

The Adventure of Learning with Role Playing Game Creation: An experience with students from Integrated Technical High School

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Abstract

This article aims to describe and analyze an experience developed from the workshop: "The Adventure of Learning with the Creation of Role-Playing Games (RPG)", promoted under the Research Project "Robotics, Computational Thinking and Digital Technologies in Basic Education", developed between November 2019 and October 2022, from the Universal Call MCTIC/CNPq. The workshop's target audience included students from Integrated Technical High School. At the beginning of the workshop, the students answered a diagnostic questionnaire to identify the participants' prior knowledge for subsequent awareness of the proposed theme. After offering these theoretical and practical subsidies, the students were divided into three teams to experience the Tabletop RPG and create an RPG Maker. The workshop was enriching for the participants and the RPG proved to be a resource with potential to assist the meaningful learning process.

Keywords: Role Playing Game, Technical Education, Games, Students

1. Introduction

Games are an integral part in the development of the human being. As stated by Huizinga (2019), games enable the formation of the individual, stimulating the same, bringing meaning and senses in their actions. These ideas reinforce the importance of gamification by enabling the relevance and seriousness of understanding games in environments that are not games. In Huizinga's conceptions it is possible to recover the essence of man using the game. For the author:

The very existence of play is a permanent confirmation of the supralogical nature of the human situation. If animals are capable of play, it is because they are something more than simple mechanical beings. If we play and play, and are aware of it, it is because we are more than mere rational beings, for play is irrational (Huizinga, 2019, p. 4).

Thus, it is believed that games encourage and enable social relationships that dialogue and promote meaningful learning. In this sense, the way of thinking about learning changes, which in turn changes the methodological approaches to be worked on by the teacher. Given this demand, the relevance of active and immersive methodologies is notorious, because they have, according to Moran (2018) and Cavalcanti (2020), the potential to awaken the curiosity of students, placing them at the center of the educational processes and bringing new elements that have not yet been considered by the teacher.

Active methodologies are teaching strategies focused on the effective participation of students in the construction of the learning process, in a flexible, interconnected and hybrid way. Active methodologies, in a connected and digital world, express themselves through hybrid models, with many possible combinations. The Junction of active methodologies with flexible and hybrid models brings important contributions to the design of current solutions for today's learners (Bacich & Moran, 2018, P. 4).

In this sense, the activity of playing games needs to be considered as a support in education, favoring the student to develop skills and competencies to advance in their studies. According to Prensky (2012), learning becomes more interactive, active, and immersive when the educator considers the potential of games, since they are part of the student's everyday life.

Active and immersive methodology contributes to the development of many skills, so they should not be used only as a support in basic education. This type of resource can and should be part of the educational process. Because the activities developed through active methodologies provide the student with learning moments that promote protagonism in the teaching and learning process, encouraging the growth of their potential and characteristics. Thus, based on active and immersive methodologies, such as gamification, the teacher can, with common sense and creativity, create challenging activities that motivate students in a spontaneous and voluntary way.

In this scenario, some educational researchers indicate the role-playing game as a resource in the teaching and learning process. It is a tool that makes teaching more attractive and motivating, due to the playfulness, stimulating the development of reasoning, creativity, empathy, being a subsidy for the active and immersive methodology, in the context of games (Riyis, 2018; Cardoso, 2008; Cavalcanti, 2018).

RPG is a role-playing game, in which the player called the "master" narrates a story that is interpreted by the other players. This traditional version of the game is called a "Tabletop RPG" (Riyis, 2018). With the popularization of the traditional game and the advancement of technology, other versions of RPGs have been created, among them RPG Maker. Specifically, it is a program that already comes with features for the user to assemble and create their own digital RPG game, in this style of game, only one player can manipulate the characters.

From this, this article presents as main objective to describe and analyze, in general, an experience developed from a workshop entitled: "The Adventure of Learning with the Creation of

RPG Games", promoted under the Research Project "Robotics, Computational Thinking and Digital Technologies in Basic Education: Potentiating Learning and Skills in Processes of Resignification of Science Teaching", developed between November 2019 and October 2022, from the MCTIC/CNPq Universal Call - Edictal nº 05/2019 - Science in School Program - Science Teaching in Basic Education, with support from Uninove/SP-Brazil.

To this end, we initially present the theoretical framework, the experience with emphasis on the planning, diagnosis, and development of the workshop, the discussion of the results, ending with the final considerations.

1.1 Theoretical Framework

1.1.1 Games Applied to Education: History and Typologies

In the 21st century, education, taking into account the rapid transformations established by technological advancement, is directed towards the need for improvement of educational projects and change in the teaching attitude, with the aim of training for the needs of contemporary society and the world of work. In this sense, active learning methodologies are an alternative to respond to the current challenges in education.

Active learning should be considered as a qualified pedagogical option and subsidy for the learner, providing autonomy, the ability to solve problems, and the construction of equal rights.

Innovating in education is a natural ability of the human being, however, due to the constant growth of information and technology, innovation is a highly valued aspect today. Innovation in educational practice requires systematization and planning, innovating requires a new educational practice, and, moreover, motivates students.

In view of this, the innovator John Dewey understood education as a process that accompanies the individual's life (Dewey, 1959), forming the human being, his emancipation, and his knowledge through empirical and cognitive knowledge, which enhances awareness, in the construction and reconstruction of learning.

Similar are the contributions of the New School and its convergent thinking with the ideas of Paulo Freire (1997), in relation to dialogical, participatory, and awareness-raising teaching, which is built through the questioning of reality, in its understanding and change. From the perspective of teaching work using innovative methodologies such as gamification, pedagogical work is defined as the act of creating interest in the student and allowing him autonomy of thought, overcoming the simple transmission of knowledge.

Innovations in pedagogical practices, such as the creation of games, demand reflection on the methodology of teaching work, considering that the student should be the center of the teaching and learning process, the teacher can and should consider the active learning processes and apply them in his pedagogical work.

According to Bacich and Moran (2018), recent research in education, psychology, and neuroscience testify that the process of acquiring knowledge is unique and different for each human being. Games and Gamification, involve an elaboration of the teaching and learning method, highlighting the various ways in which they can be involved in this process, so that the subject can learn better, at their own pace, time, and style.

Thus, various game methodologies are strategically used in the classroom as important resources to guide reflection on the acquisition of meaningful knowledge. Therefore, the act of learning is active. According to Bacich (2018):

We learn actively from birth and throughout life, in open design processes, facing complex challenges, combining flexible and semi-structured tracks, in all fields (personal, professional, social) that broaden our perception, knowledge, and competencies for more

liberating and fulfilling choices. Life is a process of active learning, of facing increasingly complex challenges. (Bacich, 2018, p. 2).

In view of the above, facing challenges, combining areas and life situations that favor the construction of knowledge is active learning. It is an inherent process of the individual that begins at birth from concrete circumstances, which progressively will be generalized and expanded by the stages of living and by the accumulation of experiences, applying knowledge and skills in various situations, as in gamification through logical reasoning, to then intervene, transform and recreate reality.

The mechanisms and dynamics found in games work as motivation for the individual, for Busarello (2016):

Gamification is a system used to solve problems by raising and maintaining levels of engagement through stimulation of the individual's intrinsic motivation. It uses playful scenarios for simulation and exploration of phenomena with extrinsic objectives, supported by elements used and created in games (Busarello, 2016, p. 18).

Gamification is a very successful strategy, but it has limits because everyone has a different learning designer, which means that not everyone involved can engage in the process. However, the motivational factor is a predominant mark in the systematization of gamification, including possible answers to the modern demands of education and society.

Game thinking consists of thinking about an everyday problem or activity and converting it into an activity that contains the game elements (competition, cooperation, exploration, rewarding, storytelling). If there is one key word that could not be left out in our definition it is engagement. After all, it is the meta-explicit of gamified systems. Especially when the subject is learning at a time when facilitators, teachers, and lecturers vie for the attention of their learners with technology (Alves, 2015, p. 43).

Gamification can be carried out with the use of analog or physical materials, meaning that digital interfaces are not precisely necessary for its application. Knoll (2019) understands Gamification as a subclass of fun and games, there being the use of elements of games, such as aesthetics, design, and their norms and gratifications.

1.1.2 The Concept, Characteristics and Potentialities of Role-Playing Games for Learning and Skills Development

Teachers are faced with a challenge to draw the attention of young people in the school context, because students are continuously involved with video games and social networks (Cardoso, 2008). To overcome this challenge, some studies (Cardoso, 2008; Cavalcanti & Filatro, 2018; Jaques, 2021; Oliveira, 2013; Peixoto, 2011; Pool, 2021; Riyis, 2018; Schmit & Cainelli, 2010) highlight the use of Role-Playing Game (RPG), which basically consists of a character role-playing game, because it enables an active and immersive learning process. The articulation between the competencies and skills of the Common National Curricular Base (BNCC) for High School (Brasil, 2018), to the role-playing game, may favor pleasurable and engaged learning (Pool, 2021), making the student the protagonist of his learning. Given this, the Role Playing Game (RPG), constitutes a practice for many young people and adolescents.

Role Playing Games (RPGs) can be considered cooperative role-playing games, because they are role-playing games and because they follow the precepts of Cooperative Games, as there are no winners or losers, and all players have a common goal to achieve. Besides the cooperative issue, RPGs can be powerful allies in the educational environment, as a playful teaching strategy, in the development of reading and writing and oral and/or corporal expression (Riyis, 2018, p. 14).

Pool (2021) argues that the ubiquity of technology has created a space beyond the cultural sphere, leading individuals to an extension of the physical world, and for many, this space is a greater reality. Similarly, Terçariol et al. (2018) addresses that this technological experience, aids education, especially in pedagogical acts for educators who realize the need to work differently in the classroom filled with students who experience technology, games, and accelerated access to information. From Pool's (2021) perspective, RPGs are a learning resource, that is, a constructivist immersive methodology based on Resource Based Learning (RBL). Pais (2013) presents a conceptual framework about the ABR-RBL methodology:

This methodology implies a greater appropriation of the teaching-learning process by the students and the awareness that knowledge is something very personal that is built according to the individual learning pace and interests of each one of us. It is thus of great relevance in terms of recognizing the teaching-learning process as something unique and unrepeatable and whose appropriation by the learner is essential for a work that is intended to be deep and systematic (Pais, 2013, p. 31).

Thus, ABR-RBL is based on the principle that learners will be engaged individually for content and methods that best match their personal abilities of understanding and styles that characterize their learning.

Due to the structure and dynamics of RPG, Pool (2021) admits that in the educational area, this tool constitutes a potential for ABR-RBL. Considering that games are part of human culture (Huizinga, 2014) and the daily life of today's high school students.

By investigating the mechanics of role-playing games, we offer an alternative way to understand and propose new understandings about creative educational practices that are considered in teacher training. That is, that from the habit of "playing", we can find elements to support the learning of students, through the construction of creative challenges organized by their teachers, bringing together the leisure habits of students and teachers to establish a space in school, where the idea of learning while having fun is reinforced (Pool, 2021, p. 10).

High school students are young people between the ages of 14 and 18 who are studying in the last stage of basic education. Therefore, gamification in this school segment is of great relevance since this audience is classified by Prensky (2012) as digital natives. In the current high school context, students are teenagers who were born after the 2000s, and spend much of their time surfing the Internet and are familiar with technological media, as indicated by research (Nadal et al., 2016). Students are inserted and engaged with the digital and entertainment culture, immersed in cyberculture with the use of cell phones, internet, and digital games (Alves, 2014).

Given this, the Common National Curricular Base (BNCC) for High School, directs to perspectives that favor autonomy, engagement, and the central role of the student in the learning process. In the set of its general skills and abilities, it is indicated the life project, reading the world around them and the deepening of the learning from elementary school, fostering the autonomy of the student, so according to this document:

[...] It is up to high schools to contribute to the formation of critical and autonomous young people, understanding criticism as the informed understanding of natural and cultural phenomena, and autonomy as the ability to make informed and responsible decisions. To welcome youth, schools must provide experiences and intentional processes that guarantee them the necessary learning and promote situations in which respect for the human person and their rights are permanent (Brasil, 2018, p. 8).

The youth protagonism in digital education, which is a reality and a necessity, caused by the technological revolution at the end of the 20th century, is also considered by the BNCC. It is worth

mentioning that the concept of digital education is not explicit in this document, it is therefore implied and indirectly mentioned, as can be seen in the general competencies of Basic Education (Brasil, 2018).

If the prescription of the BNCC for high school integrated to technical education is protagonism, it becomes necessary to provide students with the opportunity to build an autonomous identity to face the demands of today's society.

In this sense, the workshop offered to students, "The Adventure of Learning with the creation of role-playing games", aimed to create an environment within the digital sphere, which enables the construction of student autonomy and their protagonism in the digital context.

In this way, the student, during the workshop, became responsible for his own learning, consciously assuming the successful and unsuccessful strategies, the weaknesses, and strengths of his own actions. Therefore, it was necessary to provide personalized, meaningful, active, and immersive learning, considering contemporary demands, without losing its formative character.

2. Method

2.1 The Experience: Planning, Diagnosis and Workshop Development

The experience presented in this article was developed from a workshop entitled: "The Adventure of Learning with the Creation of RPG Games". As target audience, the workshop had students from Integrated Technical High School linked to ETEC Poá and ETEC Bartolomeu Bueno da Silva - Anhanguera. From these schools, 43 students registered to participate in this workshop. However, 27 students participated in the workshop.

For the development of the workshop, weekly synchronous meetings were held using the Google Meet platform. It is worth mentioning that asynchronous contacts were also established through a group created by WhatsApp. The synchronous meetings took place weekly and lasted two hours.

At the beginning of the workshop, the students answered a diagnostic questionnaire, created on Google Forms, so that the training team could perceive the degree of prior knowledge of the participants and provide an opportunity to raise awareness about the proposed theme. In this questionnaire, the students were first asked about their age, gender, and level of education. Then, the questions were presented to identify which technologies young people had (tablet, notebook, desktop computer, smartphone, among others) and how they used these resources. They were also asked about the use of the internet, what purpose they use it for, and how much time they spend using it. Next, questions were presented about the role-playing game and the familiarity with this tool, and whether these experiences were pleasurable, and if the use of role-playing games could be a resource for learning, and if the game can help in school, ending with questions about the students' expectations about the workshop on the proposed theme. From the 27 answers recorded in this questionnaire, graphics were generated by the platform itself to collect data, which were analyzed and shown below.

Regarding the age range, the workshop participants indicated the ages of 15 to 18 years, showing that the participants can be classified in the segment composed by teenagers. As understood by Prensky (2012) these can be considered as "digital natives", i.e., individuals immersed in the digital culture. In addition, at this moment the students pointed out the schools where they studied. It was noticed that all participants were linked to a State Technical School of São Paulo (ETEC). Most of the participants were from ETEC Bartolomeu Bueno da Silva, the other participants from ETEC Poá. Both technical schools are in regions of greater São Paulo.

As for access to digital technologies for personal use, the students highlighted the smartphone, combined with wireless network technology (WI-FI), as shown in Table 1.

Table 1. Technology owned by students for personal use.

Technology	N	% of students who have
Wi-fi	23	85,19%
Smartphones	22	81,48%
notebook	14	51,85%
desktop	14	51,85%
cell phone	5	18,52%
kindle	1	3,70%
tablet	0	0,00%

Source: Authors (2023).

Next, regarding the opportunity to learn with games, the majority (63%) stated that they had had experience learning with games. On the other hand, 37% of the students indicated that they had not yet had this experience.

When asked about their knowledge of a role-playing game, 63% of the students indicated that they "yes" knew it, while 37% of the students indicated that they did not know it.

For the respondents who said they knew about RPGs, that is, who answered YES to the above question, they were asked to tell a little about how they got to know the RPG game and what their previous experience was like. Below are some examples of answers given to this question:

Well, I started playing games when I was about 7 or 8 years old. I had a reasonable computer that supported several games, most of them being role-playing games. I used to play more unknown games and had some cool experiences!

I never played tabletop RPG. I really got to know them after the Cellbit RPG. But I've always played a digital RPG and I didn't know, I discovered several in ads, advertisements or even looking for something in the play store.

I played with my friends in discord, but I couldn't participate much because of the schedule.

I knew a little when I was 10, playing Dark Souls, Skyrim, Assassin's Creed, among others, but I liked it a lot, I found the whole story interesting, all the logic behind the game, it is very exciting to want to know the whole story that holds you in the game leaving you addicted and anxious about the end.

I always loved computer games, since the age of 4 years, several genres, including RPG, one of the RPG games I played more in my childhood, which unfortunately is little known and has already gone off the air, is Gunz: The Duel, a game in third person hack slash style, but that already played and still playing several RPG games, for example Genshin Impact, which is what currently play more often.

I met through friends, but I have been following the table RPGs narrated online and in live stream as "paranormal order" or "sacrament".

I got to know RPG through social media (Youtube) and gaming platforms, besides an activity done in class with my teacher.

I met RPG games when I was 8 years old, and since then I have continued in this world that fascinates me.

I met the RPG through a friend who follows the campaign conducted by the streamer Cellbit.

I already played some simple RPGs, and then I had the idea to invite my friends to play with me. We liked it more and more, creating ideas, new campaigns and new characters, and with time we added more players.

I met it about 5 or 6 years ago, from pokémon, and I liked it a lot, it is very interesting.

I met looking for a game to play, and the experience is great.

I just know it; I haven't had the experience of playing any RPG game yet.

It was noticed, from the statements above, that some students knew the RPG previously, in entertainment situations and that this taste for games, in general, contributed to, in the adolescent phase, they continued to explore and learn more about the RPG. They even cited examples of RPG games they used as children, as in the case of this line: "I got to know a little when I was 10, playing Dark Souls, Skyrim, Assassin's Creed, among others [...]"; "one of the RPG games I played most in my childhood, which unfortunately is little known and has already gone offline, is Gunz: The Duel, a game in third person hack slash style, but outside this already played and still playing several RPG games, for example Genshin Impact, which is what currently play more often.

Based on the statements collected, it is possible to infer that previous experience in role-playing games creates a positive attitude in students towards the application of games in other spheres, such as learning in school. This positive attitude is evidenced when analyzing the answers to the question regarding the student's opinion about the possibility of using role-playing games as a learning tool. For 96.3% of the students who declared they knew RPG games, this can help in the teaching and learning processes.

Finally, in the diagnostic questionnaire, young people were asked to register their expectations about the workshop they were starting, and it became evident that the main expectation was to learn about games, especially RPGs, a resource that favors the teaching and learning process in an immersive methodology as proposed by the workshop.

From that point on, the weekly meetings were started. In the first meeting the history of RPGs was discussed in the 1970s in the United States of America, created by Gary Gygax and Dave Amerson, influenced by J. R. Tolkien's literary works such as "The Lord of the Rings" and "The Hobbit". It was explained to the students that RPG arrived in Brazil in the late 1980s, becoming popular in the early 2000s. They were shown how the game works, which consists in playing the role of a character, fictional or not, being directed by a narrator who creates the adventure, scenario, rules, puzzles, and even other characters for the interaction of the players, using a system with random results for the actions said by the players.

In another moment of the training, the RPG Maker platform was approached in a more in-depth way for the participants of the workshop, its tools and resources were demonstrated, as well as how it could be used in a notebook or desktop computer.

After providing these theoretical and practical subsidies, the students were divided into three groups. The tasks were divided as follows: one group was assigned to create a Tabletop RPG game, and the other two groups were assigned to create an RPG Maker. During the creation process, all groups were accompanied by the training team.

The task was to use one of the 17 Sustainable Development Goals (SDGs), as a guiding principle for creating the storyline and the game. The SDGs are part of the United Nations (UN) Agenda 2030, which was created in 2015, with the joint support of governments, companies, institutions, and civil society, seeking to ensure human rights, end social inequality, preserve the environment, and solve other challenges in our time.

The first team was named The Pickles by the participants, and its members chose to work with theme 4 of the SDG on Quality Education and Gender Equality. They were responsible for searching for information on the internet, videos/documentaries, books, and conducting interviews

on Google Forms with people from the community, and from that they created an RPG Maker. The Pickles team's proposal was a game made in RPG Maker, in which the main character ends up having her pet kitten stolen and goes on an adventure to try to get it back. Following the trail of hairballs left by the animal, she will have to solve school issues (from various subjects), with the theme of the SDGs to advance in the story.

The second team, named Dreamers, chose the theme of SDG number 13, about Global Climate Change, and decided that they would create a game on the RPG Maker platform, from research in different sources. The team's proposal was a game in RPG Maker, in which the world would be close to the limit of global warming and would have several problems. The character would have to travel around the world and avoid one by one the causes that would lead to the scenario, fighting "bosses" and completing quests.

The third team, called The Wizards, also chose to work with ODS number 13 and create a tabletop role-playing game, researching in specialized books and websites. The group created a tabletop role-playing game, in which the characters would be spies and would prevent a group of criminals from buying the Amazon, using skills from several areas of knowledge to solve puzzles using logical reasoning, map reading, communication, interpretation, creativity development, knowledge mobilization, protagonism, engagement, and teamwork.

Thus, the participants developed their projects on a weekly basis, answering questions and receiving pertinent information to develop the games. In this phase, each team created a WhatsApp group specifically for dialogue with the members. In addition, there was also a general group on WhatsApp for general guidance, sharing of guidelines, and clarification of doubts by the trainers, asynchronously.

In synchronous meetings, the workshop participants shared their ideas and received suggestions from the trainers and from their colleagues. In these moments, there was also support for the development of the games, as well as several guidelines, such as how to differentiate hacked and cracked games.

At the end of the workshop, the participants presented a prototype of the game developed by them for final adjustments.

The official presentation then took place on June 24, 2022 at the Interschool Science and Technology Fair held by the Research Group in Education, Technology and Digital Culture (GRUPETeC - CNPq/Uninove) in a partner school located in the eastern region of the city of São Paulo. With the accomplishment of this research it was possible to observe that the process of creating the role-playing game, in analog or digital version, favored learning, because it allowed, in a pleasurable way, the assimilation of knowledge and content covered in the games, as well as the characteristics of the RPG category game.

3. Discussion and Results

3.1 Students' Perceptions About The Fulfillment Of Their Expectations

The following are the students' dissertative responses regarding the projects they developed during the workshop. It should be noted that the following data were collected from a second questionnaire created in Google Forms, applied after the presentation of the projects at the Science and Technology Interschool Fair, mentioned above.

Each workshop participant responded succinctly about their learning from the project construction.

[...] The Save The Earth RPG, I learned many things, especially what is RPG itself.

[...] with the project, I was able to learn more about RPGs, both digital and tabletop.

The tabletop RPG, making stories and math.

Tabletop RPG, I had to study a lot about environmental impacts and how to prevent them to develop the project itself, and in the course of it I learned a lot about teamwork and coordination of people.

How Tabletop RPG can contribute to learning, because we improve our logic, problem solving, communication, and depending on the theme, more advanced things like history, geography, human relations.

What I learned was teamwork and development of creativity and interpretation.

It is considered, from the perceptions of the workshop participants, that the use of RPG as a pedagogical tool achieved satisfactory results. We observed a significant increase in the students' participatory behavior, referring to disinhibition and interaction. During the activities the students spontaneously started to do collaborative work, helping their peers, brainstorming, and debating ideas in order to reach a collective decision.

For the conclusion of the work, the students were asked about the difficulties in developing the project. Most students stated that they had no difficulties given the frequency of answers such as "I did not encounter difficulties in developing the project" or "no difficulties". Among those who stated that they had encountered difficulties in presenting the project, the most frequent factors were time and organization.

When asked how the limitations were overcome, the answers were: "I asked the trainers for help"; and in another case: "the help of my teammates helped me overcome the difficulties".

These answers refer to factors such as autonomy and participation. The workshop trainers started from a constructivist and Freirean educational basis, so that the trainees would exercise their autonomy in the learning process in the workshop, thus prioritizing an active learning method.

Active Methodologies are teaching strategies focused on the effective participation of students in the construction of the learning process, in a flexible, interconnected and hybrid way. Active Methodologies, in a connected and digital world, are expressed through hybrid teaching models, with many possible combinations. The junction of active methodologies with flexible and hybrid models brings important contributions to the design of current solutions for today's learners (Bacich & Moran 2018, p. 4).

Analyzing the participants' answers, one can also see that the degree of engagement and immersion of the participants can be considered satisfactory. Thus, the learning, in terms of results, exceeded what was planned and intended. Teaching and learning occurred through organized processes, together with open and informal processes, favoring differentiated ways of learning. According to Moran (2019):

In education, several types of blended or hybrid education take place: of knowledge and values, when we integrate several areas of knowledge (in the disciplinary model or not); of methodologies, with challenges, activities, projects, games, group and individual, collaborative, and personalized. We also talk about hybrid technologies, which integrate classroom activities with digital ones, and face-to-face activities with virtual ones. Hybrid can also be a more flexible curriculum, one that plans for what is most basic and fundamental for everyone while allowing for personalized pathways to meet the needs of each student (Moran, 2019, p. 28).

Contemporary educational methods also articulate the more formal teaching and learning process with informal, open, and networked education. This consists in substantiating and integrating different areas of knowledge and different learners, in different spaces and times. Moreover, it is also worth considering that the environment created with the construction of role-playing games can generate more motivation and fun in the teaching and learning process, as could be seen in the statements issued to the question: "Were the activities that were developed by you

and your colleagues, considering your participation in the Science and Technology Fair motivating and fun? Explain."

Yes, it was nice to interact and learn about other projects.

[...] We were very happy for the game and for the people who praised it!

[...] It showed me that despite everything there is always a way to overcome.

[I interacted with people from my class and met new people.

[...] it was a lot of fun to develop and work with the RPG Maker platform.

[...] it was something pleasant to do.

[...] were very cool and interesting, they addressed issues of extreme importance with a super good didactic to learn.

They were fun! The construction of the game, seeing this project, even though small, grow was very exciting, I am very proud to have made this game.

[...] in both workshops I had fun and learned a lot.

They were fun and attention-grabbing.

[...] all my team members had great interest and experience in tabletop RPGs, which made the development a lot of fun.

[...] creativity and interpretation were worked on.

[It showed that we have the potential to create something unique.

Unanimously, the workshop participants, when presenting their projects at the Science Fair, responded that the development of the project was fun and that the experience was enjoyable and provided greater interaction with classmates who were also in the workshop and others who were previously unknown.

It is also understood in some speeches that the tabletop RPG and RPG Maker provided engagement to the participants. One of the participants mentions that the members of the team in which he participated showed interest in the RPG game experience. Although the production of a role-playing game is not an integral part of the students' curriculum, i.e., of their recurring school year, even so, the game favored new knowledge due to its interdisciplinary aspect.

RPG is interdisciplinary. Why is it interdisciplinary? It is interdisciplinary by nature because RPG simulates life. When we play an RPG adventure, we are simulating life, even if it is a fantasy life, [...] we are simulating gestures, ways of speaking, and habits that relate to our life. And life is always interdisciplinary. Life is not specific [...]. At each step, we must deal with a series of knowledge from the most varied areas (Marcatto, 2004).

The proposed activity of creating a role-playing game allowed students to act as protagonists and develop autonomy, responsibility, creativity, and criticality throughout the process. At the end of the process, the students felt satisfied with the product they built. Therefore, learning through the creation of digital games, in this case RPGs, can be an important pedagogical tool.

Making an overview of the above, one can consider that the learning that took place during the workshop was significant. And this significance was built in a process composed of three movements: (i) individual construction, a situation in which the learner exercises his/her autonomy because he/she chooses his/her path; (ii) collective construction, in which the learner increases his/her learning by involving, interacting and sharing his/her knowledge, activities and productions with his/her peers and in a group with the support of the trainers; (iii) mediation, in which he/she learns with the mentoring of trainers and more experienced peers in different fields and activities.

As a caveat for applying role-playing games in teaching and learning processes, one should pay attention to the alignment between the proposed game and the learning objectives, because according to Cavalcanti and Filatro (2018):

Different types of RPGs are adopted in educational contexts as immersive methodologies that provide mental and/or physical engagement of players. The narrative, the characters, the scenarios, the possibility of decision making can be engaging for students but should only be

used by educators if they are articulated to well-defined learning objectives. (Cavalcanti & Filatro, 2018, p. 162).

The use of games tends to be challenging. The idea is not to use games as an end in themselves, but to incorporate the elements of game language into unconventional contexts for games, creating a gamified learning environment. In the present study it was found that this practice favored the motivation of the workshop participants to overcome challenges and excel. The trainers constantly provided feedback, favoring a formative evaluation, that is, throughout the process of building the product to be generated by the workshop participants.

4. Final Considerations

From the experience lived with the workshop "The Adventure of Learning with role-playing game construction", it is understood that educators and students need to change their perspective that the Role-Playing Game (RPG) is just a game for entertainment. The perspective on the application of role-playing games needs to be broadened to highlight its pedagogical potential for the development of student protagonism. In this sense, it was possible to verify with this experience that students and educators can build knowledge together so that teaching and learning can indeed contemplate innovative methodologies.

The practice described in this article, in general, was enriching for the students who participated in the workshop, from the planning process to the execution of the role-playing game, in physical and digital (RPG Maker) form, which favored the creation of stories and challenges.

Thus, as the main contribution of this study to the knowledge in pedagogy, it corroborates the statement that the role-playing game can be a resource with potentialities that help in the teaching and learning process, considering the context of the students immersed in the digital culture.

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