

## Massive Multiplayer Online Game for Spanish Language Learning

**P.I. Vega, F. Almaraz, O. Gil**

University of Salamanca (Spain)

[pvega@usal.es](mailto:pvega@usal.es), [falmaraz@usal.es](mailto:falmaraz@usal.es), [oscar.gil@usal.es](mailto:oscar.gil@usal.es)

### Abstract

*Spanish is currently the second most used language in the world for communication, and the second most studied foreign language. It is estimated that by the year 2030 Spanish will be the second most spoken language in the world, spoken by 7.5% of the world population. This development has given rise to the importance of Spanish on the internet, as evidenced by the vast amount of content available in the Spanish language, and in the publishing, tourist and service industries in general, particularly concerning the teaching of Spanish as a second language.*

*The University of Salamanca (USAL) is recognized worldwide as the "University of Spanish". Its language and culture courses for foreign students were conceived and developed in 1929, giving the University of Salamanca the longest standing tradition in Spain for this field as well. Each year the university welcomes more than 10,000 international students, including Spanish language students, Erasmus scholars, and undergraduate and graduate students, for all of whom Spanish is not their native tongue.*

*With the aim of innovating Spanish language teaching, the Vice-Chancellorship of Innovation at the USAL encourages the development of different projects, such as the use of 3D videogames, for teaching Spanish. The project aims to build a Massive Multiplayer Online Game (MMOG), set in the city of Salamanca where users engage in the same type of daily routine situations as any other language student. This tool will be used to support Spanish language teaching by practicing communicative situations in a fun and engaging way, while strengthening the collaboration and interaction among students.*

### 1. Introduction

The use of Information and Communication Technology (ICT) in different educational disciplines has led to important changes in the conception and methodology of teaching over the last 20 years, particularly in the field of languages. ICT enhances student motivation and autonomy [4], enabling students to make personalized decisions regarding their learning process. This has in turn given rise to the computer-assisted language learning (CALL) paradigm [5][7], which can be divided into three phases: Behavioristic, Communicative and Integrative. The latter phase includes the use of multimedia and the Internet [5].

Internet represents a qualitative leap in terms of providing new learning environments that bring together text, audio, video and graphics [1][2]. Accessible at any time and from any place, its advantages extend beyond physical mediums such as CD-ROMS or DVD. The Internet provides an added value to CALL by allowing it to be more social; it provides a high level of interactivity and collaboration, focusing on students, their needs and abilities [3], while transforming the role of the teacher to that of a tutor.

In addition to the web, that is a repository of didactic resources, or the traditional LMS (Learning Management Systems), which offer a set of functionalities such as resource storage or online practical

exercises; there have been attempts to resort to other technologies or tools that can be applied to language development, as videogame.

Although it is often stated that videogames are merely forms of entertainment with no educational value whatsoever, some experts defend the notion that videogames implement different educational practices and incorporate complex cognitive processes [8][9].

Of the different types of videogames, those that offer the greatest possibility of being used as learning tools are virtual worlds or, more specifically, Massive Multiplayer Online Games (MMOG) [10]. Some of the details specific to MMOG were the player-character relationship in which the player identifies with their virtual world character. Between the late 80s and the mid-90s, these games turned into small graphical adventures that got their last big push with the development of the Internet.

Some of the features that characterize modern 3D multiplayer virtual worlds are:

- They are played on the Internet.
- They require paid subscription.
- They are multiplayer, which means that no single player is the focus of the game and there is no protagonist.
- They are massive, a large number of characters coexist in the same virtual world.
- They are steadfast; the world in which the game evolves is independent of the player and has its own history.
- The goal is not to win, but to exist and improve.
- Each player is represented by a character, their alter ego in the game universe, and an avatar that is its graphical representation.

The Vice-Chancellorship of Innovation at the University of Salamanca, in line with the Innovative Projects Unit and the policy of technological innovation within the university, wishes to explore the possibilities offered by videogames and virtual worlds in one of the most distinguished strongholds of this university: the teaching of Spanish as a foreign language. The University of Salamanca is recognized internationally as an authority in the teaching of Spanish as a foreign language. The destination point of thousands of foreign students every year, the University has been offering Spanish learning programs for almost a century. Moreover, the University has vast experience in training teachers of Spanish who have come from countries within and outside of Europe, such as the United States, China, Japan and Brazil.

This project was developed by the University of Salamanca in collaboration with ENNE Entertainment Studios and was granted public funding from the Spanish Ministry of Industry for its unique and interesting quality as a mechanism to promote the Spanish language and culture. The following section will provide a brief review of the functionalities of the videogame, followed by the conclusions that were reached during the development.

## 2. Spanish learning in a virtual world

The objective of this project is to develop a MMOG for Spanish language learning that can provide a cultural immersion experience similar to that of actually living in Spain, and serve as a complementary support tool to the education received from the traditional classroom.

To this end the videogame was set in Salamanca, a small city near Portugal, home to so many important events in Spanish history and considered the cradle of the modern Spanish language where, in fact, the first Spanish grammar was published in 1492 by Antonio de Nebrija. The backdrop setting in the videogame includes some of the most noteworthy historical monuments of this city, including the Plaza Mayor or the New and the Old Cathedral, as well as some of the most representative buildings of the University -itself a World Heritage site- such as the historical building of the University, the Chancellor's office, the School Courtyard, the Anaya Palace, and the Fonseca

Palace. There are also graphical representations of various areas of tourist interest inside the University as the Historical Library of the University of Salamanca, which has one of the most important bibliographical collections in Spain, including works dating as far back as the XIII century when the University was founded.



**Fig 1. Historical Library of the University of Salamanca**

The videogame will be available as a tool for Spanish teachers, who can use it with their students for practical situation activities that emulate everyday situations in which the foreign students may find themselves, allowing them to practice one or more linguistic skills (reading, writing, comprehension, etc.). This tool will include practice activities according to the different levels of Spanish language learning.

In order to adapt its methodology for teaching Spanish, the University created new exercises to be developed in each of the different scenarios, using a task-based learning paradigm (*Task Based Language Learning*). Through a collaborative effort that involves exchanging information, negotiating and solving potential problems that may arise; the students discover and apply communicative functions (i.e. purpose or intention of the speaker when they communicate: greetings, asking permission, giving instructions, etc.) and the grammatical, lexical and cultural elements required to carry out the given task. The project also incorporates *Conceptual Play Spaces*, which are contexts created around a study plan, that combine knowledge of the learning process and gaming design principles to establish a learning context that is entertaining and specific to each student. These spaces can be experienced through the use of:

- **Conceptual Participation:** where the students carry out legitimate tasks, exploring and interacting with the narrative, which serves as the framework for the didactic content.
- **Immersive Participation:** where the students assume responsibilities (participation roles) examining and socializing with persons from the real and virtual world.
- **Impactive Participation:** where the events unfold according to the trajectory of each student and the game's narrative, creating new opportunities that determine the evolution of the character.
- **Reflexive Participation:** where the decisions made by the student, and the structures for the collaboration and personal relationships define the virtual self with unique characteristics and potential, leading the student to reflect on their activities and focus more on the material learned.

Using the product as a support tool for learning, the teacher can keep a record of the results of each exercise for each student and the students will be provided with a chat to contact and communicate with their classmates, which also encourages the practice of the language. The teacher has full access to any chat history, which provides an additional source of information regarding the level of each student.

As with any MMOG, the student is represented graphically by an avatar, which can be customized according to each student's personal taste by selecting among a multitude of physical details.



**Fig 2. Example of an avatar**

Once the videogame starts up and the player has defined a personal avatar, the player can access the virtual world, with the Plaza Mayor of Salamanca as its starting point. The player can wander freely with the avatar through the city streets and neighborhoods of Salamanca. This provides the videogame with the additional function of serving as an attractive tour guide that will promote the cultural heritage of the city. The game itself can also represent different environments in which the practice activities take place, such as inside an apartment, a bank, a bar or a supermarket. The idea is to represent different situations that any language student would encounter when visiting another country. The main screen of the videogame displays different functionalities to the player. It includes a chat window to speak with other classmates in the group, interact with them to carry out group activities, and practice the language through reading and writing. Additionally, the player will have immediate access to the main Spanish language grammar rules, including examples that can be used as a reference in case they are experiencing difficulty in resolving any of the practice activities.

A set of emotes has also been included, as they constitute a rich form of expression in virtual worlds and enable a series of actions communicate an emotion or expression.

Users can also select from various individual or group mini-games that allow them to continue practicing the language. For example, there is a trivia game and a hangman game that will complement the activities from the videogame and promote socializing and teamwork among the students. It also features pronunciation recognition, so that students can listen to the correct pronunciation of a word as well as record and listen to their own pronunciation.

Finally, the game also provides the student with a panel that displays all of the practice activities that the instructor has assigned. These activities are grouped:

1. *Find the differences*: task in which the player must find the differences between two similar scenes, characters or objects.
2. *Tell the story*: which begins with a set of video clips from which the student must imagine a context and create a dialogue that makes sense for the given clip.
3. *Cloze 3D*: targets vocabulary practice by requiring the student to match specific objects with the appropriate name tag.
4. *History order*: the student is given a jumbled group of events and corresponding dialogue that must be placed into the correct order chronology for the dialogue to make sense.
5. *Find the errors*: students can read different conversations containing grammatical or syntactical errors that must be identified and corrected.
6. *Listening*: the student must choose the correct answer based on the conversations they listen to; this activity can be done individually or in groups.

There are different activities set in different environments and contexts that focus on specific communicative skills (asking for permission, expressing obligation, expressing certainty, etc.) or on learning different vocabulary groups (food, furniture, material, places, etc.).

### 3. Conclusions

The videogame is currently in its final phase of development, and there are already several educational centers that are interested in using it. The University of Washington is in charge of performing a beta test and providing useful feedback for adapting the product to the needs of the end users. The feedback received from the group of students and professors that are using the product has been very positive. This is an important point with regards to future sales and distribution given that the United States may become the primary market for this product, having a keen interest in the city of Salamanca and its University, as both are very well known and accepted as an authority in teaching Spanish as a foreign language.

The first phase of distribution will include level B1 of Spanish, while future releases will incorporate levels B2, C1 and C2. The virtual world developed within this product has tremendous potential to be used as a conduit for promoting tourism and Spanish literature, incorporating new contents and activities, and to serve as an international window into the University of Salamanca.

This project will be in a continual state of evolution, incorporating the latest technologies in digital animation and artificial intelligence applied to the world of videogames. The multiplatform and multisystem characteristics are goals we expect to reach shortly.

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