GAME TO STIMULATE CONSCIOUS CONSUMPTION: A PROPOSAL FOR TEACHING ENVIRONMENTAL AND SUSTAINABILITY

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Abstract: Gamification has proven to be an efficient teaching strategy to engage students in various topics, including the issues of environmental sustainability. The general objective of this work is to develop a dynamic, interactive and didactic game that can be applied in the classroom, in future classes, as well as in the SENAI CIMATEC institution, as a way of engagement and disseminating the themes of environment and sustainability. For this, scripts were built with the themes to be addressed, scenarios were built using the Vectr and Unity tools to create the game. It is expected to promote the engagement of students and employees in environmental and sustainability themes through the interaction in the game, which replicates CIMATEC scenarios and situations.

Keywords: gamification; environmental education, sustainability

JOGO PARA ESTIMULAR O CONSUMO CONSCIENTE: UMA PROPOSTA PARA ENSINO DE MEIO AMBIENTE E SUSTENTABILIDADE

Resumo: A gamificação têm se demonstrado uma estratégia eficiente para aprendizado e engajamento de alunos em diversas temáticas, incluindo a questão da sustentabilidade ambiental. O objetivo geral deste trabalho é desenvolver um *game* dinâmico, interativo e didático que poderá ser aplicado em sala de aula, nas futuras turmas, como também na instituição SENAI CIMATEC e empresas parceiras, como forma de incentivar e difundir as temáticas de meio ambiente e sustentabilidade. Para isto, foram construídos roteiros com os temas a serem abordados, e cenários empregando as ferramentas Vectr e Unity para criação do jogo. Espera-se propiciar o engajamento de alunos e colaboradores e aprendizado na temática de sustentabilidade ambiental através da interação no jogo, o qual replica cenários e situações do CIMATEC.

Palavras-chave: gamificação; educação ambiental; sustentabilidade.

1. INTRODUCTION

The concern with environmental issues and sustainable consumption has motivated educational institutions to looking for new educational strategies. In this context, environmental education emerges as an alternative to the dissemination of knowledge about environmental sustainability and should be aligned with the information that can develop awareness for environmental protection. In this sense, it is necessary to develop responsible conducts in the social, economic and environmental fields, through changes in attitudes and the understanding of the relationship that one should have with environmental issues. These transformations involve educational processes that are not only formal, but in various ways can develop awareness for environmental citizenship [1].

Digital technologies, with creative and emancipatory proposals, emerge as a playful means of knowledge dissemination since they are increasingly becoming auxiliary and important tools in the teaching and learning process. According to Moura, Moura, Azevedo and Tostes [2], we live in a context characterized by the rapid growth and popularization of Information and Communication Technologies ICTs, in which we can highlight the wide use of smartphones and applications, the popularly known APPs.

Thus, games for science teaching and scientific dissemination have proven to be an efficient strategy for the democratization of knowledge and promotion of greater appropriation of the concepts covered, as games offer a propitious, fun and stimulating environment for the assimilation of content in a spontaneous way, favouring voluntary learning and application of the knowledge acquired [3].

The general objective of this work is to develop a dynamic, interactive and didactic game that can be used in the classroom, in future classes, as well as in the SENAI CIMATEC institution, as a way of engagement and disseminating the themes of environment and sustainability.

2. METHODOLOGY

To develop the game scripts, meetings were held between the team, composed of teachers and students and former students of the subject Environment and Sustainability.

A brainstorming session was carried out for the ideation of the game, scenarios and themes to be addressed aiming at environmental education for sustainability.

Three scenarios and phases were proposed, the coin "susten", and the objective of completing each phase of the game was defined. The player must complete the phase and make choices and can win or lose sustenance. The free software Vectr was used for the design elements and the programming of the game using these elements and the script was done using Unity software.
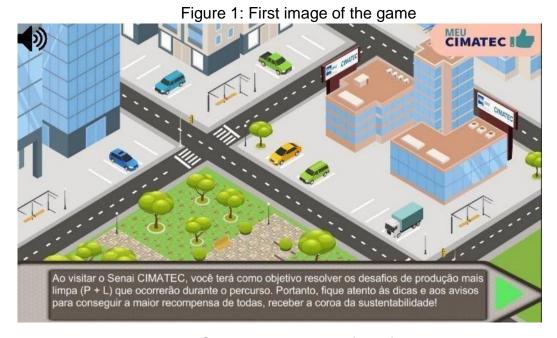
3. RESULTS AND DISCUSSION

Game elements such as points, coins, scores, performance graphs, meaningful stories and avatars were performed by the students considering the contexts and scenarios of Cimatec.

The first scenario is the entrance at Cimatec (Figure 1) with a script presenting the game and its objectives. Every time the player makes a correct choice, he gains Susten, and every time he makes a mistake, he loses Susten, and in both cases, he receives feedback.

Figure 1: First image of the game

Source: The authors (2022)

Figure 2 shows the Cimatec reception scenario, where there is an introduction to the game, avatar choice (Figure 3) and the player receives 1000 sustens.

In this phase, the player will have an idea of the unity that the game takes place, in addition to, through the information on the screen, the player will receive instructions to start the game challenge, which is in the end to receive the sustainability award. After this phase, the player must set up his avatar, which in turn, needs to follow the institution's rules, as shown in Figure 3.

Figure 2: First scenario of the game

Source: The authors (2022)

Figure 3: Avatar choice options

Source: The authors (2022)

The second scenario is a restaurant Figure 4. In this phase, the player must make decisions about using the faucet to wash his hands, consumption, and the disposal of waste generated, and may lose sustens.

Figure 4: Second scenario of the game

Source: The authors (2022)

The third scenario, which is being developed, is a laboratory.

4. CONCLUSION

Two phases of the game were developed by students. The teamwork performed by the students promoted their involvement in the theme of environmental sustainability, besides developing in them the skills of project planning and execution.
It is also expected to increase the involvement of new students in the classroom, as well as in the SENAI CIMATEC employees, who will interact with the game.

Acknowledgments

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