cultural production, such as augmented reality. This innovation, in relation to education, requires changes in beliefs, behaviors, methodologies, and relationships, going beyond the simple introduction of computers or tablets in the classroom.

In the search to understand the concept of innovation in education, Blanco (1995, p. 308) states that “[...] it means having an attitude open to change, based on the critical reflection of the task itself, discovering new ways that improve quality teaching and seeking the most appropriate solution to new situations”. And it implies a perspective of change in the pedagogical tradition, demanding from the teacher an attitude of action-reflection. Innovation-centered environments should promote students’ autonomy, allowing them to think and act independently.

In this research, the sense of culture proposed by Eagleton (2011) was used, defined as the aspect that reveals the way of life of a certain social group, which may or may not live together in a specific place. The author points out that the concept of culture must also be thought of on the basis of the changes arising from contemporary society. However, digital culture differs from pre-established standards and promotes an integration of elements from different cultures, and can be understood as a subversive culture, because it improves actions and relationships between people, allowing a child in a slum, for example, to relate to someone from another social class, or even from another country through the network connections they can establish.

As an example, the different uses of digital social networks are observed. Even having the connection and the relationships of a certain social group as a principle, it is possible to find new uses for Digital Social Networks (DSN), such as Facebook pages strictly for commercial purposes, or fan pages restricted to a group that aims to present an academic study or the content of a subject.

But, if we affirm that DICT are transforming reality, it is in the context of Education and its artifacts in Educational Institutions that the look extends beyond the usability of technologies. The discourse of the 1990s, which

continued until the beginning of the 21<sup>st</sup> century, (and is still in academic world) is that DICT will bring innovation and transformation to Education. In this sense, the teacher has the role of encouraging, mobilizing and applying technologies in student learning.

However, who is this teacher? As authors of the article, we are aware of the speeches and works that debate the theme and highlights the professionalization of this professional. However, in this work, we draw attention to two items of observation: I. The initial teacher training; II. Acquisition of skills to deal with technology.

In item I. Initial teacher training, we verify that the Common National Base for the Training of Basic Education Teachers (BRASIL, 2020) provides guidance on what is expected from this professional, with emphasis on classroom practice and alignment with the Common National Curricular Base (CNCB, *Base Nacional Comum Curricular* in Portuguese). This situation guides Higher Education Institution to think about the reformulation of the Pedagogical Course Projects (PCP) and Pedagogy and Undergraduate Courses, focusing on the understanding of a training more connected with the transformations of the present time and technological insertions within the school.

The initial training should be able to insert itself into daily learning practices with its teacher trainers in undergraduate course presenting other ways of thinking, acting and proposing learning strategies that make it possible to rethink the application of formative knowledge in different learning situations. This is the challenge that presented in the initial training, considering that many of the teacher trainers are not used to exercising their teaching function with the use of technologies or with the innovative rethinking of learning strategies.

For Han (2018a, p. 25), we left the “disciplinary society” proclaimed by Foucault, in which the “subjects of obedience” needed to fit into norms, prohibitions, commandments or law for a “performance society”, whose subject “[...] are entrepreneurs of themselves”. Han reports that the performance society encourages a subject focused on projects, initiatives and motivation, whose performance has the power of positivity presented by other readings of the world and behaviors (HAN, 2018b). For the author, the society’s new way of thinking has caused depressions and given a power of decision that subjects were not prepared to deal with autonomy, leading these subjects to be at war with themselves.

But, what reflection on the paragraph previously written can we make in relation to the Initial Teacher Training? We are experiencing a unique moment to rethink education beyond the classroom environment and work strategies, proof of this are the demands of a pandemic (in 2020) that leads us as a human being to use technologies as communication, interaction, collaboration and

cooperation resources. And this situation needs to be understood by us, educators and future teachers, as an opportunity to expand and understand the ways of doing education.

In-service teachers face the challenge of allowing cognitive improvements, creating and reinventing what is already known as work practice. It is from this place that we need to understand the importance of DICT and how they can contribute to the dialogues and establishments of other ways of being and participating in the world.

Item II. Acquisition of skills to deal with technologies is not a new debate, Perrenoud (2000) already emphasizes in his work, “*10 Competences to Teach*”, the competence 8 – Using new technologies, the relevance of the informational technological domain, text editors, communication to distance, technological culture and finally the didactic potential that these resources would provide education.

However, it was the implantation of the Common National Curricular Base (BRASIL, 2019) that directed the educational activity to the acquisition of general skills, in its original text there are ten indications to be developed throughout the formation of Brazilian students of Basic Education. According to the document “[...] CNCB is expected to help overcome the fragmentation of educational policies [...]” and further emphasizes that the general competencies proposed must

“[...] mobilize knowledge (concepts and procedures), skills (practical, cognitive and socio-emotional), attitudes and values to solve complex demands of everyday life, full exercise of citizenship and the world of work” (BRASIL, 2019, p. 9).

Of the 10 general competencies proposed by CNCB, one is directly related to the use of technologies, namely:

Understand, use and create digital information and communication technologies in a critical, meaningful, reflective and ethical way in the various social practices (including school ones) to communicate, access and disseminate information, produce knowledge, solve problems and exercise protagonism and authorship in life personal and collective (BRASIL, 2019, p. 11).

It is observed that the guidance does not only refer to the handling of DICT, but widens the look towards creation, meaning, reflection and ethics “including schools” for the coherent and effective use of technologies. In this sense, teacher training must be a permanent process, leading to a *modus operandi* that is always in rotation with everyday situations and future investigations.

It is up to the Higher Education Institutions the challenge of reformulating the Pedagogical Course Projects, understanding that learning strategies must meet the present time. Among these strategies, the use of gamification which is our next topic of writing.

## **Gamification in Higher Education**

The theme of gamification in educational contexts, whether formal, non-formal or informal, has enabled the development of a significant number of investigations on the subject (BOTTENTUIT JUNIOR, 2020). However, it is also observed that there is a limitation in the understanding of gamification, when it is associated with the use of digital games in educational processes, or when associated with the use of Digital Technologies (DT). In this sense, within the scope of the Research Group in which this investigation was carried out, it is understood that gamifying is not using digital games, and that gamification can be developed without the use of digital artifacts. What is possible and expected is that all artifacts, analog or digital, such as digital games, by presenting ways to solve real life problems, are incorporated in the context of the planning and execution of gamification. Thus, the choice of the key elements of digital games for the elaboration of gamification will depend on the objectives, that is, the purpose for which the gamification will be employed.

Therefore, we understand that playing a pedagogical activity does not mean creating a game with a pedagogical bias or simply playing to teach. It is necessary to understand and signify mechanics and dynamics (elements) present in digital games, permeating them in pedagogical practices (MARTINS; GIRAFFA; LIMA, 2018).

According to Khasianov, Shakhova and Ganiev (2016), the games are increasingly becoming an important tool in the approach to stimulate interest in educational processes. It is in this sense that studies on gamification start from the assumption that digital games promote the engagement and motivation of users. If its emergence occurred in the business context, in the educational environment seems to seek consolidation, being defined initially as the process of using the

mechanics, style and thinking of digital games, in a context different from that of games, as a means of solving problems and engaging people. Gamification implies a proposal that goes a little beyond the implementation and use of digital games in educational activities, without disregarding this practice.

For the elaboration of a gamification, it is necessary to consider the use of elements of digital games, such as the narrative, the feedback system, reward system, conflict, cooperation, competition, clear objectives and rules, levels, trial and error, fun, beside interaction and interactivity (ZICHERMANN; CUNNINGHAM, 2011). For the choice of the elements that will make up the gamified strategy, we indicate that a careful analysis of the elements to be inserted is pertinent, avoiding the use or emphasis for those that indicate a mechanical learning, or in an uncritical perspective. The focus of a gamified proposal is always the subject who participates, being themselves the protagonists of its story, author and co-author of its trajectory (PIMENTEL, 2018).

Kapp (2012) indicates that gamification is an application of mechanics, aesthetics and the concept of games, with the aim of providing engagement between people, motivating actions, encouraging learning and promoting problem solving. However, in the educational context, gamification must go beyond engagement and motivation, as well as the simple intention that learning is “fun”.

From the point of view of the studies carried out by the research group in which we are inserted, the concept of fun or animation has provoked a series of questions, mainly when the focus of learning is lost and techniques, methodologies or digital games are used only for the student’s fun, forgetting that in these moments learning occurs, including in a tangential perspective. It is not a question of eliminating the issue of fun in education, much less of trivializing such a concept, but of reflecting that it is increasingly necessary to unite (or rediscover) playfulness and learning.

In addition to the concept of Kapp (2012), Pimentel (2018, p. 78) proposed that “[...] gamification is the process of using the mechanics, style and thinking of games, in a non-game context, as a means to engaging and motivating people, aiming at learning through interactions between people, with technologies and with the environment”, where the concept of technology in a critical bias of the human-technology relationship.

According to Brull and Finlayson (2016), gamification allows students to participate collaboratively and create a learning community, enjoying the freedom to experiment and fail in a controlled environment. Likewise, students have the opportunity to interact with different challenges that keep them motivated. There is evidence that students involved in gamification environments improve their learning and increase their motivation and commitment (CHU; HUNG, 2015).

Higher Education can be defined as “as a lifelong process of accessing, interpreting, and evaluating information and experiences” (SHUTE; KE, 2012, p. 47), a process that is active, goal-oriented, contextualized and interesting, which we can translate as skills, values and dispositions where the student begins to discover new learnings and is convinced that gamification can improve this process, which results in meaningful and useful learning for the student.

Shute and Ke (2012, p. 48) also refer to a “convergence between the core elements of a good game and the characteristics of productive learning”, stating that the “best instruction hovers at the boundary of a student’s competence”. In Higher Education, it is not different from other levels and it is necessary to track motivational, emotional and metacognitive characteristics during gamification, which will allow us to better understand the specific behavior and the final results. Immediate feedback can point specific areas of difficulty that students are facing (SHUTE; SPECTOR, 2008).

According to Mora Carreno *et al.* (2017), student motivation difficulties are recognized as a problem in several educational settings, also reaching university levels. In this context, gamification has proven very promising in different learning environments, becoming an important requirement for success.

A systematic review of the literature by Subhash and Cudney (2018) to identify how gamification could enhance student learning in Higher Education, brought us an overview of the implementation, benefits and challenges of its use in the classroom. We highlighted the main ones: greater engagement, inspiration, participation and interest of students; increased motivation, competitiveness and collaboration among peers; learning from failures; pleasure in learning and better understanding of the proposed contents.

This review found that gamification has overwhelming support for several benefits for teachers and students in Higher Education. Student involvement, motivation and pleasure are widely cited as benefits of gamified learning. The successful use of gamification in Higher Education provides reasons for its effective application of teaching and learning in various areas of knowledge.

## **Research context and methodology**

The conception of this research starts from the understanding of its position in the formation of future teachers. In a qualitative approach (GONZALES-REY, 2005; CRESWELL, 2010; FLICK, 2009), the study starts from the need to understand the subjective aspects of the elements collected

and its general objective, which is to understand how the gamified strategy has provided a new view on the teacher role. Within the context of qualitative methodology, we opted for pedagogical intervention (DAMIANI *et al.*, 2013). The pedagogical intervention research (DAMIANI *et al.*, 2013) understand that the possibility of not requiring control over behavioral events, denotes the examination of contemporary events, but without the manipulation of relevant behaviors.

The research was carried out in the development and execution of the Planning, Curriculum and Evaluation of Learning (PCLA, *Planejamento, Currículo e Avaliação da Aprendizagem* in Portuguese), which is an integral part of the set of mandatory subjects of the Public Higher Education Institutions graduation courses, offered in the afternoon to the students of the Chemistry and Mathematics courses who were enrolled in the in-person semester. It was in the monitoring of this discipline that gamification was used, the purpose of which was to analyze to what extent the strategy helped students, future teachers, to rethink teaching practices.

Being an 80-hour discipline, the proposal was planned and organized in such a way that the gamification storyline was inspired by the narrative of the 1985 film, *Back to the Future*, which tells the story of a teenager who returns in time, both to the past and to the future. The film was directed by Robert Zemeckis, written by Zemeckis and Bob Gale, and starred Michael J. Fox, Christopher Lloyd, Lea Thompson, Crispin Glover and Thomas F. Wilson.

From this narrative, the theme was planned bringing elements of digital games, such as randomness, collaboration, immediate feedback, avatar, among others. The development of the narrative, based on the film, was subdivided into three learning paths, referring to the past, present and future time. Each trail was composed of challenges (activities) that should be overcome by students and the registration of such challenges should be done in the Virtual Learning Environment (VLE) used by Public Higher Education Institutions, becoming the students's virtual portfolio.

The gamified strategy was presented and explained to the students at the first class meeting, when it was indicated that they would be subdivided into groups of three students, having the obligation to have students from both courses in the trio. This option of forming groups had the objective of promoting interaction between the students of both courses. Each group should to choose a path, and each day of class the students had to choose which challenge they would seek to achieve, having as a general rule that once a resource was chosen, it was not possible to repeat in any other challenge, in any of the trails.

The research was approved by the Ethics Committee and registered at *Plataforma Brasil* under the number CAAE 68728017.1.0000.5013. The participants were invited to participate in the research after presenting the context of the discipline in a gamified perspective and requesting the reading and signing of the Free and Informed Consent Term (FICT, *Termo de Consentimento Livre e Esclarecido* in Portuguese). In the Mathematics course, 15 students were enrolled and agreed to participate in the research. Of the 15 students in the Chemistry course who were enrolled, 2 did not take the course and the rest agreed to participate in the research. The total number of participants was then 28 students who, for ethical reasons, were coded (A1, A2, A3 ... A25). The data collection of this investigation was concentrated in the records of observations during the the classes and through an online questionnaire, elaborated with subjective questions.

## Data discussion

With the development of participant observation, it was possible to identify how the gamified strategy of the discipline involved students. At the beginning, they thought it was strange to have pedagogical subject that was not only focused on theory, but that combined theory and practice. Only after the third class they really realized that they could not just wait for the teacher to “dictate” what should be done that day of class.

Through the questionnaire, applied at the end of the course, the research participants were initially asked what it means to be a teacher. The question served as a reference to understand the vision of the concept of teaching and the type of expectation that the work proposal could raise in the student. In their answers, they indicate a mediating view of teaching, in addition to a teacher who “dominates” content, as can be seen in the following answers:

*“Being a teacher is much more than teaching a proper content, being a teacher is also teaching the individual for life in society although not everyone does it but the true teacher is concerned with his students and making them reflect on the things of the environment in which he is inserted”.*

(A2)

*“Someone who got to know students first and helps them find the path to knowledge faster”.*

(A3)

*“He who shares his knowledge, and not only that learns with a student, becoming a better version of himself, to teach better each time”.*

(A4)

*“It means looking for ways to make the student have an interest in learning the discipline, seeking methodologies to make the content dynamic, bringing it (the content) to the student’s daily life”.*

(A6)

*“Be a mediator between student and content, so that the student learns in the way that he sees fit”.*

(A9)

The testimonies present a broader view of the teaching exercise, it is noticed that it breaks the view of the teacher as the holder of knowledge and the mediator enters, a professional who needs to be aware of social and temporal situations, understanding that the school is not disconnected from the world. This perception view can be observed in the speech of participant A10:

*“It means assisting the student in his learning process, always seeking to be in sync with modernity. Thus, the class no longer has a conception of something boring and tiring, starting to be seen as something fun and innovative”.*

(A10)

The participants were then asked if the methodology of PCLA contributed to a new vision of teaching practice. All responded positively, highlighting the comments of some participants:

*“Yes, because it makes us understand the increasingly diverse form of teaching practice”.*

(A5)

*“Yes, teaching practice is much more than what we see today, the subject of PCLA helps to broaden our knowledge, and makes us more creative people”.*

(A9)

*“Yes, it changed my way of evaluating the student through dynamic activities, not only through exams”.*

(A17)

*“Yes, because it encourages us to look for ways to develop a better pedagogical practice, so that when we teach, they become more attractive to our students”.*

(A21)

*“I discovered new tools and that I could apply them in the classroom, which certainly allows for frequent learning, allowed to have a different view of the classroom, each class becomes a database which I can use to learn and create new classes”.*

(A26)

The reports indicate that a linear vision of learning is broken, in addition to knowing, the indications contained in the Common National Base for the Training of Basic Education Teachers (BRASIL, 2020), which is the relevance of various learning strategies to consolidate the students' knowledge. These strategies go beyond the use of DICT and invite teachers to rethink ways of working with the use of significant methodologies in the classroom, as also indicated by the authors used in the theoretical framework of this study, such as Coll, Mauri and Monereo (2010).

Bearing in mind that the discipline was developed from a gamified strategy, participants were asked how gamification contributed to their training, as a future teacher. The answers indicate that the participants began to observe that they can promote gamification, as well as other experiences, technologies and teaching strategies:

*“It opened up a range of new possibilities for teaching-learning”.*

(A1)

*“I learned some very interesting concepts that I want to test when I am a teacher”.*

(A3)

*“Showing and teaching ways to teach without using the blackboard and chalk, showing that they can do more playful activities, in teaching and learning”.*

(A4)

*“It contributes to the perception of how the technological environment can help in the application of any content and thus making it easier for the student to absorb the content”.*

(A5)

*“I was able to observe several ways to use to teach my future students, generating interest in a natural way. That is, without having to be forced to participate in class”!*

(A9)

*“The gamified class style made me realize that there are several ways to present content, to develop work in a more didactic way, and in a fun way without putting pressure on students”.*

(A10)

*“I realized that I have several ways, other than the traditional ones, to form the student so that the content, for him, does not become something abstract, but clear and dynamic”.*

(A13)

*“It helped to open the mind to the diversity of a development of methods to be applied in the classroom, which will attract students’ attention and show with creativity the knowledge being presented”.*

(A17)

In the responses, it is observed how the participants managed to perceive gamification beyond the fun, as postulated by Pimentel (2018). In the analysis of the observations made in the classroom, the participants’ commitment to their learning was also noticeable. The fact can be proved by the observation that, in each class, the students arrived even before the beginning of the class, already in search of carrying out the readings and proposed activities. The engagement was noticeable, including the search for feedback from the teacher after the activities.

About the activities developed, it was asked if they rethought, in any way, what the teaching practice will be like when taking over a classroom. The question sought to investigate as many aspects of the subject's own curriculum as the specific of the gamified strategy adopter. The responses indicate that the activities of this subject reached its objective, proposing a reflection on pedagogical practices:

*“Yes, because just as I said before, my way of evaluating students has changed, I have to explore more alternatives, not just getting stuck in tests”.*  
(A5)

*“Yes. I discovered many activity resources that make it possible to teach a class different from the conventional one”.*  
(A6)

*“Yes, through the discipline I could see that the teacher, besides having knowledge, must always innovate in the way of presenting the content to the students”.*  
(A7)

*“Yes, it made me think that the lessons of copying from the board and reading the book are outdated. This PCLA story made me expand the possibilities of different things to teach”.*  
(A9)

*“Yes, the idea I had about the classroom is based on the actions and processes of my teachers throughout life, today each class is an opportunity to understand a student and make them interested in the content proposed in the class and with this I adapted and improved the classes”.*  
(A14)

The diverse learnin contexts can guide other *modus operandi*, in the statements it appears that the vision of teaching still needs to be rethought, that is, competence is not just teaching, but proposing and understanding the way of learn. In this case, only a differentiated practice in the context of initial training can provide reflections on changes in the future teacher. Also in the record of the observations made during the development of the gamified discipline, it was found that the methodological strategy changed the participants' view of teaching when it allowed them to be the protagonists of their own learning.

In order to understand the participants' perception of the relationship between the gamified discipline and teacher training, it was questioned how the activities developed rethought, in some way, the teaching practice. There is also a rethinking about what learning is and how it can occur. The participants indicated:

*“It made me reflect on the importance that my role as a teacher will have for my students. A simple activity, if well planned and oriented becomes attractive to the student, but also helps in fixing the subject making the subject or the act of studying something fun and not monotonous”.*

(A7)

*“The transposition of a content actually escapes from something abstract to something very concise. It gave me a different perception on teaching practice; learning is not fixed, but fluid and that makes all the difference, the student learns and the teacher does too”.*

(A13)

*“The activities developed made me understand that teaching is not just reading the content, when carrying out each challenge, it was possible to learn new methods of teaching the content and improve my teaching”.*

(A10)

*“They made me rethink that things like games can be much more productive than helping someone else's motor development. Taking into account that learning is not only the absorption of a certain subject, but of a whole that is used”.*

(A15)

*“The main thing was the feedback from the teacher and the way the teacher coordinates the whole class as if it was a conversation, a more relaxed and natural way of presenting the knowledge, especially when doubts arose, allowing to relate the contents and use creativity to create something new”.*

(A23)

Considering the reports, it is clear how much progress we still have to make changes in the daily practices of teacher training and in the perception of what is learning. The statements show, in the reports, that we need to bring enthusiasm, feedback, planning and understanding, for each student to build their learning path.

The information from participants reveals the challenge that is imposed on the formation of the teacher, who is trained in a temporal context, and needs to adapt to the challenges of the present time. As we are “models” who guide the learning paths, we cannot refuse to understand the learning prospects of the future time.

## **Conclusion**

Considering that the context of digital culture implies a redimensioning of teacher training, this investigation proposed to seek answers on how teacher training through gamification enables a new look of teaching, aiming to analyze how teacher training using the strategy of gamification makes it possible to understand teaching.

The data collected through observation and the questionnaire, indicate that the participants of the gamified subject understood that teaching requires a reflective and participative posture. The data indicate how much it was possible to understand that the teacher can use different teaching strategies, in the pursuit of effective learning.

As a methodological strategy, gamification met the planning carried out, promoting engagement, playfulness and the execution of practical activities, allowing participants to deepen the themes of planning, curriculum and learning assessment. There was a change in the attitudes of the participants towards the discipline, with a greater commitment to their own learning, noticeable in the observation of the participant.

We understand that the proposed objective of the investigation has been achieved, indicating that a methodological perspective that involves the participants in the search for problem solving, with a consistent theoretical basis, promotes a reflection on teaching. In this sense, gamification was a way of promoting engagement and learning.

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