

## Artigo Original

# Teaching And Learning In The Digital World: OnLIFE Education in Pandemic Times

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## Abstract

The paper is linked to the Teaching and Learning in the Digital World Academic Activity (AA-EAMD), in the Pedagogy Degree course at the University of Vale do Rio dos Sinos - UNISINOS, in the context of the research “DIGITAL TRANSFORMATION IN EDUCATION: Innovation Ecosystems in hybrid and multimodal context<sup>1</sup>”. The main objective was to develop Gamified Learning Projects (GLP), from the problematization of the present world (pandemic), in order to contribute to the current moment of education. The methodological design of the AA was inspired by the cartographic method of intervention-research, (PASSOS; KASTRUP; ESCÓSSIA, 2009; KASTRUP; TEDESCO; PASSOS, 2015) as an interventionist pedagogical practice. The proposal consisted of experimenting the movements of cartography, associated with the inventive GLP methodology, instigating inventiveness in the perspective of building an OnLIFE Education. Observation, travel diary with photo records, audio, text and video, forums, self-evaluation, peer evaluation and teacher evaluation were the appropriate elements for monitoring and evaluating learning. As a result, the experience contributed to resignify the dwelling of teaching and learning in times of pandemic, providing the necessary transformations for an OnLIFE Education.

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**Keywords:** education, pedagogical practice, pandemic

## 1. Introduction

When we reflect on formal education and the geographical spaces in which it takes place, we come to the walls that surround educational institutions, the walls that limit the classroom to the classroom, surrounding learning. We can relate this perspective to the metaphor of the walls that surrounded the ancient and medieval cities, used by Di Felice (2009). Although in the context of cities this physical separation has ceased to exist, man was no longer able to be part of nature and, separately, reduced everything that was not human to raw material and objects. In the scope of education, we can say that the walls of the institutions and the walls of the classrooms separate formal learning, from the learning of a networked world, with those reduced to the internal space of the classroom, to the instructional materials chosen by the teacher, occupying both the centrality of the process and, therefore, ignoring the biodiversity ecosystem, of which man is part of this network, which, today, is also woven by technique. It is precisely the technique and technology that make it possible to hybridize these different worlds (physical, biological and digital), allowing the learning to continue beyond the walls of the classroom and the concept of the classroom, in spaces-flows that extend in different digital platforms, expanding the habit of teaching and learning beyond the limits of geographic spaces.

With the pandemic and the impossibility of physical displacement, faced with the need for isolation, educational institutions, previously limited to geographical spaces and with well-defined borders, were forced to "go out the door". though most of the pedagogical strategies adopted by different institutions and levels of education have been "remote emergency teaching<sup>2</sup>", the fact that teachers and students use different Digital Technologies (TD), in a network, albeit in the perspective of a tool, has modified -you. In this way, education as we knew it before

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<sup>2</sup> Teaching or class modality that presupposes a geographical distance between teachers and students. In this modality, physical classroom teaching (same courses, curriculum, methodologies and pedagogical practices) is transposed to digital media, in a network (MOREIRA; SCHLEMMER, 2020).

the pandemic no longer exists. The need for the massive use of TD in a network, the only alternative so that the teaching and learning processes could continue to happen, potentiated a movement that, since the 1980<sup>3</sup>s, had already been happening in education, but at an extremely slow pace, if we compare with the changes brought about by digital transformations in other sectors of society.

Schlemmer, Di Felice and Serra (2020) mention that the experiences lived by education in times of pandemic and the problems that emerge from them contribute to the development of the concept of education OnLIFE. This concept is based on the understanding that networked DTs are not tools, instruments, resources, support to be used, but "environmental forces" (FLORIDI, 2015) that change who we are, our interactions and the way we socialize, the conception that we have from reality, as well as our interactions with that reality. Thus, the present time, with its networked TD, has tensioned the epistemologies, theories, methodologies and pedagogical practices, problematizing the current pedagogies within the scope of this new hyperconnected reality, causing the emergence of intelligent ecologies and educational ecosystems. These affect the way we teach and learn, since both processes occur in a network, through connective acts, co-engendered in an atopic dwelling.

It is in this context that the Education OnLIFE project in times of Pandemic, within the scope of Academic Activity Teaching and Learning in the Digital World (AA-EAMD), acquires relevance for teaching learning, today and in the future, precisely because students being able to experience, as subjects of learning, an OnLIFE education proposal, enhanced by inventive methodologies (SCHLEMMER, 2018) and sympoietic pedagogical practices (A CIDADE..., 2021). This experience is permeated by constant reflection on how they are learning and how this way of learning enhances inventiveness in education, that is, it is in this process of experience-reflection-potency that inventiveness in the scope emerges, in the network, the inventiveness in scope the construction of new pedagogical practices.

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<sup>3</sup> See Schlemmer (2019).

The development of AA-EAMD began with a video narrative, inspired by literary works such as *Alice in Wonderland* by Lewis Carroll, *The Lord of the Rings*, by JRR Tolkien, and the *Matrix* film series, which began in 1999, and its adaptations to the cinema, hybridized with theoretical concepts. This narrative was developed and engaged students in a process of exploration-reflection-co-creation in a network, which involves, based on problematizations in the present world, epistemological-theoretical-methodological-technological appropriations.

Thus, to understand the differentiation between the concepts of physical classroom education, remote education, distance education, distance education, digital education and hybrid education (MOREIRA; SCHLEMMER, 2020), the concept of OnLIFE<sup>4</sup> education is constructed. This involves a process of reflection on the habit of teaching and learning in a hyperconnected reality.

Today, more than ever, we need to dare, discover and invent in education. According to Papert (1985, p. 143), “the discovery cannot be prepared; the invention cannot be planned”. When educational institutions, the management team, teachers and students challenge themselves to digital culture (starting to use TD, to appropriate, to engage, joining together with different digital platforms, in a network), they launch themselves into the unpredictable, the new. This movement can contribute to problematize the concept of class and classroom, favoring the emergence of practices, methodologies and the co-creation of new pedagogies, which enhance the reinvention of educational institutions, in a context of educational reality or hyperreality each more “OnLIFE”.

Everything we have been experiencing with the pandemic has shown us and taken us to a new context, in which many of our previous habits (which we no longer thought about, since they were crystallized) no longer serve, which has caused cracks in our cognition, leading us to successive experiences of problematization of our present world (KASTRUP; TEDESCO; PASSOS, 2015). There are many strangers, the

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<sup>4</sup> The term OnLIFE is borrowed from Floridi (2015) and is present in the document *The onlife manifesto: being human in a hyperconnected was as a result of the research developed in the Onlife Initiative project, being, here, worked on in relation to education, from the relationship with other authors.*

tensions we are experiencing, which puts our certainties in check, since we are being forced to explore, to experience new worlds and new possibilities in different contexts of life. This makes us think and build new ways of carrying out many activities that were previously simple, as they were already automated and we no longer needed to think about them to the point that we had forgotten, according to Kastrup (2010), their invented character.

As argued by Schlemmer, Di Felice and Serra (2020, p. 18):

We are experiencing a change in the ecology of learning, a favorable movement for the transition from a school made up of classrooms and classes, to an ecology of data platforms, access, co-production and content sharing in an interactive way.

For this, it is necessary, according to the authors, “to overcome the idea of an educational paradigm and to think in the perspective of a cosmogram, in the logic of the network, which architect all the ecology of learning in an OnLIFE Education process” (SCHLEMMER; DI FELICE; SERRA, 2020 , p. 18). This requires new epistemologies, such as reticular, connective and atopic (DI FELICE, 2009; 2012; 2018), which presuppose co-engineering between different human and non-human entities, contributing to the overcoming of an anthropocentric worldview.

Thus, the problematic / motivation that gives rise to this article emerges: a) from the concern with the teaching routine in higher education (physical and on-line modality); b) the perception of the distance between the pedagogical practices developed in the context of higher education and the way these subjects learn (considering the means with which they interact), in relation to the pedagogical practices developed in basic education and the way children learn (considering the means with which they interact); c) the need to understand the potential of games and gamification in a context of hybridity and multimodality, as enablers of knowledge experiences; d) the need to understand the potential of internationalization at home; e) the interest in investigating the potential of hybridism in the creation of innovation ecosystems

in education.

The objectives consisted of:

- problematize education in times of pandemic;
- develop Gamified Learning Projects (PAG), in order to contribute to the construction of knowledge experiences in different contexts and with different actors involved in education;
- understand the potential of this proposal to provide the articulation between research, the formation of the scope of the *stricto sensu*, the initial formation and the pedagogical practice developed in basic education and in non-formal education spaces.

The investigated experience developed in the first semester of the year 2020, with 31 students, aged between 17 and 40 years old, predominantly women, from 16 municipalities in the state of Rio Grande do Sul, who worked as teachers or assistants in early childhood education and early years of elementary school. A doctoral student in the area of education<sup>5</sup> and a student in the Digital Games course, who received a scientific initiation scholarship, participated in this process<sup>6</sup>.

## 2. Academic Activity Teaching and Learning in the Digital World

The Academic Activity Teaching and Learning in the Digital World (AA-EAMD), a mandatory subject that integrates the curriculum of the undergraduate course in pedagogy at the University of Vale do Rio dos Sinos - UNISINOS -, being optional for the other undergraduate courses. AA-EAMD is offered in an online mode, with a workload of 60 class hours, initially composed of four physical face-to-face meetings (one initial and the other evaluative) and fifteen online meetings. In physical face-to-face meetings, it was possible to take over the computer lab and

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<sup>5</sup> Janaina Menezes.

<sup>6</sup> Camila Flor Wildner.

different spaces at the university and, in online meetings, the Canvas Virtual Learning Environment, social media, digital notebooks, metaverses - 3D Virtual Digital Worlds, simulators, games, instant communicators, web conferencing software, among others.

The main objective of AA-EAMD is to create spaces for learning and digital emancipation capable of promoting the development of theoretical-methodological posture and technological knowledge that favor the integration of different TDs in the construction of knowledge. It seeks to reflect on the use / appropriation / coupling as an agency of these technologies for human and social development within the scope of basic education and Youth and Adult Education (EJA).

The contents address: characteristics of the network society; influences and changes caused by TD in the contemporary world; epistemological assumptions and educational paradigms; use / appropriation / coupling as agency of TD in the educational process (Virtual Learning Environment, Metaverses (VLE), communicative agents, simulators, games, instant communicators, instant search engines, virtual learning and relationship communities, geolocation technologies, videos etc.); hybridity and multimodality (e-learning, b-learning, m-learning, p-learning, u-learning i-learning, g-learning and GBL); gamification, BYOD, Flipped Classroom; innovative teaching methodologies and practices.

The epistemological assumptions that guide AA-EAMD are based on reticular, connective and atopic epistemologies (DI FELICE, 2009; 2012; 2018). This requires establishing, in the context of the presence of TD in education, differentiation between “use”, “appropriation” and coupling in the sense of “agency” (SCHLEMMER; DI FELICE; SERRA, 2020).

In a usage approach, TDs are understood as a tool, resource, support that allow the teacher, as a user, to reproduce, transpose existing methodologies and pedagogical practices.

In an appropriation approach, TD are understood as intelligence technologies (LÉVY, 1993) and, through the process of signification,

allow the teacher to also be a producer, empowering him in the construction of new pedagogical practices.

In a coupling approach towards agency, TDs are understood as environmental forces and, by the transorganic connective act, constitute networks, interconnecting different entities, human and non-human actors. In this process actors-networks, ecosystemic interactions emerge, which instigate the teacher to overcome the binarisms organism / environment, subject / object, the centralities now in the content, now in the teacher, now in the student, as well as the perspective of attention to pragmatic life, which ensures learning as a solution to problems.

The actors-network process involves an understanding of interaction as co-engineering in co-creation and co-transformation processes (simpoiesis), a process that is capable of bringing innovation to emerge, thus surpassing the theory of action and dualism, moving towards the connective act, to dualities, which instigates extra attention, duration, enhancing inventiveness, an impermanent and creative dimension, in a context that is symppoetic.

From this approach, Hybrid and Multimodal Learning and Living Spaces emerge, which are configured by the connective act between the human, the territories, the biodiversities, the objects, the data, the algorithms, that is, everything that can be connected today to the internet, enabling the transformation in a recursive way (in living and coexisting everyday) and the invention. We adopted the inventive PAG methodology (SCHLEMMER, 2018), associated with the coupling approach for the development of AA-EAMD.

### 3. The pandemic as problematization and the didactic design of AA-EAMD

The didactic design of AA-EAMD was inspired by the cartographic method of research-intervention (PASSOS; KASTRUP; ESCÓSSIA, 2009), as an interventionist pedagogical practice and developed from the inventive PAG methodology (SCHLEMMER, 2018), in the context of the construction of hybrid and multimodal living and learning space



in the context of an OnLIFE education.

This design was developed in the first half of 2020, in 19 meetings (4 synchronous online and 15 asynchronous online), based on the appropriation of the Canvas-UNISINOS platform, Google technologies, Facebook, WhatsApp, QR Codes, RA etc. At Canvas, the meetings were organized per week in: meeting activities and study material. In the activities of the meeting, guidelines and missions to be developed throughout the week were posted. Each meeting was part of a trail that comprised the AA route. In study material, there were texts, videos and other elements necessary for the development of the activities of the meeting.

The process of monitoring and evaluating students' learning at AA-EAMD followed the methodological design inspired by the cartographic method of research-intervention as an interventionist pedagogical practice. In this process, the following were considered: publications in the travel diaries, interactions in the forums, the elaboration of theoretical reviews and the development of PAG.

The evaluation involved the following dimensions:

- diagnostic evaluation, consisting of two forms (1 - experience with TD, access to the network and understandings about teaching and learning and 2 - experience with games and understanding about gamification);
- procedural assessment, prioritizing the understanding and formative character in monitoring the learning process of each student and group of students, when carrying out their journey;
- student's written self-assessment of his learning and performance in the PAG;
- evaluation of the Clan (groups), by peers, in writing, on the performance of colleagues during the process of building the PAG.

AA-EAMD started on March 2, asynchronously, and the students answered questions present in the two forms of diagnostic evaluation, as previously presented. From the answers, it was possible to understand

the students' context, their previous knowledge, providing elements for the initial development of AA. With regard to what students understood as teaching and learning in the digital world, it was possible to verify the view that this seemed to be a world outside them, something apart, dissociated from the experiences they had with TD that, according to the answers, happened daily, involving primarily social media and Microsoft Office. All students had access to the internet.

Regarding students' understanding of games and gamification, games appeared as a hobby, a tool, a hobby to motivate learning. Some also saw gambling as a way of solving problems, with goals and ways to connect people. Most of the students had contact with analog games and a smaller part with digital games. Regarding gamification, it was found that students understood games and gamification as something unique and that “served” to make classes more attractive. Most students reported that they had not used games to think about the development of areas of knowledge, but that they wished to learn.

To develop such concepts in AA, a narrative<sup>7</sup>, To develop such concepts in AA, a narrative was launched, called A Jornada, which, based on the stories mentioned in the previous section, told the forging of three rings that connected the world of elves (understood as our partners at the Open University of Portugal (UAb), skilled archers, specialists in long-range attacks), magicians (understood as all teachers, beings full of wisdom and courage) and objects (understood as technologies, non-human objects capable of connecting everyone). The narrative tells that these rings were lost, causing the three worlds to stop connecting, until one day, representatives from each of the worlds got together and went on a journey to find the rings, thus instigating students to venturing along the route, to develop their PAGs based on this problematization.

In the second week, the physical meeting at the university took place, with the participation of students, the teacher, the doctoral student, the Scientific Initiation scholarship holders and Prof. Dr. José Antônio Marques Moreira, from UAb. The objective was to discuss the AA-EAMD

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<sup>7</sup> Link of the narrative - Part 1: [https://youtu.be/aHIL\\_bmlxdk](https://youtu.be/aHIL_bmlxdk). Accessed on: 29 mar. 2021.

proposal and the main concepts on the subject, as well as to present the first part of the narrative *The Journey*, inspired by the works *The Lord of the Rings*, *Alice in Wonderland* and *Matrix*, conceived and produced in the form video, by the professor, doctoral student and Scientific Initiation scholarship holder. The video narrative portrays the path that the characters would take and invites students to join in the journey in search of the rings that connect everyone. From that moment on, the students started the development of Track 1 of the day, with the mission of creating clans, composed of three members, naming them and building a visual identity. The development of this mission took place in the WhatsApp Group, in the Facebook<sup>8</sup> group and in Google Drive (creation of a folder per clan, shared, etc.). The objective of each clan was, from the interactions with the readings of the first and second weeks, from the discussions in the physical meeting and from the video of the narrative, to look for clues to create a PAG. Texts that addressed the concepts of gamification and PAG were made available. The discussion of the readings extended through the forum on the Canvas-UNISINOS platform, giving rise to the articulation of the concepts of game, gamification and education in the context of the elaboration of PAG. Due to the pandemic, the face-to-face classes at the university were suspended, and the other physical face-to-face meetings that were scheduled for evaluation, were held synchronously, in the online modality.

In this sense, the themes addressed in the academic activity, the learning spaces and the pedagogical practices needed to be re-discussed and rethought in the face of a problematization that the present world posed for education, that is, the pandemic, and, with it, the need to physical distance.

The third week was designed to establish relationships between theory, experience as a student and pedagogical practice. The activities involved missions that instigated students to look for clues in the study materials to assist in the development of PAGs in the clans and publish in the forum space. In this context, there was a discussion of concepts related to TD, hybridity, multimodality, gamification and learning

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<sup>8</sup> Available at: <https://www.facebook.com/groups/266155810161702/>. Accessed on: 29 mar. 2021.

projects. The idea, initially proposed in the second week, was for students to develop PAG in partnership with schools, in the physical classroom environment. With the pandemic, a new context was established, since schools were also suspended from classes.

The fourth week, due to the changes caused by the Covid-19 pandemic, demanded a synchronous meeting, in order to be able to discuss the present situation and reorganize the objectives. The activities involved the beginning of Track 2, with a web conference, in which it was defined that, even with the suspension of classes in schools, the objective of building a PAG would be maintained; now, the intention would be to help teachers and schools to maintain the connection with students due to the pandemic, as well as to guide parents. So, the clans had the mission to identify a school, a group of children, parents and teachers to develop the PAG. In the impossibility of carrying out this mission, the clans could elaborate their projects, even so, to, at another time, develop them in the educational context for which they were designed.

In this meeting, the concepts of gamification and PAG were deepened, based on the reticular, connective and atopic epistemology, so that students could take ownership of this approach and create challenging learning spaces in a modality that, due to the pandemic, was structured, if only online. Thus, the project would emerge from the concerns and disturbances that that context of physical detachment was imposing. It would be necessary to read the daily routine and seek to identify problems that could be worked on from the development of a gamified process, so that, in the face of an uncertain context, the formulation of problems emerged which, in the perspective of the invention brought by Kastrup (2010;2015), would bring the experience of problematization and agency in the PAG.

In the interactions in the forums and in the WhatsApp and Facebook group, the perspectives of gamification as persuasion and empowerment were discussed. The challenge was to create PAG from the perspective of group empowerment, from elements such as narrative, challenges, missions, clues, as opposed to a perspective of gamification as persuasion, based on an empiricist conception that encourages competition with a reward system based on PBL (score, awards and ranking board).

In the fifth and sixth weeks, the activities involved Track 3, in which each clan had the mission of continuing the preparation of the PAGs and recording the process in the journey diary. At that moment, the second part of the narrative A Jornada was made available<sup>9</sup>. In it, magicians, archers and objects that went in search of the ring find the White Rabbit from the story Alice in Wonderland and they fell into the hole of the den, where they witnessed the dialogue of Morpheus and Neo in Matrix about choosing between taking the blue pill or the red one. The group decided to continue the journey and get out of the hole; however, when he found the way out, the world was no longer the same. The group found a world suspended in time, with empty spaces, and understood that another character began to inhabit the narrative: a biological actor, a virus.

Thus, the students evidenced that they began to understand the dialogue they had seen previously, in which Morpheus said that "Often, we are so at ease and so immersed in the reality that we inhabit, that we do the same things without questioning ourselves". The Magi, then, after reflecting, said: "We were abruptly transported to this new environment. Our previous habits no longer serve us. There is a tension between our previous knowledge and this present experience. We need to force ourselves to think, learn and build a new way of living in this world ". And the objects added: "Perhaps, it doesn't have to be between choosing the blue or red path. We do not need to discard what we already know or what we already carry in our history. We can be more AND than OR: AGGREGATE instead of REPLACE. More than ever, we need to connect ”.

Following the narrative, real images show the connections that humans needed to make to live in a pandemic world, instigating them to the following reflection: "We are facing an inventive learning situation, which requires us to do much more than solve problems, it implies problematization, caused by the world, forcing us to think. This is the time for the invention of problems!"

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<sup>9</sup> Link - Narrative Part 2 - <https://youtu.be/M3vYQ9xk6CQ>. Accessed on: 29 mar. 2021.

So, in the scope of activities, as a proposal for the continuation of Track 3, the mission was to elaborate and post on the forum a reflection on the first two parts of the narrative, the learning path followed and the experience and coexistence in a world that is not given, but, rather, in constant tension and uncertainty.

The seventh and eighth weeks consisted of organizing the PAGs for presentation in Grade A, involving the pre-concept and concept stages, contemplating, among others, the context, the problem, the initial project proposal, the appropriation of TD and the critical positioning on the topic.

In the ninth and tenth weeks, synchronously, by web conference, each clan presented its PAG, followed by a discussion on the relationship with the current context, the necessary adjustments and corrections of routes along the route, in order to qualify the proposal. In this stage, the clans evaluated the work in the group and performed the self-assessment, according to established criteria.

In the eleventh, twelfth and thirteenth weeks, the activities involved the following missions: development, monitoring and evaluation of the GWP. During these periods, the students kept the files of the travel diary, the games framework and the gamified learning project updated for the reading and the contribution of the teachers. In addition, in interactions via WhatsApp, questions, doubts and ideas were constantly discussed.

In the fourteenth and fifteenth weeks, the activities were aimed at closing the projects. The sixteenth and seventeenth weeks took place synchronously, via web conferencing, and were dedicated to Grade B, in which each clan presented the stage of development of the PAGs, the last one present in the framework, followed by a discussion on final adjustments. The clans assessed the work in the group, performed the self-assessment, as well as assessed the AA-EAMD.

In the eighteenth week, the evaluation was communicated, and in the nineteenth week, a discussion about the learning path followed in the AA-EAMD was carried out. The first part of the narrative A Jornada

was presented, followed by the second part and, finally, the third, and last, part of the narrative<sup>10</sup>: “And the world is no longer the same: the hyperconnected reality has hybridized the biological, physical and digital world”. The images of the students' path during the AA that appeared were: images before the pandemic, group interactions via WhatsApp, forums, web conferences, the presentation of the projects, mixed with the path of the magicians, elves and objects in a world tensioned by the viruses and the forms of connection that needed to be forged. After the presentation of the three parts, there was a moment of closing the discipline, in which the connections made were established. The three parts of the narrative put everyone in a network, connected (physical, digital, biological world), ending with the proposal that there is no single path to follow. The experience provided constant reflection, connection, network co-creation and inventiveness in the context of building new pedagogical practices in an OnLIFE education proposal.

Next, one of the PAGs entitled Discovering the paths of Jacobina stands out: a gamified tour, which can be accessed via the website produced by students of academic activity.<sup>11</sup>

**Figure 1 - PAG visual identity Discovering Jacobina's paths: a gamified tour**



Source: Prepared by the authors.

<sup>10</sup> Link - narrative Parte 3 - <https://youtu.be/aSxe6YExCN4>. Accessed on: 19 mar. 2021.

<sup>11</sup> Available at: <https://caminhosdejacobina.wixsite.com/passeiogamificado>. Accessed on: 29 mar. 2021.

## Chart I -PAG Discovering Jacobina's paths: a gamified tour<sup>54</sup>

<p><b>Theme:</b> Redefinition of the Caminhos de Jacobina promenade: gamification as an enhancer of teaching and learning processes</p>
<p><b>Main goal:</b> Promote a digital space for learning the history of Sapiranga / RS, specifically the Muckers Revolt, through the gamification of the Caminhos de Jacobina tour</p>
<p><b>Problems:</b> How to enhance the process of teaching and learning the history of Sapiranga / RS, through gamification, within the scope of students from the municipal network in times of physical isolation due to the Covid-19 pandemic?</p>
<p><b>Practice subjects:</b> 5th grade elementary school students and teachers and the community in general.</p>
<p><b>Gamified Learning Project:</b> Considering the curricular organization of the municipality of Sapiranga / RS (city where the project is located), which establishes the teaching of sapiranguense history through the Muckers Revolt, it is intended to provide teachers and students of the network with a new proposal for teaching and learning history and the geography of the municipality.</p> <p>The proposal is inspired by the mechanics and dynamics of the popular game "treasure hunt", in which players go in search of clues to reach their final goal. The adaptation of the Caminhos de Jacobina tour to an online version provides that players can explore the city and visit, from Google Maps / Street View, the sights that make up the tour. As players explore these locations, they also learn about their relevance to the history of Sapiranga / RS, more specifically about the role of these locations in the Muckers Revolt.</p> <p>Each historical point of the tour refers to a phase of the game. Such historical points will be accessed via augmented reality QR Codes. The player will be able to explore the following historical points of the city of Sapiranga / RS: the Municipal Museum Adolfo Evaldo Lindenmeyer, the Jacobina Colony, the statue of Colonel Genuíno Sampaio, the Morro da Pedra Branca, the tomb of the colonists in the Amaral Ribeiro cemetery, the Jacobina Cross and Morro Ferrabraz.</p>
<p><b>Digital technologies:</b> Google Maps, Google Street View, <a href="https://studio.gometa.io/">https://studio.gometa.io/</a> Platform to create augmented reality QR Codes, Metaverse app to read AR QR codes.</p>

Source: Prepared by the authors.

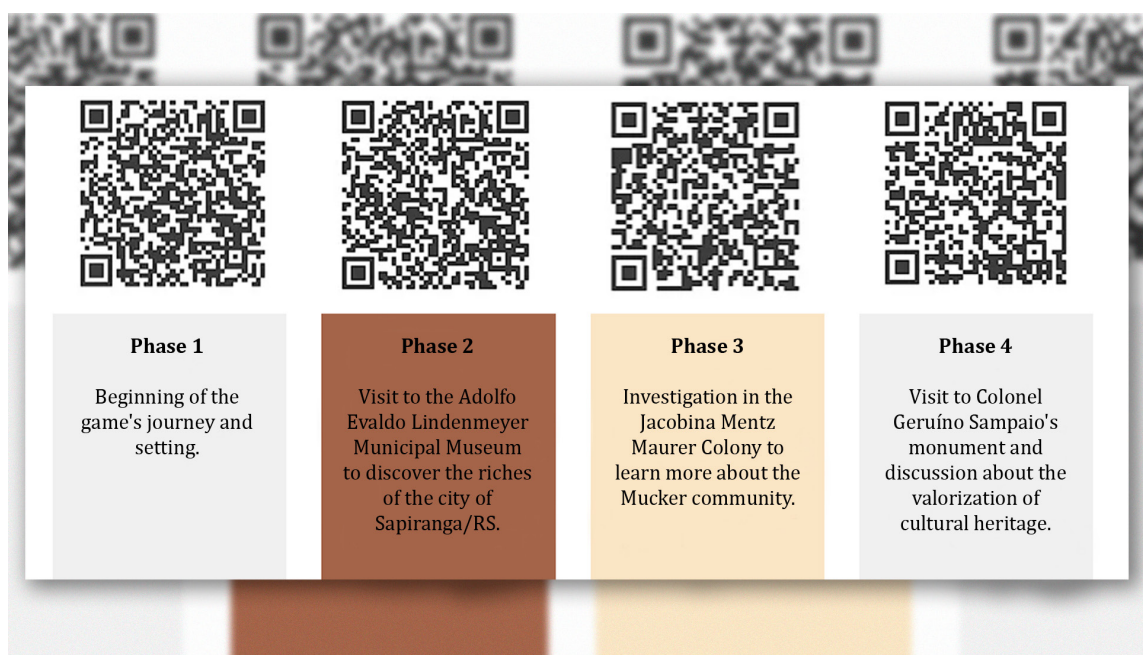


**Figure 2 - PAG map Discovering Jacobina's paths: a gamified tour**



Source: Prepared by the authors.

**Figure 3 - First stages of the game Discovering the Paths of Jacobina: a gamified tour**



Source: Prepared by the authors.

The other PAGs developed by students during AA-EAMD are described in the table below.

**Chart 2 - PAG developed during AA**

Title	Main goal
Be your own healthy eating heroine	To encourage children about the importance of good food and its benefits for life, in addition to showing how it can interfere with good learning and help with literacy.
Building stories	Analyze the influence of the implementation of Digital Technologies in a gamified way in the teaching of the Portuguese Language for students of the 5th year of elementary school, focused on the creation of stories.
Learn while playing	Provide activities that promote the development of reading, work on the importance of sharing and sharing things with colleagues and thinking about the other. Create dynamic activities, through gamification, in which the student can have fun learning.
Quarantine studies	Assist a Portuguese teacher with activities for classes during this period of social isolation. Present exercises / activities for the quarter using Instagram technology, using stories.
Sunflower Quitanda	Develop mathematical elements linked to the context of shopping in the supermarket, to assist in the formation of a critical and financially responsible consumer.
Memory QR	Assist students in the word classification process, presenting the content in a more playful way, different from what they are used to, thus developing socio-emotional skills, bringing the technology present in everyday life to the classroom, also in order to bring together the two realities in which they are accustomed.
“Quarantining” - a playful way to take advantage of the quarantine	Use of different Digital Technologies for sharing and interacting with parents and family, about the suggestion of playful and dynamic activities that involve families during the period of social distance.
The endless cycle	Develop, through digital culture, knowledge about the sciences, specifically about the simple food chain.
Digital learning: starting from the basics in quarantine	Assist all undergraduate students, through basic and simple posts and videos, focusing on the needs of use / appropriation of TD for the development of emergency remote education.

Source: Prepared by the authors.

As can be seen from the previous figures and tables, the PAGs covered different areas such as history, geography, natural sciences, literacy, Portuguese and mathematics. There was a PAG for parents, with the objective of guiding interaction with their children during the period of suspension from classes and, consequently, increasing the period at home, as well as a project aimed at undergraduate students, with the objective of assisting them to interact in the universe of emergency remote education.

## 4. Final considerations

AA-EAMD's main objective is to create spaces for learning and digital emancipation capable of providing the development of theoretical-methodological stance and technological knowledge that favor the integration of different TD in the construction of knowledge. We sought to reflect on the use / appropriation / coupling as an agency of these technologies for human and social development in the space of basic education and EJA. In this context, PAGs were developed.

The students, organized in clans, co-created PAG, bringing elements of games (gamification) to develop areas of knowledge (non-game context), in which human actors (teachers, students, parents) and non-human actors (technologies, content and different spaces), based on the reticular, connective and atopic epistemological assumption.

During the development of AA, it was possible to understand how the didactic design built instigated students to broaden their understanding of the context of games and gamification, as well as TD as appropriation / coupling. Each PAG brought the moment of travel of these students and, in the exchanges, it was possible to problematize issues related to living in teaching and learning in a network architecture.

Likewise, it was possible to broaden the understanding of how to develop learning situations capable of enabling an AA (discipline) to be configured as a space for coexistence and learning. This is constituted from a space that is the teacher's own, in the interaction with the students' own spaces, which are transferred, in a process of constant

permeability, both co-learning and co-authoring. Thus, there was the possibility of transforming both in the coexistence, originating in the collaborative and cooperative construction of the process.

It also made it possible, depending on the course developed, to deepen and evolve the didactic design for the next editions of AA-EAMD, provided by the articulation between: 1) the cartography of the pedagogical practice developed; 2) the return of constant evaluations, carried out by students<sup>12</sup>; 3) the teacher's reflections on the developed practice - carried out at the end of each meeting with the students; 4) the discussions at the meetings of the research practices with the master's and doctoral students<sup>13</sup>; 5) the theoretical and methodological deepening. In this context, we highlight the contribution of reticular, connective and atopic epistemology, developed by Di Felice (2018), and of OnLIFE education, presented by Moreira and Schlemmer (2020) and Schlemmer, Di Felice and Serra (2020).

It was possible to show, with regard to the training of students, a greater engagement in the teaching and learning process, seeking to identify and make it possible to understand, from the critical reading of everyday life, problems that could be developed from a gamified process, in the context of a world in a pandemic, which generated new pedagogical practices in the context of basic education.

An impact of the formation of students' teaching practice was caused due to their awareness of learning - which is significant for the transformation of pedagogical practices, since the subject starts to differentiate between: 1) "use of "certain DT in education X the meaning of DT in the learning process, which enables the creation of teaching and learning situations, in which the subjects operate with these technologies, experiencing them in the construction of experiences that enable the meaning in the learning process; 2) the "transmission of content" X the

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<sup>12</sup> Students weekly assess AA and the work done by the teacher, with the aim of correcting directions.

<sup>13</sup> Research practice is a curricular activity of the UNISINOS Graduate Program in Education, in this case, developed in the context of the Digital Education Research Group GPe-dU UNISINOS / CNPq, linked to the Education, Development and Technologies research line, from responsible for the development of this project is coordinator.

construction of knowledge; 3) the “application” of a methodology X the development of a methodology, 4) the “teaching” X the construction of learning spaces.

Therefore, ways of thinking, based on the context of suspension of classes, imposed by the need for physical distance, were problematized, uncomfortable, tensioning previous knowledge with the disturbances of the present world, in order to rethink the concept of class and classroom. This led to the emergence of an understanding of the need to co-create spaces for living and learning in a networked architecture, based on reflection on their own learning process.

In addition, it was possible to understand how games and gamification can compose innovative pedagogical methodologies and practices, which value multiple social spaces as spaces for the construction of knowledge. Therefore, it is necessary to foster a discussion on the need to reconfigure methodologies, practices and curricula, as well as how to organize them in time and space, based on everyday problems, capable of integrating different areas of knowledge.

Thus, with regard to the problem / motivation that gave rise to this article, it is possible to say that: a) the daily teaching experience in higher education has evidenced the need to overcome dualisms and centralities; b) the didactic design of the discipline, contributed to overcoming the gap between the pedagogical practices developed in higher education and the pedagogical practices developed in basic education, bringing them closer together; c) there was a significant increase in terms of understanding the potential of games and gamification for education, especially when such games are articulated from the perspective of the inventive PAG methodology; d) internationalization at home was understood to enhance the teaching and learning processes, enabling the understanding of cultural and educational realities in other countries, made possible by online interaction with foreign teacher-researchers; e) there was an expansion in the understanding of the potential of hybridity for the constitution of innovation ecosystems in education (A CIDADE ..., 2021), provided by the visibility of networks of networks that are constituted by connective acts between different human entities (teachers and students) from different levels of education, people

from the community, etc.) and non-human (technologies, technique, information, different spaces, etc.).

Thus, with regard to the objectives, it is possible to say that the need for physical isolation, caused by the pandemic, evidenced the need to rethink education, based on the problematizations of the present world, which instigates inventiveness. The development of inventive methodologies, such as the PAG, contributed significantly to the construction of knowledge experiences in different contexts and with different actors involved in education, favoring the emergence of an OnLIFE education.

The development of the proposal based on a reticular, connective and atopic epistemology potentiated the articulation between research (since the development of AA-EAMD was in the context of research), training in the strict sense (through the participation of doctoral students in the realization of teaching internship), initial training (undergraduate students), pedagogical practice developed in basic education (articulation with teachers and students in this teaching modality) and non-formal education spaces (NGO, community), in addition to promoting internationalization at home .

Finally, it is important to note that the journey experienced at AA-EAMD initiated a movement that instigates the transition from the act of teaching and learning in classrooms to a logic that understands that teaching and learning occur in the connective act, in the context of a network architecture. This promotes co-engineering between different human and non-human entities, in a process of co-production and sharing, overcoming the educational paradigm of dualisms and centralities for the emergence of connective and atopic reticular epistemologies in an OnLIFE education process.

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