BOARD AND VIDEO SERIOUS GAMES IN THE ESP CLASSES– IMPLICATIONS AND CHALLENGES

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Abstract: *Overtime, serious games have touched almost every field of activity, including the academic environment which seems to have the greatest potential to develop and implement them. The present paper considers the usage of serious games in teaching/learning English for Specific Purposes and the assessment of their capacity to become effective tools that could enhance the quality of the academic education by increasing the overall quality of the learning process. The main objective of the present study is the identification of several opportunities and challenges that the serious games might pose and their impact upon the teacher's decision in choosing one type of serious games or another (board games or digital games), given the fact that currently most researchers stopped considering board games as serious games. In order to achieve relevant results, the usage of a board serious game named Simplycycle was considered as a study case. During its assessment, the game Simplycycle proved to offer more opportunities/benefits to its players and less challenges in comparison with digital games. Therefore, the board games should regain their place among other serious games and not be excluded from this category.*

Keywords: *board serious games, digital serious games, game-based learning, teaching ESP.*

Introduction

History and Definition of Serious Games

Many people consider that serious games appeared only in the 21st century. At a closer look, it is obvious that the concept of serious games has already existed for a long time and it is only their format that changed over time. It can be said that serious games represent a modern version of games that have been used since Ancient times.

Clark Abt was the first researcher that coined the term "serious game" in 1970 in his work named "Serious Games", but unfortunately the book was ignored until the beginning of the 21st century (Abt, 1970). One of his goals was to use games for training and education purposes and he identified several "non-digital" serious games such as math-related games to be used in schools.

He gives a clear definition of serious games: "Reduced to its formal essence, a game is an activity among two or more independent decision-makers seeking to achieve their objectives in some limiting context. A more conventional definition would say that a game is a context with rules among adversaries trying to win objectives. We are concerned with serious games in the sense that these games have an explicit and carefully thought-out educational purpose and are not intended to be played primarily for amusement" (Abt, 1970).

Other references related to non-digital games were made in the book ***The New Alexandria Simulation: A Serious Game of State and Local Politics*** (Jansiewicz, 1973). The book explains the mechanisms of the game playing so that the players could learn about the basics of the US political mechanisms. The game is still played in the

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classrooms due to its reissue starting with 2004. An interesting aspect related to this game is that its author preferred to keep the game in a non-digital format because he considered that only human interactions can convey the complexity of politics (Djaouti et al., 2010).

The appearance of non-digital (board and cards games) was mainly influenced by the historical military training practices (Wilkinson, 2016). The rules of the games were designed in such a way that they could reflect complex social, economic and political aspects.

An interesting example of a military board game can be considered ***Luftschutz tut not***! which assessed the reaction of a German family that was having dinner during an air raid. The game included several objects such as bombshells, gas masks and a board organized under the form of a snake and ladders-style game. The game has as a main objective the gradual education of the children to calmly approach and react to air raids and to trust the state authorities (army) which will do their duty for the benefit of the population – the German soldiers will alert the population and extinct the fire while the German family will remain on the allocated shelter. Other games that appeared during the same period were focused mainly on the education of the children with the explicit purpose of strengthening their loyalty towards the German army, state and culture (***Bombers over England***) and promote racism against Jews (Jews out!) being considered one of the most racist games known. Its ultimate purpose was as the players to remove as many Jews as possible (Gomez, 2015).

Altogether with the introduction of the computer in all the fields of the daily life and the availability of internet in almost every house, the format started to diversify ranging from video games, 3D simulations, to mobile apps. The format was greatly influenced by the development of new technologies such as: computers, consoles, tablets, mobile phones and started to find its applicability in almost every field of activity. The most prolific fields of activity where the digital serious games found a niche were defense, healthcare, education and business. Several other fields like science, communication, aviation, advertisement, cooking, gardening and even dancing determined the need for serious games that could help the player to acquire or develop new skills.

With all these innovations triggered by the diversification of the formats and tools, the term "serious game" was redefined from what it used to be.

In 2002, Ben Sawyer published the paper ***Serious Games: Improving Public Policy through Game-based Learning and Simulation*** (Sawyer & Rejeski, 2002) where he redefined the term "serious games" as "any meaningful use of computerized game/game industry resources whose chief mission is not entertainment" (Sawyer, 2007). According to its title, the paper is an invitation to use technology and knowledge from the video game industry that has an entertainment purpose to improve the game-based learning. Soon after the publication of this paper, the Serious Games Initiative was launched and the term "serious game" was gaining some momentum in the minds of many people (Sawyer, 2009).

In 2005, a new approach to improve and update the initial definition was undertaken by Mike Zyda (***From Visual Simulation to Virtual Reality to Games***) when he defines the serious game as a game played on the computer excluding the concept of board games: "A mental contest, played with a computer in accordance with specific rules, that uses entertainment, to further government or corporate training, education, health, public policy, and strategic communication objectives" (Zyda, 2005). He clearly defines what a game, a video game and a serious game is, hence its belief that serious

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games are no longer board games but digital ones. In an era of intensive digitization, this could seem as normal and trendy. For this reason, many other researchers embraced the idea that only the digital games are considered serious games (Michael & Chen, 2006) even if there are several definitions (Garris, Ahlers & Driskell, 2002, Vogel, 2006) that take into account the following directions that could be applied to all types of serious games: they are goal-oriented, stimulate competition and motivation, they have agreed rules (Lindley, 2004) and provide feedback (Prensky, 2011). Other definitions consider that the serious games include an array of technologies, platforms, applications and experimental environments that can be found under the form of video games or mixed reality/media (Marsh, 2001, Marsh& Costello, 2012).

With all these definitions that had as their main purpose to clarify and pinpoint some aspects related to serious games, there is an emerging trend in Scandinavia to return to board games and hence their rehabilitation as reliable and important serious games. Some Scandinavian enterprises started to reintroduce the board games in the training process of their employees after 2006. Instead of using well-known tools, such as apps, social media or even e-learning they prefer to use physical simulations inspired from board games with the ultimate goal of accelerating the ability of the organization to learn and adapt itself to change. Change is difficult especially if the employees are not trained appropriately. The return to the board games is motivated by the fact that they can offer an efficient way to create a safe training environment within which the team performance can be improved. Some of the tools that accompany the board games are "talking pieces" that allow the players to share their concerns and experiences face to face in a trustful environment where the mistakes are sanctioned by paying monopoly-type money and game pieces instead of using real money (Ager, 2014).

Either the serious games are board games or digital games, they both share common features: they both have a **story** of their own that will provide the flow of the game; the game dynamics will be provided by passing from one level of difficultness to another until the players reach the final level which usually is the most difficult one. ***Simplycycle*** is about an island ruled by an administrative council that would like to hire experts in environmental issues, so that all the products manufactured on their island and all the production processes to be environmentally friendly and with a low environmental impact. From the perspective of language learning, to progress in a game, the players (environmental experts) must interact verbally one with each other, thus they need to use the language in a real and meaningful way (Peterson, 2010, Schuna, 2010). The students are exposed to some certain cultural and linguistic knowledge and the diversity of the situations encountered in the game will trigger different kinds of language use, such as: making requests, asking questions, giving explanations, asking for alternative solutions. (Zheng, Newgarden, & Young, 2012).

The **immediate feedback** is usually provided either by the teacher both in board and digital games, by Expert Cards as in the case of **Simplycycle** game (board game) or by messages (digital games) that measure the overall progress of the player, their approach, how well they performed and how they can improve their skills. A continuous feedback in the case of language learning will determine the player to repeat and reformulate some certain statements (Godwin-Jones, 2014) in different contexts. Thus, some language structures and vocabulary can be reinforced by repetition with increasing the level of difficulty and complexity of the language used.

Real life situations are included in both types of game. Putting the students at the core of the problem, and asking them to make decisions and find solutions, the game reproduces a real situation.

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The last element required by a serious game is that its main objective is **learning** given the fact that all the serious games have a purpose that is not recreational but related to a certain educational aspect.

2. Board Games in Teaching ESP. Study Case – *Simplycycle*

a. General information

In a previous study ***The Opportunity of Introducing Serious Games in Teaching English for Specific Purposes. A Study Case on Playing "Simplycycle" Serious Game*** (Supuran & Sturza, 2017) presented at the third International ESP Conference and Summer School Establishing the Predominant Position of ESP within Adult ELT, University of Nis, Sebia, 3-7 July 2017, the central stage was taken by the board game **Simplycyle** addressed to students attending environmental-related subjects but which proved to be useful in teaching in English for Environmental Sciences. Thus, the initial objectives of the games were reformulated and the game was repurposed to serve the teaching of English language in specific context. In this context, the main objectives of the language teachers were to improve reading, speaking and listening skills of the students with a focus on the acquisition of new vocabulary that became more and more sophisticated and complex altogether with passing the different levels of difficulty; on understanding the short texts written on the cards and the ability to produce valuable reasoning in different contexts; other objectives that remained common with those mentioned by the designer of the game were: improving critical thinking, problem-solving, triggering innovation and collaborative work.

b. Material and Method

The game was played successfully by 103 students in 3 sessions according to the instructions in the booklet that accompanied the game. Each group consisted of five persons and the playing time was about two hours for each session. Each group received a set that included the Game Board showing the usual linear production model TAKE-MAKE-WASTE and the two cycles for eco-effective design: technical cycle and biological cycle. The Board was accompanied by the Product Cards. Each card contains information (materials, risks posed by the respective materials, or the production process and recycling possibilities) about a certain product, such as a TV-set, diaper, piece of furniture, food package, cosmetics etc. Expert Cards are those cards that offer the immediate feedback to the players in case there is no teacher/instructor ready to support the group or in the case the players cannot find a solution for the product they need to discuss. Action Cards are the cards that will ensure the dynamics of the game. There are three types of Action Cards corresponding to the three levels of complexity of the game. Cycle Cards are those cards whose role is to push creativity further and to show our interdependence with nature.

Each student was asked to draw one Product Card to read the text written on it to the other students in the group and start a brainstorming session for finding the solutions for the dangerous ingredients that the respective product contained. Thus, the students could find solutions either in the field of chemistry (replacing hazardous ingredients/chemical substances with others that are environmentally-friendly), or in the production process of the respective products, so that its environmental impact to be minimized (how to reduce the consumption of water during the production process, make the switch towards energy efficiency, reduce the quantity of wastes, etc).

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When the group established that one of the solutions presented was reliable and generally accepted they were allowed to move one step forward on the Board of the game, making the passage from the red zone (dangerous area) towards the green zone (safe area). The first level was completed when the students succeeded in reaching the green area with all the products that they considered.

After playing the game, a questionnaire was applied to all the students that were attending three different study programmes: Environmental Sciences, Food Engineering and Constructions. For each group of students, the teachers selected the Product Cards specific to their field of study.

The questionnaire included ten questions that could be divided into questions meant to collect socio-demographic data (division of students according to gender, age, proficiency in English), questions that had in view the game **Simplycycle** (positive and negative aspects of the playing experience; suitability of the game in teaching English for Environmental Sciences; and general questions about students preferences for board games or computer games, or the opportunity to include other serious games in the teaching and learning process. (Supuran& Sturza, 2017)

c. Discussion and Results

According to the data collected from the questionnaires, out of the 92 valid questionnaires, 56 were filled out by female students and 36 by male students. All the students ranged in the age group of 18-22 years old and they were divided on three levels of proficiency as it follows: 21 beginners, 60 intermediates and 11 advanced level students (multi-level proficiency class). (Supuran& Sturza, 2017)

The data provided by the questionnaire showed that there is no significant preference for playing board games or digital games. However, there is a tendency towards digital games (54.35%) instead of board games (45.65%). These results may open a new direction of study regarding the division of the students according to their gender and level of proficiency. It would be interesting to identify what categories of students feel or don't feel comfortable with using the technology in the learning process and what are the reasons that trigger their choice to one type of game or the other (Supuran& Sturza, 2017). Thus, one of the challenges of the digital games is that certain groups can be excluded on the grounds that they are not literate in the usage of the PC or they are not experienced in playing computer games. Such excluded groups can be female students that do not really engage in playing video games, financially disadvantaged students, old and disabled persons that lack handiness. On the other hand, in the case of board games, the feeling of exclusion can be avoided and all the categories mentioned above could find their place around the table board.

Other challenge that a serious game may pose is the guidance of students during the process of playing. Free exploration or simulation of an educational environment is not enough. The instructional process needs that the learner is guided and accompanied by a teacher/educator so that he can get the sense/meaning of what the student is doing.

In the case of **Simplycycle**, the teacher could provide immediate support and feedback to any group or individual that needed it, but the designer also considered a second option by introducing the Expert Cards which could offer specialized information on the product in discussion. Thus, the English teacher who usually lacks specialized scientific information (chemistry, clean technologies, energy efficiency) received help in his endeavour of providing accurate and reliable scientific information. However, even if the teacher can be substituted, the reference to an educator would

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always be important. The situation is different in the case of digital games when the role of the teacher is overtaken by the tutorials with which every digital game usually starts. Most of the digital games are equipped with different tools meant to help the students: prompts, tips, dictionaries, helping questions, guiding instructions and feedback.

While board games will always promote human interaction (student-to-student; teacher-to-student, student-to-teacher), the digital games will mainly encourage the learner's autonomy and student-computer interaction.

Going further with the reasoning, a new difference between board and digital games can be inferred. The different types of interactions that take place within the group (student-to-student), with the teacher (student-to-teacher) or with the Expert Cards (**Simplycycle**), in the case of playing a board game, will be characterized by the diversity and dynamics of the content. On the other hand, in the case of the interaction with a computer (digital games), the content is often rather static and rigid and therefore, it can lead to a predictable and impersonal gameplay. This aspect could easily cause the boredom and alienating feeling in some players, and hence the decision to stop playing the game.

As it is explained in the book *The Gamification of Learning and Instruction Fieldbook: Ideas into Practice:* "The more the learner interacts with other learners, the content, and the instructor, the more likely it is that learning will actually occur" (Karl M. Kapp, 2014).

While concerns are raised upon the extensive use of the digital games by the students, given the fact that they can lead to hyper-stimulation and difficultness in making the distinction between virtual world and reality, there is no danger in using the board games for several hours. In the case of **Simplycycle**, the students included in the study played the game for two hours (according to the instructions) and they didn't feel the need to stop. On the contrary, being highly motivated and engaged in the game, they wanted to continue, so that they could finish the first level. The degree of motivation and level of engagement was also influenced by the unusual type of delivery of the learning material, all the students playing a serious game for the first time. It was a new experience for them to be allowed to make mistakes or experience success. The students were asked to make decisions and face the consequences of their actions not being pressed by the barriers of time and space. However, the situation can be different in the case of digital games when the student is required to comply with deadlines or work against time.

Furthermore, serious games, due to their capacity to allow the players to immerse themselves in other worlds and escape from reality, can provide just the distance the players need to encourage in-depth reflection and thoughts. There is a strong inter-connection between the player's capacity to deeply reflect on the environment and practical tasks that he/she needs to perform (learning by doing) and the improvement of their memorization and retention capacity. The deeper the engagement and reflection, the higher the retention and memorization ability.

Assessment and testing are crucial to determine if the students have understood the material. Some studies have shown that educational games are more motivating, but learning is not improved (Graesser et al, 2009). One of the conclusions of the study made upon **Simplycycle** was that even if the serious games can be considered as reliable frameworks within which the language acquisition process is possible, they cannot be played by the students/players who do not have a minimum knowledge of English that is specific for the target domain of the game. This fact leads us to a more general conclusion that serious games need a careful analysis before being selected by

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the teachers, so that they could comply not only to the requests of the curriculum but also to the needs and skills of the students/players (Supuran& Sturza, 2017).

Conclusions

The academic environment seems to have the greatest potential to develop and implement serious games; this is due to the possible cooperation between the academics and game industry professionals. On the long term, serious games can become effective tools that could enhance the quality of the academic education by increasing the overall quality of the learning process.

By embracing change, both teachers and students can engage themselves in using/repurposing serious games (either board or digital games) to serve their own needs but also to meet the requirements of the curriculum.

A set of opportunities and challenges could be collected after the introduction of **Simplycycle** serious game within the teaching/learning process of English for Environmental Sciences.

Among the most important **opportunities** that the serious game could provide are: it has an educational purpose; it increases engagement and motivation; it favours reflection; it promotes real and safe practice; it stimulates and improves retention of information; it provides multimodal interaction; it provides field-specific information; it supports critical thinking, problem solving and facilitate student production (Kern, 2013).

Most of the identified **challenges** were mainly related to using digital games in opposition to board serious games. Some of the most relevant challenges were: the need for a teacher/educator to guide the learning process while playing the game; different levels of literacy in using technology (computers, apps, consoles, tablets) in the case of students and even teachers that could lead to the exclusion of some certain groups; the resources and training of the teacher to integrate the serious games in their own course; lack of deep specialized knowledge in the case of the ESP teachers; issues of access to technology due to the lack of a budget for serious games.

Finally, it can be concluded that the board games should regain their place among other serious games and not be excluded from their category. Due to the opportunities that they offer, board games can be considered excellent instruments in assisting the process of teaching/learning English for Specific Purposes.

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