Language for Specific Purposes and Graphic-Adventure Videogames: Supporting Content and Language Learning

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ARTÍCULO

Enseñanza de Lengua para Fines Específicos a través de Aventuras Gráficas

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Abstract

The use of videogames for educational purposes seems to increasingly be in the eye of teachers and publishers of didactic materials. Videogames can be a great support for language learners since they increase their time of exposure in an entertaining way. This research is a literature review which focuses on supporting language for specific purposes (LSP) students with graphic-adventure videogames. This paper introduces theories of LSP teaching and learning combined with the characteristics of educational videogames with the aim of describing the needs to be considered when developing videogames for LSP. In this sense, these videogames should be designed and adapted to particular professions related to the communication purposes of the target language. This proposal is addressed to LSP teaching professionals as well as for publishers of didactic materials.

KEYWORDS
Videogames, LSP, Content and Language learning, Graphic-adventures

Resumen
El uso de los videojuegos educativos parece estar más presente entre profesores y editoriales de materiales didácticos. Se ha demostrado que los videojuegos pueden ser un gran apoyo docente para estudiantes de idiomas ya que incrementan su tiempo de exposición a la lengua extranjera de manera lúdica. Esta investigación es una revisión de la literatura centrada en el estudio de la enseñanza y aprendizaje de lenguas para fines específicos (LFE) a través del género de videojuegos de aventuras gráficas. Este artículo presenta teorías sobre la enseñanza y aprendizaje de LFE combinadas con las características de los videojuegos educativos cuya finalidad es describir las necesidades a considerar cuando se desarrollaran videojuegos de LSP. Estos videojuegos se diseñaran basándose en profesiones relacionadas con la finalidad comunicativa de la lengua meta. Esta propuesta pretende ser de interés docente así como para editores de materiales didácticos.

PALABRAS CLAVE
Videojuegos, lenguaje para fines específicos, aprendizaje de segundas lenguas, aventuras gráficas.

1. INTRODUCTION

Education has changed a great deal during the last decades and especially during the last years. The traditional classroom with paper books, blackboard and chalk has evolved towards the use of electronic devices that aim at improving the quality and quantity of the learning processes as well as making this task easier for both teachers and learners. Between the last years of the 1990s and the early 2000s most universities began to use electronic platforms where students were provided with electronic resources for their learning; these included blogs, wiki, e-books and e-workbooks, or websites, among many others. More recently, videogames have been considered a valid resource for educational purposes, and some researchers have recommended their use in the classroom (Blunt, 2007; Calvo-Ferrer & Belda-Median, 2015; Gee, 2003). In the area of foreign language learning, the use of videogames seems to be a useful resource to help learners develop their foreign language skills; see for example the videogames 'Lyrics Training' (Mills, 2010) or 'The Conference Interpreter' (Calvo-Ferrer, 2013). These videogames include different objectives but they mainly focus on helping learners develop communication language skills and acquire specific terminology. In this case, the purpose of this paper is to describe the features of graphic adventure videogames as a means of support in the language for specific purposes classroom (LSP) at tertiary level. In contrast to general language programs, LSP students are expected to have some acquaintance with the target language and the aim of the subject is to provide learners with language forms to communicate in specific professional or academic contexts and perform communicative func-

tions related to a particular job. Most universities offer LSP courses which consist in teaching foreign languages based on real communication purposes of a particular profession related to a bachelor or master degree. As suggested by Gee (2003), supporting language learning processes with videogames benefits students with higher time of input and output exposure in a real context, familiarizing students with a given particular profession. Furthermore, videogames involve playful factors that promote students' entertainment through their learning processes, and contributing to increase their motivation in the subject. This paper introduces a theoretical framework related to language and content learning in LSP courses and discusses the benefits of supporting this learning process with tailored graphic-adventure videogames.

2. LANGUAGE AND CONTENT LEARNING AT TERTIARY EDUCATION

Teaching and learning languages can be a difficult task due to the unlimited amount of situations in which communication may happen. In this sense, a person who is native of a language may encounter difficulties when communication is set in a non-familiar context. Dudley-Evans and St John (1998) suggested the need for a focus on specific aims in language teaching, which were based on the daily needs of different groups of people in society. This refers to addressing a variety of language to certain individuals who may require its use according to their personal and/or professional needs. For example, a course of English for industrial engineering should be addressed to engineers who need to read manuals and research articles and to communicate with foreign engineers. In this sense, LSP classes largely focus on introducing new vocabulary forms which are common in a given context; this can be either professional or academic (Peters & Fernández, 2013). Consequently, the purpose of LSP is to help learners develop certain communicative competence that enable them to use the language in authentic real contexts with professional aims. In this sense, language learning needs to be understood as part of a content subject rather than an isolated subject, whereas learning contents involve exposure to self linguistic expressions in a particular context. According to Greere and Räsänen (2008), teaching LSP needs to be accompanied with a wide range of exercises and tasks in which the language forms can be practiced; consequently, students are benefited from both the content knowledge and the language skills acquired.

Similar to LSP, the content and language integrated approach (CLIL) offers a dual-focused integration of content and language in the same curriculum (Marsh, 2010). In this case, the connection between content and language is more noticeable than in LSP contexts since the objective of this approach is to teach the content of non linguistic subjects (inductive teaching) through the use of a foreign language in which there is no special attention to the language learning process (deductive learning). CLIL aims at fostering communicative situations in the classroom, in which the students' language acquisition process is unconscious (Coyle, Hood, and Marsh, 2010). However, CLIL admits adjusting and balancing the time devoted to teaching content and language (Cenoz, 2015). Consequently, language literacy support is frequently used in the CLIL classroom to help learners better understand non linguistic contents (Lyster, 2007). In other words, CLIL implements LSP when teachers find that it is necessary to provide students with language support.

3. EDUCATIONAL VIDEOGAMES FOR LSP

Classic and contemporary authors from different fields have stated that the best possible learning comes from 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). However, experimenting in the classroom can be limited to time and space constraints as well as to participants and other resources (Harmer, 2013); therefore, researchers in the field of education are constantly in need of finding or creating new alternatives that may overcome these limitations. In this educational context, 'experimenting' or 'experimentation' refer to the need that students complete tasks with interaction, reflection, and problem-solving. In this sense, videogames are part of a fiction world, but they can also be the clearest mirror of reality (Galloway, 2004). This type of experimentation in virtual platforms extends the time of exposure to the language and contents and consequently it can enhance the retention of the terminology (Roediger & Karpicke, 2006). Thus, educational videogames may provide students with a great support in LSP through the completion of challenging problem-solving tasks in any given context (Barr, 2013; Griffiths, 2002). Based on Malone (1981) and supported by other more recent authors, videogames are educational when they have a series of characteristics:

- Clear meaningful learning and playing goals for the students (Gee, 2005; Warren & Jones, 2008),
- Students' feedback on their progress (Gross, 2009; Van der Kleij, Feskens, & Eggen, 2015),
- Adapted difficulty to the learners' skills (Alexander, Sear & Oikonomou, 2013; O'Brien, et al, 2013),
- Random elements of surprise (Garris, Ahlers, & Driskell, 2002; King, Delfabbro, & Griffiths, 2010), and
- A suitable and attractive setting and design including the same features of non-educational videogames (Gallego-Durán & Llorens-Largo, 2015).

As it can be observed, there are a series of characteristics that are related to teach both qualitative and quantitative contents but also to entertain the students. A videogame cannot be understood as such without the playful factor. This fact is what motivates students to play and consequently to learn (Dondlinger, 2007). In the field of education, fostering motivation among students shall increase their efforts to complete the task and promote their enjoyment during the gaming 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. In this paper, the focus is on adventure videogames, more concretely on graphic-adventures (also known as point-and-click adventure games). Some examples of graphic-adventure videogames are Maniac Mansion (1987), The Secret of Monkey Island (1990), Myst (1993), The Longest Journey (1999), Syberia

(2002), Broken Age (2014), Dreamfall Chapters (2014), Game of Thrones (2014).

Moss (2011) defined graphic-adventures as videogames using graphics in order to get the player involved with the environment with a point-and-click interface. Cavallari, Hedberg & Harper (1992) explained that graphic-adventure games present artificial environments in which the user must interact with and solve a series of problems. They add that these videogames are usually presented as a chronological story in which the player must solve problems while interacting with fictional characters. The role of objects is fundamental in this type of videogames since most problems are solved with their use or the combination of these. In this sense, these videogames offer the player the responsibility to control and take decisions that somehow influence the development of the story. Dillon (2004) went further and introduced a list of characteristics of graphic-adventures:

- Text-based parser replaced with graphical point-and-click interface.
- Computer and player interaction visually triggered via icons representing an object in their inventory, or on a part of the image.
- The computer mouse key to navigating the experience.
- Less emphasis on plot development, with smaller scenarios when compared to text adventures.

4. GRAPHIC-ADVENTURE VIDEOGAMES FOR LANGUAGE AND CONTENT LEARNING IN LSP

As it has been explained previously in this paper, teaching language and contents through videogames seems to be a real pedagogical possibility. There are different studies that recommend the use of adventure videogames for language learning (see Agudo, Rico, & Sánchez, 2015; Bing, 2013; Chen & Yang, 2013; Huang & Huang, 2015; Van Rosmalen, Wilson & Hummel, 2013, among others). Following the taxonomy of videogames introduced by Sawyer and Smith (2008), this proposal should be classified as a game for education and its function is to help students to learn, in this case language for specific purposes. This proposal based on videogames aims at increasing the time of exposure to the target language and contents (input) and at providing further opportunities for practice (output) rather than suggesting noticeable changes in the methodology applied in the in-class sessions. As previously stated, LSP courses need to be accompanied by repetitive exercises and tasks to practice language forms (Greere & Räsänen, 2008). Traditional LSP didactic books usually include a wide range of activities for students' practice and even additional exercises available in their workbooks. More recently, publisher of didactic books have digitalized some of these activities in virtual platforms. Despite these platforms include some of the necessary elements for educational videogames, most of these materials cannot be considered videogames as those ones sold for entertaining purposes. These platforms do not seem to include the necessary emotion and engagement that players expect to find in videogames. Furthermore, they rarely follow a linear plot development or story that may engage the players as it happens when reading books or watching films. In this sense, these virtual platforms are useful tools for LSP classes as well as for general language learning, but videogames include the playful factor. This fact results in raising students' motivation and their engagement in completing their tasks (Dondlinger, 2007).

Graphic-adventure videogames can be used in LSP courses to help learners develop language skills and acquire contents related to the specific field of the course. This purpose may be achieved by designing tailored videogames based on the principles of language and content acquisition in LSP courses and integrating the main characteristics of graphic-adventures provided by Dillon (2004). Firstly, the graphical point-and-click interface gives the user autonomy to navigate and take decisions in the videogame world (Pereira, 2013). This fact establishes a suitable scenario for foreign language learning since autonomy and independence are fundamental for their learning and acquisition processes (Benson & Voller, 2014); in this sense, autonomy raises "learners' responsibility for their own learning, and their right to determine the direction of their own learning, the skills which can be learned and applied in self-directed learning and capacity for independent learning and the extents to which this can be suppressed by institutional education" (2014: 2-3).

Secondly, despite there is less emphasis on plot development and the scenarios are smaller in comparison to other adventure videogames, this can also be advantageous because the motion is slower and this facilitates the retention of language and content (Hubber & Loong, 2013). Besides, graphic-adventures do not necessarily include life or time restrictions; this means that the player can complete tasks after different attempts with no obligatory penalization (life or score). This feature fits with the process of language learning in LSP courses since students need to repeat exercises and tasks in order to practice language forms (Greere & Räsänen, 2008). Furthermore, another advantage of small scenarios is that students can exclusively focus on a limited amount of items in each stage rather than a more extended list at the same time. Thus, concerning language and content learning, graphic-adventure videogames provides students with time to reflect on the actions to be taken and with the possibility of repetition.

Thirdly, graphic-adventure videogames focuses on the use of different icons representing objects. In this sense, the use of objects is the basis for the acquisition of new terminology. On the one hand, students learn new terminology when they can develop a mind map in which they associate symbol, reference, and referent (Ogden, Richards, Ranulf, & Cassirer, 1923). This semantic triangle connects a thought (reference) to a word (symbol), a thought to an object or subject (referent), and also a word to an object or subject. In this sense, the comprehension of referents is based on the individual's previous experience (what they already know), and on the fact that individuals need a reference about the symbol that is represented. As result, students are introduced to new terminology in a comprehensible way rather through abstract concepts. On the other hand, players learn how these objects are used in a real context after testing their functions and combining them with other objects. According to Dickey (2005), videogames reconstructs narrative as a story with elements of immersion, agency, and participation; in this sense it can be understood that the use of graphic-adventure videogames promotes pragmatic learning through problem-based tasks within the different scenes along the story.

In addition to follow a story, general videogames also focuses on a series of objectives based on actions, missions or tasks which correspond to one of the main principles of playability (Bogost, 2007). Playability can be defined as the characteristics that make a videogame fun and entertaining to play (Prensky, 2001). The story

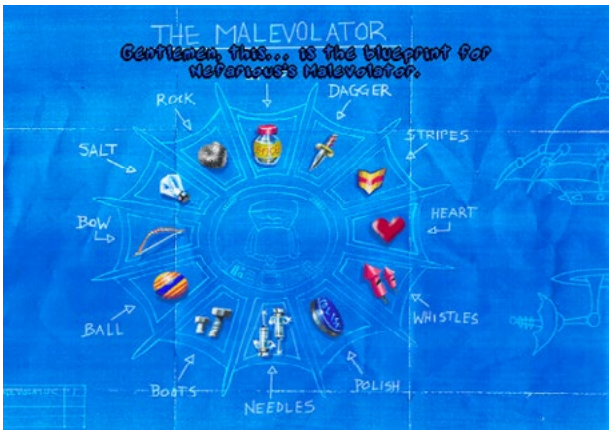
of the videogame advances as soon as the player completes a series of tasks that lead to the following ones. In this sense, this research identifies and suggests a taxonomy of tasks that can be applied to graphic-adventures with the aim of engaging learners to play (see table 1).

Table 1. Taxonomy of Tasks in Graphic-adventure Videogames

Taxonomy of Tasks in Graphic-adventure Videogames	
a	Gathering and Using objects
b	Puzzles
c	Quizzes
d	Follow-up Dialogues
e	Gaming Skills / Ability

A. GATHERING AND USING OBJECTS

Graphic-adventure videogames are mainly based on the use of objects. These objects are usually collected and stored in an inventory for later use (Rollings & Adams, 2003). They also need to be distinguishable from other non important objects in order to avoid problems related to playability that may lead the player to abandon the game for boredom or difficulty. Gathering objects may require the player to go-and-find or pick-and-drop actions. This collecting process may also involve buying, exchanging, negotiating through dialogues, or facing virtual defeats such as solving puzzles, testing knowledge in quizzes, or proving other gaming abilities and skills. As result of these experiences, players will become familiarized with these objects and their use. In the example provided below, graphic 1 shows an inventory with objects; in the field of LSP, the objects could be related to the target professional field. For example, in a story based on Business English for the tiling industry, the items to collect could be materials or products such as marble, slate, clay, mosaic, or documents such as invoices, letter of credit, or budget among others.



Graphic 1. Example of inventory of objects in 'Toonstruck'

B. PUZZLES

The use of puzzles in videogames is a useful resource in which players need to decode messages, find and use new items, or unlock new levels or areas (Chandler & Chandler, 2011; Fernandez-Vara & Osterweil, 2010). There are different puzzle categories such as Sudoku, crosswords, code cracker or word-search, among others; and all of them involve deductive reasoning skills (Adams, 2013). Deductive reasoning is a cognitive skill based on logical thinking in which conclusions are reached through multiple premises that are assumed to be true (Sternberg, 2009). In addition to the traditional non-linguistic puzzles, in the field of foreign language learning, students could put fragments of formal letters or documents into the correct order with the aim of testing their functional communicative use. In this case, players should read the documents and organize the structure according to the right structure. These fragments could be related to the organization of words, sentences or paragraphs. As Fernandez-Vara and Osterweil (2010) stated,

puzzle involve the use of cognitive strategies based on the exploration of space and objects.

Graphic 2. Example of puzzle in 'Facility 47'

C. QUIZZES

The main purpose of quizzes is to test and assess the players' knowledge. According to Mitchell, Inchingolo, Vatta, Gricar, Cisic, Petrovic, & Peyha (2006), quizzes in videogames are an entertaining way of testing factual knowledge while they enable players to experience a virtual situation such as a job interview or daily working situation. Quizzes can be based on activities such as multiple-choice, filling the gap, matching, or word formation among others. Quizzes in graphic-adventures are usually competitive and the reward to respond the questions correctly is usually to accede to new levels or obtain valuable objects. As result, this type of activity gives a sense of competitiveness and emotion to the game while the knowledge acquired is tested.

Graphic 3. Example of a Quiz

D. FOLLOW-UP DIALOGUES

Adventure games follow storylines which contain either oral or written dialogues (Rollings and Adams, 2006). These dialogues represent a conversation tree in which players are engaged in conversations with non-player characters and their interaction is based on the players' choice of pre-written lines (Scholder, & Zimmerman, 2003). These are automatically responded by the computer according to a pre-established finite list of possible answers and they are based on the players' previous choice. These conversations tend to offer valuable information about the development of the game (e.g.: information about objects, mission, tasks), or they can also result in acceding to new levels, revealing secrets, or obtaining objects (Rollings and Adams, 2006). Regarding the benefits of dialogues in language acquisition, these virtual situations can be a great resource of input; students can get explanations and they can also practice the target utterances in these simulated contexts, known as 'interactive fiction' (Montfort, 2005).

Graphic 4. Example of dialogue in 'Indiana Jones and the Last Crusade'

E. GAMES OF SKILL / ABILITY

Games of skill or ability are those games determined by either physical or mental skills. Physical skills may refer to ability or fast reactions, whereas mental ones concern logic thinking and strategy as well as trivia knowledge (Gooch & Living, 2004). Graphic-adventures can also include tasks that are more typically used in other genres of videogames. These activities can be an occasional complement to the story developed along the videogame. In this sense, it is not unusual to find videogames that introduce such as car races, shooting, sports, or strategy games among others; some of these could be introduced in the format of 'mini-games'. Despite some random facts may occur and alter the difficulty, the players are responsible to determine their outcome in the game (Minović, & Starčević, 2011). As it happens with other types of tasks, the purpose of these is mainly to entertain players and to increase their motivation and engagement in the game. The graphic below shows a game of pool that can be introduced in a graphic adventure with the aim of entertaining.

Graphic 5. Example of Game of Skill in 'Billiards 2016'

Having introduced the basis for language and content learning through educational videogames, it is also necessary to refer to how these graphic-adventure videogames can be applied into the LSP classroom following the ideas previously introduced by Moss (2011), Cavallari, Hedberg and Harper (1992) and Malone (1981), among other authors. In this sense, the proposal based on graphic-adventures for the LSP classroom needs to be adapted to the profession the subject is addressed to. For example, a videogame of English for Business purposes should be addressed to dealing with daily situations in which business people are frequently involved like business meetings, organizing trips, sales, telephone skills, or the use of specific documents or letters. In the same way, a videogame of German for Medical purposes could introduce usual situations in hospitals such as interaction with patients, attending to consultation, surgery work, or dealing with anatomy and diseases, among others. In this sense, the development of these videogames should be based on a chronological story divided into different scenarios in which some well defined objectives are established and a series of problems need to be solved by the player. Besides, it is characteristic in graphic-adventure videogames that the player may interact with fictional characters and the decisions taken must somehow influence the development of

the story. The videogame should also include some random elements and surprise that raise the players' interest and motivation as well as some feedback concerning their progress. It will also be necessary to adjust the level of difficulty to the player as it happens with the materials used in any traditional language or content course with the aim of increasing the students' level of motivation and appealing feeling towards the videogame, making the input comprehensible and the level of difficulty suitable for its adequate playability. As result of the combination of these features of educational videogames, it is expected that players will get involved with the virtual environment and they feel motivated to play the videogame, thus making the learning process entertaining and enjoyable but also effective.

5. CONCLUSION

This paper has described some features of graphic adventure videogames as a means of support in the LSP at tertiary level. As it has been discussed, most universities offer LSP courses based on teaching specific language forms and structures which are commonly used in a particular profession; these courses also involve teaching non-linguistic content in order to communicate successfully in a given specific context. In this sense, time restrictions are one of the main limitations in this type of courses. The exposure to the language and the opportunities for output are usually limited to the time in the classroom as well as to the time devoted to the exercises and tasks students do at home. Since one of the keys of language learning is repetition, it seems that the use of videogames can be an alternative method to increase the time students are exposed to the target language. Furthermore, the playful component in videogames will entertain students while learning, keeping them motivated and receptive to this educational purpose. This proposal suggests that graphic-adventure videogames can be used out of the classroom as support to the in-session time. In this sense, this research introduces a series of features of educational videogames combined with theories of teaching language and content for specific purposes with the aim of describing the needs and characteristics of tailored graphic-adventures designed for LSP courses as well as for language support in CLIL.

It seems that graphic adventure videogames are a good resource for teaching LSP since they simulate real-life situations that can be based on the target area of knowledge. Furthermore, the use of objects and its applications help students learn specific terminology in a given profession-based context through problem-solving tasks. This paper suggests that the characteristics of graphic adventures are suitable to support LSP programs. As it has been commented, gathering and using objects are necessary actions to acquire new terminology. This procedure promotes that the items must be manipulated, and consequently students can create their own mind maps based on their use and facilitates their understanding and retention. Similarly, puzzles in the field of languages are a valuable tool to introduce, analyze and construct specific language forms derived from professional fields and develop cognitive strategies based on the exploration of space and objects at the same time. It has been previously suggested that students could play puzzles in order to organize fragments of a business letter; these could be based on the organization of words, sentences and/or paragraphs. Language forms can also be introduced and practiced through follow-up dialogues; in this case students can interact with other fictional characters and analyze and use the

correct forms of the language. In addition, all this knowledge introduced with these activities can be tested and assessed with quizzes. These quizzes can be used to determine if the players are ready to continue in the next level or, in the contrary, they should remain and reinforce their knowledge. At last, this paper has also suggested introducing games related to skills and ability. These games should be related to performing actions based on the learning purposes of the program. However, their main function is to entertain players and to increase their motivation and engagement in the game. Educational games must set a playful atmosphere that transmit emotion to the player; thus, it should be necessary to incorporate actions that may rise the interest of the player, regardless if they are about racing, shooting, sports, or board games, among others.

These considerations suggest that supporting LSP programs with graphic adventures could be a useful resource for both teachers and learners, who would extend their time of exposure and motivate students to learn while playing. As it has been commented, the focus on LSP programs is due to the fact that its objective is to instruct learners with certain degree of communicative competence in the target language and who want to focus on specific professional or academic contexts and perform communicative functions based on a particular profession. As result, the range of vocabulary and actions to be performed according to the learning objectives of the LSP program are closer in comparison to a General Language one; and consequently they can be easily compiled and introduced in the videogame as well as in the classroom.

Regarding the limitations in this study, the proposal introduced in this literature review should be tested with a self-developed videogame for a LSP subject at tertiary level whereas the real benefits of this application in the acquisition of language and content in professional contexts should be analyzed and discussed. The development of a videogame with these characteristics would require the collaboration among videogame developers, academics or professionals in the target field (content), and language experts. This would also be restricted by technical and budget reasons. Despite these restrictions, this proposal could be highly beneficial for students, who would receive additional time of exposure and practice in a playful way, as well as for publishers of LSP didactic books, who could add value to their products with this service.

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