Gamification and CLIL: developing communication skills in L2 with the aid of digital tools in the bilingual context

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Abstract. *This paper describes the results of the project Game Development, an extracurricular subject designed for 11-12 year-old students in the bilingual context, at the Sphere International School, São José dos Campos, Brazil. Considering the relevance of CLIL to teaching EFL and the role that Gamification plays in terms of dynamizing the learning process of a foreign language - in this case, English -, it was possible to observe that both approaches encouraged the students to develop their communication skills and the digital literacy, in English, as part of the institution's curriculum, in this project.*

Keywords*: CLIL, Gamification, EFL.*

1. Gamification and CLIL: the use of digital literacy in teaching a foreign language

According to Coyle et al [2010], it has been known that new technologies are even more present in pedagogical projects and approaches when it comes to language teaching nowadays. CLIL (or Content and Language Integrated Learning) plays a significant role in this process considering the impact of digital literacy in teaching. Lee and Hammer [2011] believe that, in the 21st Century, after the 4th technological revolution, the school community must comprehend and make the most of the influence that technology has on the students, and Gamification can effectively contribute to such entrepreneurship. Cinganotto et al (2018) agree with the idea that the game-based approach [Pensky, 2001] can be used as part of CLIL-guided activities in order to establish more dynamic and effective partnerships with teachers and students, and this particular project is guided by this perspective [Ritchhart et al, 2011].

2. The bilingual context: Sphere International School, São José dos Campos, Brazil

Bilingual schools have been a new reality for EFL, in the world [International Baccalaureate Organization, 2022]. In Brazil, the rise of bilingual schools has been influenced by many factors, such as economic growth and new international partnerships with countries where English is an official or a trade language [Bialystok, 2001]. In this context, it has been observed the fact that even more students have been studying English as a foreign language in bilingual environments, and more dynamic and integrated teaching approaches are needed to cover all the expectations and plans that students, families, and the school community establish for themselves [Bialystok, 2001].

Sphere International School is part of this bilingual context. Located in São José dos Campos, Brazil, a developed and strategic region in Brazil for business, science, and technology, the school has been following the MYP (Middle Years Program) curriculum since 2013. As part of its pedagogical practices, it is evident the use of integrated pedagogical approaches in order to have the students learn by living and experiencing cultural, social, and linguistic nuances that are (or may be) part of their lives (International Baccalaureate Organization, 2022).

Such an integrated learning process is even more present in the scope of the extracurricular activities in the MYP context (International Baccalaureate Organization, 2022). The school has the opportunity to design an extracurricular subject that includes integrated skills considering the study of language, culture, society, and technology. The students also have the chance to choose the project they like the most - among the ones that are designed by the teachers -, and during one semester they can develop their communication and multidisciplinary skills (International Baccalaureate Organization, 2022).

Considering the relevance of CLIL in teaching EFL, and the effectiveness of Gamification as part of more dynamic teaching approaches [Ritchhart et al, 2011], this project was designed as one of the extracurricular subjects cataloged for the first semester of 2022, which includes practices in digital literacy (Game Development) and in communication skills, in English.

3. Methodology and Course Structure

With the aid of the game-based approach [Pensky, 2001] and gamification as a means of more effective and dynamic instructions [Studart, 2022], the project Game Development was designed considering the following aspects:

1. introduction: principles of Game Design (programming and logic).

2. exploring editing tools (creating game characters).

3. writing game plots.

4. exploring game maker apps - in this specific case, the Epic Game Maker [2022] was selected as part of the course since it has a more dynamic and intuitive use in terms of its essential tools, and due to the fact that this app is free.

5. building the **FINAL PROJECT**.

6. Preparing an oral presentation about their **FINAL PROJECT** to the school community.

Within 5 months (Table 1), 24 students (11-12 years old) - who demonstrated interest in participating in the classes and who had a B1 level or higher [CEFR, 2022] in terms of Speaking Skills - had the chance to explore different digital tools in order to solve problems and develop their Speaking Skills, in English. The classes took place every Friday - duration of 45 minutes.

Table 1. Course Schedule

Course Structure				
February	**March**	**April**	**May**	**June**
1. Tools and Resources I: HTML. 2. Intro to HTML: basic codes. **TASK 1: create a web page using HTML to share the storyline you have written.** 1. Tools and Resources II: HTML. 2. Intro to HTML: basic codes 3. How to: ♦insert images. ♦ Embedded audio. **TASK 2: now, add images and audio to your web page.**	1. How to develop exciting game characters: 2. How to edit images using Photopea. **TASK 3: draw 2 characters you would like to add to your game.** 1. How to develop exciting game characters. **TASK 4: now, edit your drawing using Photopea.** **TASK 5: redesign a popular game character using Piskel - build animated images.**	1. How to develop Sound Effects using Leshy SFMaker. 2. Exploring the tools. **TASK 6: build 5 sound effects that may be used in a game.** 1. How to make MUSIC for games using Inside the Orchestra. 2. Exploring the tools: composing a RHYTHM. **TASK 7: compose 4 different rhythms.** **TASK 8: compose a SONG.**	1. Exploring the Epic Game Maker (basic tools): 2. Characters: player and enemies. **TASK 9: explore the main features of 5 different characters and enemies.** 1. Exploring the Epic Game Maker (basic tools). **TASK 10: explore the main features of 5 different items.** **TASK 11: make 2 different game stages. Use characters (players + enemies) and items.**	**FINAL PROJECT:** ♦ make a GAME using the Epic Game Maker which includes: a) one player; b) 4 different types of enemies; c) 3 different items; d) 2 different backgrounds; e) sound effects; f) 1 theme song; g) 2 different game stages. ♦ prepare an oral presentation about your GAME. You must use slides/images to illustrate the process you used to make your GAME. ♦ share your game with your classmates! Have Fun! ☺

4. Game Design and the Final Project

Since it was adopted the game-based approach [Pensky, 2001], it was possible to observe that the students could learn and apply different techniques to the tasks they had to solve. During the classes, all of them had the opportunity to learn some principles of

digital tools (Table 1) and to communicate with their colleagues, in English.

The connection between CLIL and the game-based approaches [Pensky, 2001] under the Gamification perspective showed them new paths to developing their communication skills in the foreign language. In each challenge, they could reflect on how to solve the problem, share ideas with peers, and design their own solutions to the tasks that were given to them.

It was perceptible that all of them demonstrated interest in participating in the activities. They spoke 90-100% in English to comprehend their needs and contribute to the challenges they faced throughout the course.

Digital Literacy was a very significant part of this process. It was observed that most of them were able to understand instructions and information that were shared through digital tools (Table 1), exploring and making the most of them (Figures 1 and 2).

It was possible to analyze that they developed their speaking skills when sharing and solving different problems more dynamically, and they also learned how to use digital tools in order to solve various tasks [Ritchhart et al, 2011].
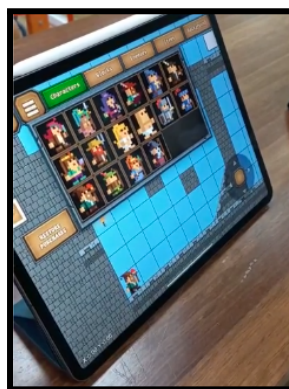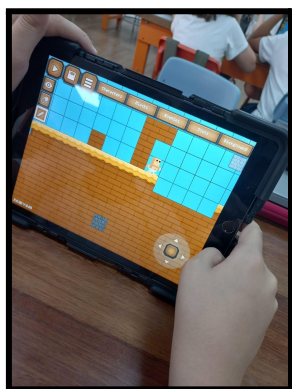
Figures 1 and 2. Exploring the Epic Game Maker app (2022)

4. Conclusion: Final Project Presentation & Interaction

Considering all the experiences acquired by the students, it is relevant to mention the fact that CLIL and Gamification could contribute to developing communication skills in a foreign language since the students tended to be more engaged in activities that were more integrated to real life circumstances and to the use of digital tools that can give them more ludic and dynamic experiences. They could express their ideas more effectively in English, integrating different areas of study in order to solve the problems they were given in the Final Project (Table 1).

After developing their own games, all the students had the chance to share the results with students of different ages at Sphere International School. Not only could they have other groups interested in exploring their games, but also be connected by English as a means of communication since they were able to communicate with each other fluently and even more dynamically (Figure 3):

Figure 3 - Final Project Presentation: Interaction in English and the use of Digital Literacy

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