Storyline-Based Videogames in the FL Classroom

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Abstract

The use of videogames in the foreign language (FL) classroom seems to be gradually increasing nowadays. TICs are making the lives of educators easier and their teaching methods more effective; these positive experiences make that researchers in this field are constantly introducing and developing new teaching methods and electronic applications. This paper explores the use of storyline-based videogames in the FL classroom in order to enhance students' learning process and their communication outcomes through interactive and engaging tasks that may raise their motivation. This paper is a literature review which concerns the use of supportive material in the field of foreign language learning and it suggests that videogames based on story-lines may be applied in the same way that traditional workbooks and e-workbooks have been used for several years. This proposal is addressed to teaching professionals interested in the use of videogames as well as to editorials of language teaching materials.

Keywords

Videogames; Storylines; Language learning; TIC; Serious games

I. Introduction

The end of the XX century and the beginning of the XXI will probably be remembered in a near future as the transition period between the paper and the digital eras. During these twenty five years, almost all the paper-like material has been transferred to digital format. The field of education has witnessed how coursebooks and workbooks have evolved to e-coursebooks and e-workbooks, which are more accessible, cheaper, portable, easy to store, contain audio and video and are also environment-friendly. This revolutionary process of digitalization has brought in use newer possibilities and applications, whereas some traditional ideas of education have consequently changed a great deal during this relatively short period. One of these newer application and functions is the application of serious videogames. Different authors consider them a valuable resource for educational purposes and some have recommended their use in the classroom or out of it as a way of reinforcing the acquisition of both content and language (Cornillie, Thorne & Desmet, 2012; Gee, 2005; Peterson, 2010; Reinders, 2012). This paper introduces a bibliographical review on the use of videogames in the field of foreign language learning and suggests that longitudinal gamified teaching materials based on storylines and played through tailored-designed videogames can raise students' interest and motivation in foreign language learning.

II. State of the Art

The use of teaching workbooks in the subject of foreign languages was widely spread during the XX century and they have continued being in use at all educational levels in the present despite their format has often been digitalized. Regardless of their format, workbooks are used with the aim of providing students with further activities and exercises. This extra practice can be done in class during the school sessions or at home as part of their homework. In any of these contexts, the use of workbooks corresponds to the *processing stage* in which, according to Krashen (1982), students organize, store, and assimilate the input received. This stage was also known as the silent period in which students concentrate and practice repetitively in order to acquire the new information (Krashen, 1977). In this sense, it is noticeable that technology has enhanced education by increasing the amount of opportunities to practice at home through digital materials which include media resources. Thus, the benefits of educational e-coursebooks and e-workbooks can be measured and acknowledged in terms of quality and quantity.

This quantitative and qualitative development of e-materials also needs to be studied in terms of students' motivation: *are students more motivated with e-books than with traditional ones*? Picton (2014) showed that 49% of the participants in her research (students aged 5-15) felt that e-books would have a positive effect on their motivation, being these results considered neutral. Similarly, Woody, Daniel & Baker (2010) did not identify significant differences regarding an increase of motivation towards the use of electronic books with students at this age; in fact most of their interviewees preferred paper books. Thus, it seems that if books and e-books are compared in terms of students' preference there are no significant results in favor of one of these two possibilities. This may concern the fact that what some older students may find motivating due to its novel nature, younger students probably might see it as part of their daily lives. It should be noticed that newer generations are considered digital natives and consequently their digital competence is by virtue of their being born around technology (Zur, 2012); thus they do not perceive the same impact on their use as digital immigrants do when they encounter new forms of technology (Prensky, 2001). In addition to this fact, repetitive drills can sometimes become boring

and demotivating for learners regardless of their format, being this connected to the quantity and quality of the activities and also to the complexity and challenge they mean to each individual (Beatty, 2013).

One of the possibilities offered by e-workbooks is the increase of interaction; this may involve the use of videos, listening with tape scripts, speech practice, and other interactive activities and games (Mozejko & Krajka, 2011). However, the studies introduced above and similar ones (Beetham & Sharpe, 2013; Escobar, 2016; Simpson, 2015) suggest no significant gaps between one and the other format. It seems that the use of technology does not directly imply a remarkable increase of students' motivation. This fact might be related to the lack of playability which favors that students feel they are gaming while learning. In this sense, serious videogames may introduce this entertaining feature in the learning process (Oliveira, Correia, Merrelho, Marques, Pereira & Cardoso, 2009; González-González & Blanco-Izquierdo, 2012). As it has been explained above, e-workbooks can also offer games, but most of them are presented in isolation and without a clear linear interconnection and a solid plot. This fact makes us consider that e-workbooks along a longitudinal interactive storyline may engage students in their learning process as non-educational videogames do.

III. Story-Lines to Motivate Foreign Language Learners

Teachers and editorials of teaching materials aim at engaging students to learn, motivating them to raise their interest and consequently to take the necessary efforts to study. There are different ways of motivating students and making them do their best during their learning process; however, the purpose of most educators is that this could be a pleasant and entertaining process (Soler-Pardo, 2014). This paper suggests that stories are fundamental to engage individuals in their learning process. Story-lines raise interest and curiosity within their audience as it happens when reading books, watching films, theatre plays, or any other spectacles as well as when playing with videogames (Novak, Johnson, Tenenbaum & Shute, 2016; Robin & McNeil, 2012). Higgins & Scholer (2009) suggested that engagement involves a motivational force of attraction to do something. In this sense, this educational engagement is related to experiencing and being connected to something (Calder and Malthouse, 2008). Some research has suggested that children should spend most of their time playing and experiencing life; in this sense homework could be considered harmful since it restricts children's playing time (Winslade, 2015). Children use their own language when they play as well as their own rules and values and this helps them develop their own identities; then they develop skills for cooperating, helping, sharing, and problem-solving (Casey, 2010). If children play, they also develop better organization skills and this is associated with better physical and mental health as well as to autonomy and creative thinking (Badura, Geckova, Sigmundova, van Dijk & Reijneveld, 2015). On the other hand, other researchers justify that homework is an essential tool that provides students with the opportunity to process and interiorize the input received during their lessons, to construct and reinforce their new knowledge and to set their cognitive basis for production or output (Battle-Bailey, 2004; Galyon, Voils, Blondin & Williams, 2015; Strother, 1984).

In this sense, there should be a third via which may offer playing, entertainment and motivation through homework. Most children do not see school as something entertaining as most adults do not find their jobs as something funny that they want to continue doing during their free time; instead both school and working are often seen as daily obligations. During their free time, both children and adults prefer watching films at home or at the cinema, relaxing while reading a book, playing games with family and friends. According to Gallego, Satorre, and Llorens (2006), the key

to engage students with learning is that funny things remain longer in memory. This means that the combination of learning and playing would result in a positive memorable experience with no restrictions neither to pleasure nor to gain and reinforce new knowledge. Thus, this paper reviews if it is possible to learn languages while doing pleasant and entertaining activities during their spare time through videogames based on storylines.

Films, books, and theatre plays are great sources for language learning (Bahrani & Soltani, 2012; Gill, 2008; Justice & Kaderavek, 2002; Sundqvist & Sylvén, 2014); they tell a story and the audience is expectant to see the development of their plot. Throughout stories, the audience is voluntarily paying attention to a series of contents told by narrators or performed by actors; they share feelings and emotions and at the end they get their own conclusions. The audience is somehow involved in a narrative transportation (Baek and Morimoto, 2012). Green and Brock (2000) defined narrative transportation as a convergent process in which the individuals' mental system becomes focused on events happening in a series of facts and they are part of a story. Furthermore, the audience is absorbed into the narrative and lives the story from the inside, resulting in experience (Kim, Lloyd & Cervellon, 2016). In addition to this, Van Laer, de Ruyter, Visconti and Wetzels (2014:80) state that narrative transportation can "cause affective and cognitive responses, beliefs, and attitude and intentional changes".

As it can be observed, the use of films, books, and theatre plays in foreign language teaching environments has been quite common in the last decades and it has brought several benefits to language learning. However, neither films nor books imply interaction with the audience; they do not take direct roles and their decisions or thoughts do not interfere in the development of the story. This means that the members of the audience in books and films are only mere spectators rather than direct participants. This sense of interaction and experiencing is something that videogames can incorporate to foreign language teaching.

IV. Serious Videogames in the Foreign Language Classroom

The use of videogames is a real pedagogical possibility that was started during the end of the XX century (see for example Gagnon, 1985; Malone, 1981; Silvern, 1986) and they have increasingly been used during the XXI. When videogames are used for real educational purposes, they can be classified as serious. In this sense, it shall be noticed that any videogame can be educational; in fact all the videogames are teaching either voluntarily or involuntarily something regardless of their genre, nature, content and method. In the same way, books and films are also teaching despite they do not focus on educational purposes. Among other definitions, Susi, Johannesson and Backlund (2007:1) stated that serious games are "digital games used for purposes other than mere entertainment"; these purposes can be aimed at training, advertising, simulating, or educating through computers or videogame consoles. As result, videogames help the player develop different skills and they also offer the possibility to experience situations that are unlikely to perform in the real life for safety, time, and cost among other reasons (Squire & Jenkins, 2003; Susi et al., 2007). Thus, those videogames which are actually designed on purpose for educational aims are considered serious videogames if they contain a series of characteristics. Malone (1981) suggested that videogames are serious when they have a series of characteristics:

- Clear meaningful goals for the students,
- Students' feedback on progress through structured goals and scoring,
- Adjustable difficulty levels to the learners' skills,
- Random elements of surprise, and

- An emotionally appealing fantasy and metaphor that is related to game skills.

One of the main features that make the use of videogames in the FL classroom outstanding is that they are played. In this sense, the fact that learning is realized through playing makes that this process becomes engaging and motivating at the same time. Thus, if the students want to play they will be learning. As it has been previously stated, one of the main concerns of education is motivation; students only take efforts to learn if they are either intrinsically or extrinsically motivated to do so. The use of videogames can be motivating due to the fact that they can be a pleasant and entertaining learning process. As explained by Winslade (2005), children should spend most of their time playing and videogames are a way of experiencing situations based on real life that may sound useful attractive and useful for their development.

Another factor that needs to be considered in videogame design is engagement. This is a part of students' motivation to play and consequently learn; but in this case engagement refers to the need to make videogames addictive. There are different elements that may make a videogame engaging; among other ones, stories and competition are fundamental. As it has been previously explained, stories raise interest and curiosity within the audience as it happens when reading books, watching films, or theatre plays, among others. Similarly, competitiveness plays a key role; Martinez & Buxarrais (1999) suggested that competition in the classroom can be very positive when students try to fulfill their learning objectives promoting individual as well as group efforts. As result, these efforts to win a competition are what make the students remain motivated and engaged in completing the activity while playing and consequently learning. This engagement to play the videogame is what keeps the learners motivated to complete their homework and with a desire of continuously doing so.

Classic and contemporary authors have suggested that the best learning is based on experience (Gibson & Gibson, 1955; Jarvis, 2009; Plato [in Power, 1991]); Aristotle also explained that "for the things we have to learn before we can do them, we learn by doing them" (Cohen, 2007:102). Unfortunately, experimenting in the classroom tends to be restricted to time and space limitations as well as to participants and other resources (Harmer, 2013); therefore, researchers in the field of education are constantly in need of finding alternative methods and approaches that may overcome these limitations. *'Experimenting'* concerns the need of students to complete tasks while interacting, reflecting, and solving problems. Furthermore, videogames are a way of using and manipulating objects and living virtual experiences that, as it happens in real life practice, students will be learning new concepts and associating them with symbols and also their referents (see figure 1). This semiotic connection represents the triangle of reference introduced by Ogden & Richards (1923) and suggests how linguistic symbols are related to the objects they represent. Thus, videogames can be a clear mirror of reality despite they represent fiction or unreal worlds (Galloway, 2004). These virtual platforms increase the time of exposure to the language and contents and consequently students receive further input and more opportunities for practicing language forms (Figueroa-Flores, 2015; Roediger & Karpicke, 2006). As result, serious videogames can offer students a great support in FL learning through the completion of challenging problem-solving tasks in any given context (Barr, 2013).

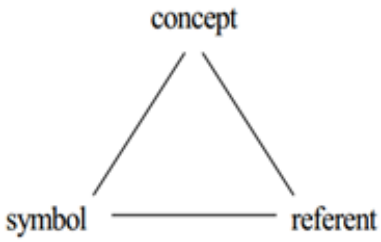

Figure 1. Triangle of Reference (Ogden & Richards, 1923).

In addition to these definitions, Susi et al. (2007) established a distinction between serious and entertainment games. In this sense, serious games focus on solving problems rather than providing rich experiences; however, it shall be noticed that the more entertaining the game is, the more interest students will show. Besides, the learning elements should be clearly identified and integrated into the gaming process; it is necessary to clarify what they intend to teach and then the game can be designed according to the learning elements targeted. Another feature of serious games is that randomness may sound inappropriate for the player-learner, they should respond to conscious decisions rather than actions completed by chance. At last, regarding communication, the language in serious games should represent natural language rather than perfect communication. The player should be involved in a world with speakers who speak different registers of language. The following table summarizes the main differences between serious and entertaining games.

	Serious Games	**Entertainment Games**
Task vs. rich experience	Problem solving in focus	Rich experiences preferred
Focus	Important elements of learning	To have fun
Simulations	Assumptions necessary for workable simulations	Simplified simulation processes
Communication	Should reflect natural (i.e., non-perfect)	Communication is often perfect

Table 1. Difference between serious and entertainment games (Susi et al., 2007).

As it can be observed in this section, there are a series of characteristics that are related to teach both qualitative and quantitative contents but also to entertain students. Videogames necessarily need to be associated with entertaining; otherwise, they are not videogames (Griffiths, 2002). This factor motivates students to play and to continue learning (Dondlinger, 2007). In education, fostering motivation among students shall increase their efforts to complete the task and promote their enjoyment during the learning time (Gros, 2009). However, not all the videogames are the same; they can be classified into different genres, and these lists of categories tend to vary among different authors (see Adams, 2013; Nowak, 2011; Rollings & Adams, 2003). Adams (2013) introduced nine categories: action, action-adventure, adventure, massive multiple-player online (MMO), role-playing, simulation, strategy, vehicle simulation, and miscellaneous genres. Each of these genres contains noticeable differences in the way of playing; thus depending on the educational purposes and field of knowledge, some genres may be more suitable than others. This means that there is a wide range of possibilities to teach different contents and subjects; if the editorials of didactic materials considered the possibility of using videogames as a complement for

their coursebooks, they could use different genres based on and designed according to the customer demands, interests and needs.

V. Integrating Language Teaching and Videogames based on Storylines

Having considered the state of the art, the effects of storylines in foreign language teaching, and the characteristics of serious videogames, these ideas could be combined to develop tailored serious videogames based on storylines that give support to teaching foreign languages as workbooks and e-workbooks have been doing until the present moment. The use of videogames is recently new in the field of foreign language teaching but there have already been some previous experiences since the beginning of the new century (Calvo-Ferrer, 2013; Gallego, Villagrá, Satorre, Compañ, Molina & Llorens Largo, 2014; Mills, 2010). According to Fernandez-Costales (2012: 387), the evolution of videogames has been frantic in the last decades "running in parallel with the progress of new technology and the availability of electronic appliances for the wide audience". Besides, this author adds that their evolution has also involved the use of more complex narrative techniques allowing the introduction of more real-life and engaging plots. These technological and plot development has made that videogames can be interpreted as the reflection of reality and consequently players may experience real life situations.

As it has been explained, the time for language practice in the classroom is sometimes insufficient and teachers need to make students work at their home with additional activities and exercises. Up to now, teachers have used workbooks and e-workbooks to help students processing information and develop language competence with drills and other exercises. This literature review suggests incorporating videogames in foreign language teaching as an additional tool in the students' process of language acquisition. One of the benefits of videogames is that they necessarily need to be associated with entertaining, and students should perceive it as something enjoyable and pleasant rather than negative or related to work or study. As result, the use of videogames based on storylines in the foreign language classroom could be an alternative method to engage students in their learning process.

The basis and principles to integrate teaching contents in videogames have been widely discussed (Dourda, Bratitsis, Griva & Papadopoulou, 2014; Habgood, 2007; Torrente, Moreno-Ger, Martínez-Ortiz & Fernandez-Manjon, 2009). As previously stated, the engagement in a storyline is essential to develop serious videogames as it happens in films or books. However, there are other principles that need to be considered to integrate teaching contents in videogames and continue being engaging and entertaining for the player. This process is known as Gamification (Deterding, Dixon, Khaled & Nacke, 2011; Villalustre-Martínez & Del Moral-Pérez, 2015). Gamification consists in treating a particular process as if it was a game in which participants are players (Gallego, Molina & Llorens, 2014). When designing videogames, scriptwriters and programmers should consider the following characteristics (Prensky, 2001):

- Entertainment gives enjoyment and pleasure.
- Playing gives intense and passionate involvement.
- Rules mean structure.
- Goals give motivation.
- Interaction provides players with doing.
- Game adaptation gives flow.
- Outcomes and feedback give learning.
- Win states gives ego gratification.

- Conflict, competition, challenge, and opposition mean adrenaline.
- Problem solving sparks creativity.
- Interaction means socializing.
- Representation and stories give emotion.

These characteristics seem to be fundamental for the development of serious videogames and most of them involve emotions. Thus, there is a series of feelings and emotions that videogames must transfer to their players. It shall be noticed that players are direct participants in a fictional world; and they need to feel that they have autonomy and power to complete actions and contribute to the development of the story as it happens in real life. Players need to feel that they are important (Mupringa, Nora & Yaw, 2006). In addition to these features, it is also necessary to analyze other characteristics on videogame design. From a technical perspective, Deterding, Dixon, Khaled, & Nacke (2011) suggest that teachers should consider first the teaching and learning purposes and then decide how to play those educational purposes and select the most suitable genre for that purpose. Once these decisions have been taken, the gamification of the teaching content can start. This process is divided into some stages and there are certain aspects that different authors have considered. Robson, Plangger, Kietzmann, McCarthy and Pitt (2015) suggested a model of gamification that contains three items: mechanics, dynamics and emotions (see figure 2).

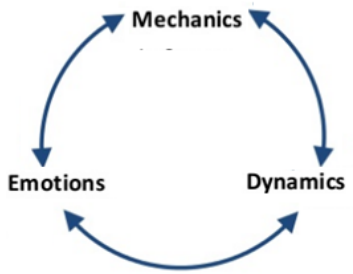

Figure 2. Processing Gamification (Robson, et al., 2015)

The first item in this model concerns mechanics; it represents the objectives, rules, setting, context, interactions, and boundaries within the game. Mechanics can also be divided into three categories. Firstly, setup mechanics determines where it is to be played, what objects are needed for it, and how these are to be distributed. Secondly, rule mechanics shape the goals of the gamified experience. And thirdly, progression mechanics defines the type of standings and rewards the player receives along the game such as badges, trophies, or winnings, among other ones. The following item in the model is dynamics; it configures the behavior of the players that participate in the experience. It shall be noticed that dynamics can be impacted by observers and spectators. At last, the third item concerns the mental affective states and reactions evoked among individual players.

In addition to the process of gamification introduced by Robson et al. (2015), there are other elements that should be considered when designing serious games. These items provide the necessary educational items in serious videogames; they are engagement, autonomy, mastery and progression and they were introduced by Butler (2016).

- *Engagement:* Learners better get involved with the games if they provide storytelling, narrative and challenge; consequently they connect with the content. This connection to the content is much stronger when the game is set in a world and is clearly connected to

learning. In this sense, students get connected emotionally with the outcome of the game, for example when a player is virtually hurt or their company loses money.

- *Autonomy:* Players are the protagonist and they can take control and explore the virtual world at their own pace taking their own decisions. This favors an increase of the immersion level in their learning processes. Besides, players are also involved in a scene of mystery and suspense since they do not know what will happen next.
- *Mastery:* Learners gain mastery in both the game and the target content after repeating tasks and mechanizing actions. In turn, students are motivated with a sense of success and enjoyment after completing challenging levels.
- *Progression:* Learners can witness their progression through gaining rewards or points, achieving ranks, or unlocking levels among others. This motivates students to continue playing and learning until they win or fulfill the purpose of the game.

In addition to these fundamental features for serious videogames, it shall also be noticed that what it is mainly pretended to develop in this proposal are videogames; thus players expect to find videogames like the ones they buy in stores for over $60. In this sense, if videogame designers and editorials of teaching materials aim at developing videogames they also need to consider the characteristics of commercial videogames and analyze what make them attractive and engaging to the audience. Then, they must incorporate these features to their products; otherwise, players will not be interested and they will find the proposed serious videogames as something obligatory and not as something fun that they do because they like it. There is no doubt that the art of integrating language and/or content teaching and videogames may be quite a difficult task. There are several items that need to be considered to make videogames worthy to be played and consequently that may entertain, engage, and teach language and contents to their players. In words of Prensky (2001), there are a series of characteristics that determine if a game is good, regardless of the fact of being educational or not, but considering their success in the market.

- *Balance*: players may feel that the game is challenging but fair, and neither too hard nor too easy at any point.
- *Creative*: they add something original that differs from previous games.
- *Focus*: the entertainment within the game is identified and the player repetitively receives doses of it.
- *Character*: both the plot and its participants have character; this is what makes the story memorable.
- *Tension*: the players must care about the goal of the game, and this needs certain degree of difficulty to be achieved.
- *Energy*: videogames need to involve movement, momentum and pacing. The game's energy is what keeps people playing.

VI. Conclusion

This paper suggests that serious videogames could be a useful tool that may support foreign language teaching since it increases the time of exposure to the target language and consequently provides students with further practice. Furthermore, the fact of playing a videogame can be motivating for different reasons such as entertainment and pleasure, and consequently engagement. For its players-learners, this may result in doses of addiction to playing and learning. Our proposal in this literature review is based on the use of longitudinal interactive storylines to engage students in their learning processes like films and books do with their audience. The way it can be applied may differ due to the different existing genres and subgenres of videogames; the

decision of using one or another genre depends on the teachers' and learners' demands, interests and needs but they all should teach and provide fun. In this context, learners are players who participate in the development of a particular story, making their experience more memorable. However, as it has been discussed, the integration of language and content learning and videogames can be a complex task. The success of any educational videogame is based on the correct *gamification* of specific language forms and contents as well as on the adequate design of a tailored videogame based on an engaging storyline; and as result this should help players to learn the language and content that is intended to while playing and having fun. In this sense, the collaboration between language teaching experts and videogame developers, and both with notions of gamification, is fundamental for the success of proposal based on the use of videogames for pedagogical purposes.

If this proposal was implemented successfully in the foreign language classroom, gamified contents in tailored videogames based on storylines could improve students' motivation when working with traditional or electronic workbooks at home. This motivation is expected to be achieved by engaging students in the story being told as well as in the game and its subsequent entertainment. As it has been commented, the learning stage on focus in this paper was coined by Krashen (1982) as *the processing stage* in which students organize, store, and assimilate the input received by practicing the new information repetitively. *The input* and *the output stages* could be partially implemented along the videogame, but it is advisable that these stages should be performed in the classroom when the teacher can directly instruct the students and these can make comments on the lessons and clarify possible doubts. On the other hand, it shall also be acknowledged that this proposal would probably be better welcome by those students who like and are good at videogames and are interested in the genre selected. As it may happen with films, music and books, not everyone like the same thing or style.

In future research, this proposal could be further developed towards a more specific type of audience or contents; or it could also focus on content subjects that are addressed to teaching language as it happens in the CBI or CLIL approaches (i.e.: history, natural and social sciences, chemistry). The possibilities of foreign language teaching through videogames seem to be still quite unexplored if they are compared with other research areas, and it is likely that several new pedagogical applications based on the use of videogames will appear in the next few years. In this sense, investment funds and collaboration among experts in videogame design and teaching professionals are fundamental for developing suitable videogames that could be implemented into the different branches of the educational field.

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