

**Second Language Teaching in Virtual Worlds**

The Case of European College Students under the ERASMUS Program

**Multi-User Virtual Environments for the Classroom:  
Practical Approaches to Teaching in Virtual Worlds**

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## ABSTRACT

This project is a proposal for a case study that aims to describe and understand communicative and pedagogical processes involved in Second Life<sup>®</sup> (SL<sup>™</sup>) in a context of second language learning, by modelling in-world lessons of Portuguese as a second language for ERASMUS students<sup>1</sup> arriving in Portugal. The purpose is to provide examples of situated e-learning driven activities and perceive how an immersive context stimulates learning by involving students in a virtual reality situation, where real life language context situations are provoked and where 'not possible in real life' learning routines happen. This will allow experiencing the advantages of this platform compared to physical life teaching and learning contexts, through the inherent characteristics of this medium, such as the synchronous and simultaneous use of voice and text.

## INTRODUCTION

Modernity has brought changes to our society and all citizens that are living and growing in this new age of knowledge feel the new canons of an incoming age (Loureiro and Bettencourt, 2009). Education, an important area of social and civilization development, cannot disregard those new changes, and may not be disconnect from ongoing changes in teaching and learning theories and practices since the last century. For that reason, teachers have being challenged to develop new strategies of teaching and learning, in order to accomplish the requirements of a networked society and improve the know-how of their students, in a digital age. Nowadays, we are living in the age of the "digital native" (Grewal and Harris, 2009), and due to the advantages of the social web, students "have a lot of practice of e-mailing, blogging, googling, chatting, gaming (...) (Bekkers, 2009). They are multitasking, just like the new paradigms of education requests.

Students are no longer simple information collectors. They are now more active and reactive users. They develop and share contents and information. In fact, each of us are content builders, which is shared by a new type of communicators. However, Web 2.0 is, nowadays, an old-fashion paradigm. We are, today, in the presence of what some academics call the Web 3.0 (Loureiro and Bettencourt, 2009). This concept is related to virtual environments, an interactive 3D dimensional universe that is experienced by the user with avatars, and that enables sharing, co-creation and communication to a next level in education. A new era of a real collaborative web is being explored, where "human become more linked together (...) more networked (...) and Internet has no limits or borders" (Veen and Vrakking, 2006, cited by Loureiro, 2009).

According with the Web 3.0 assumptions, Second Life, having itself MUVes (Multi-User Virtual Environment) characteristics, may have huge possibilities if used for education and teaching purposes.

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<sup>1</sup> The ERASMUS Program is named after the Dutch philosopher, Desiderius Erasmus of Rotterdam, known as an opponent of dogmatism, who lived and worked in many places in Europe to expand his knowledge and gain new insights. Later, it was given the backronym *European Scheme for the Mobility for University Students*.

Our target group, for this e-learning project, are the Erasmus college students. The Erasmus Program was established in 1987. It is a mobility program among universities of member states of the European Union, and also of other associated states, that involves students and teachers, and allows the former to study in another country for 3, 6 or 12 months. The main goal of the Erasmus Program is to encourage and support students and teachers' academic mobility inside the European Union, and other European countries such as Norway, Iceland, Turkey or Liechtenstein.

In the Erasmus program, students need to be exposed to the language of the foreign country before their period of studying abroad. This takes time and effort for languages that are recognized as being difficult. Proficiency in a foreign language can explain the difference between moving students and non-moving students. Students will accept very easily to learn English and probably other widely spoken languages but they will be more reluctant to learn other languages unless they are motivated by specific reasons (Fuller *et al.*, 2005). SL may allow an immersion experience, and keep students motivated and focused to learn a foreign language. We have perceived that “education began, slowly, to realize that many of the attributes of great game playing, from the intellectual challenge to the provision of multiple learning styles had an immediate part of to play in learning”. (Freitas and Neumann, 2009).

In this study, our focus group is the Erasmus students who come to Portugal to study.

## **THE E-LEARNING CONTEXT IN SECOND LIFE**

In recent years, some educators come up with ideas of transforming existing platforms to provide rich multimedia experience, together with open-ended content creation and large global community, the already focused MUVES (Kapp and O'Driscoll, 2010). The aim is to use MUVE as an immersive learning environment to provide a new perspective of implementing situated learning or other methods through the use of new technology.

Multi-user virtual environments (MUVES) provide opportunities for students to explore authentic learning environments. The process of internalization results of multiple sensory inputs such as visual, auditory and tactile (Perez, 2009). Learning is embedded within activity, context and culture. Social interaction is a critical component of situated learning, as learners become involved in “the community of practice” (Lau and Wong, 2009). Second language acquisition may be a challenging task, specially for busy young adults. It requires the repetition of communicative meaningful interactions with balanced input and output situations, so that the learner may acquire as much language functions, vocabulary, syntax, and grammar in context as possible. The most effective process to achieve this is by providing a learning objective in different contexts, specially through a task-based approach. Interaction and building upon existing knowledge is the usual learning routines in virtual learning environments. Students collaborate in most cases and build together their knowledge. This is also referred to as problem-solving learning. This happens due to the interactive nature of the MUVES, as well as a collaborative approach to the acquisition of new concepts and high level of engagement (Perez, 2009). One way of targeting this is by the use of simulations, because they provide learning by doing routine, which replicates elements of the real situation and put the learner in the centre of the process (Castronova, 2005). A project-based scenario approach is also a good process to deal with the technological limitations that students may have with the interface, since it is possible to organize activities for the first sessions that ease the difficulties associated with the immersive experience (Baudrillard, 2001). The three-dimensionality enabled by a virtual world promotes the sense of presence and interactiveness, which facilitates the learning experience, compared to other non-immersive e-learning routines. An experiential simulation such as this virtual environment provides the basis for empathic understanding, facilitating collaboration and

reducing the affective filter caused by the negative emotional responses of the learner when exposed to a foreign language (Garcia, 1994).

It is possible to apply different learning strategies considering the versatility of this environment (Leonard *et al.*, 2009). The different socialization patterns, the loss of identity and the isolation due to the language barrier can be also addressed in this environment. The theoretical context for this study is based on constructivism, a cognitive approach, the multiple intelligences theory and communicative skills. The virtual world assumes the role of a mediator of the sometimes awe-inspiring rich linguistic and cultural information which can be found in real-life experiences. Learner's diverse learning styles (e.g.: auditory, kinetic, etc) could be met by providing a multimedia context in which a mirror of physical life is obtainable but presents organized and resumed information. This multi-directional communication model is the framework where these theories are applied, in the virtual world. It is possible to assess fully interactivity by observing instant messaging among students and between them and the teacher. Cooperative working relationships are also observable by interaction of students through objects and notecards sharing (Brown *et al.*, 2008). In this paradigm, the teacher becomes a facilitator, integrating tools into the teaching process and assisting students in the tasks (Chodos *et al.*, 2009).

## **SOCIOLOGICAL PERSPECTIVE OF VIRTUAL WORLDS (VWS)**

A phenomenological interpretation of the social concept could provide a new analysis about virtual worlds, based on social relationships (Schutz and Luckmann, 1971). That is, we only understand, in an efficient way, what we experience, in our daily routines, in our social life. One of the reasons why this is particularly challenging for instructors is how learning is conceptualized. The social nature of virtual worlds is built upon the dialogic model substantially important (Kahai *et al.*, 2007). Sociology says that social is not just defined as interactions between individuals and groups, but also the relations between individuals and the spaces they co-construct around themselves. The act of building and producing hence becomes a powerful training and teaching tool supporting socialization and extending opportunities for conceptual thinking and exploration.

Nowadays, the mass communication media are creating a "global village", because people, all over the world, see the globalization of events (McLuhan, 1964). In the present SL project, we have explored the concept of "hyper-reality" (Andersen, 2002), in the cyberspace way. The composition of the virtual world environment helps to make an appropriated guide to the technological education. Second Life is a new world of opportunities in this subject: it can enhance learning skills, motivating students to engage more actively in teaching and learning activities. In such a pedagogical environment, SL can facilitate different kinds of processes, such as searching for information, presenting information, producing and organizing materials, and coordinating the different tasks in the work process, with more detail. In a social point of view, this method will bring a "new all relationship between computer interaction, social interaction and other forms of everyday practices" (Drotner, 1999). SL is a mixed environment that can be situated in an area known as "educational entertainment" (Cotton and Oliver, 1994). Edutainment is a neologism composed of the words education and entertainment. This term has its origin based on printed media, such as textbooks, encyclopedias and children's books, which present a rich combination of textual information and images in order to better exemplify the matter presented. According to Cotton and Oliver (1994) Based on the changes caused by information technology, educators now have a new role to play, because education is becoming part of the virtual business as SL. This is part of a new model of education for the information age, based on learning theories, specially within a socio-cultural perspective and results from

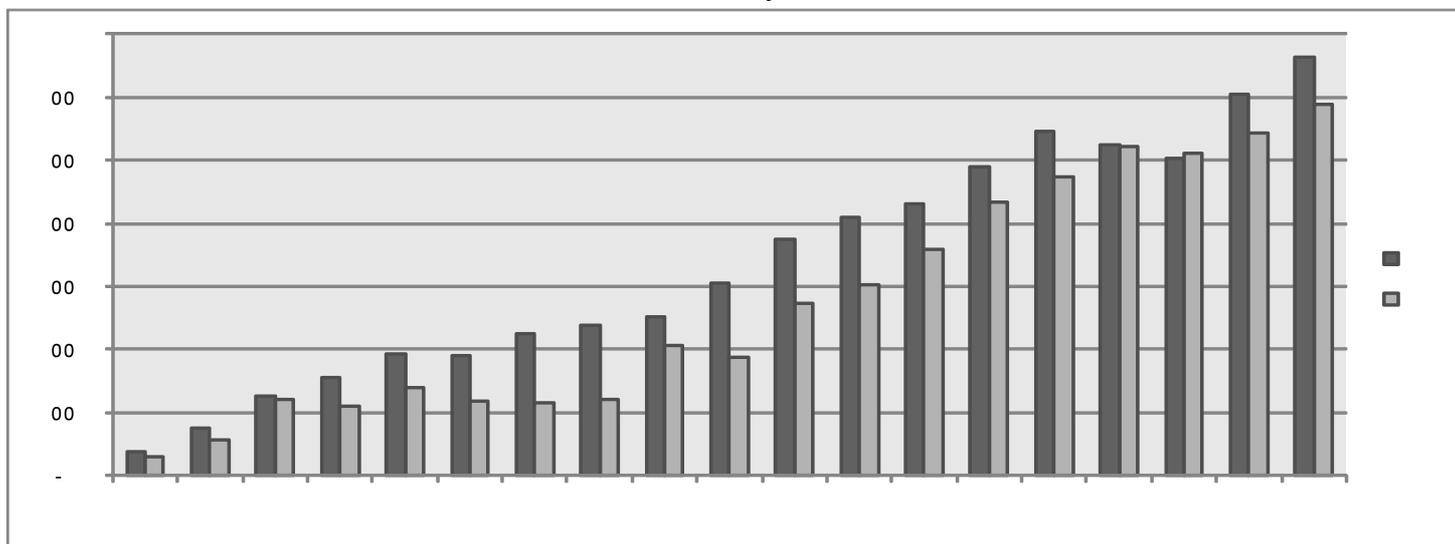
educational research, that combines practice and action research, in areas more in vogue such as motivation and the management of change.

## THEORETICAL PROPOSAL

### Objectives

The goal of this proposal is to understand communicational processes in Second Life in a context of second language learning aimed at ERASMUS students and conceptualize and applicate certain activities with a focus group of students. The learning language (L2) is Portuguese. This proposal should contribute to the explanation of how SL, as a virtual reality immersive tool, empowers the teaching and learning of a second language. This may occur due to two main reasons. On the one hand, the distance effect present in traditional e-learning tools such *Moodle* or *Joomla* is eliminated. Distance learning becomes much more feasible when students from around the world can log in and interact as if they were next to each other (Fuller *et al.*, 2005). On the other hand, the use of this platform suggests the reformulation of the teaching and learning paradigm. The educational experiences of virtual worlds do not exist inherently within these worlds, but rather within the ways in which the users engage their ideas within these worlds. Therefore, the curricula of virtual worlds includes what happens as well as when, how, with whom, and why (Carpenter, 2009).

As said before, our target group for this e-learning project are the Erasmus students. The main goal of the ERASMUS Program is to encourage and support students and teachers' academic mobility inside the European Union, and other European countries such as Norway, Iceland, Turkey or Liechtenstein. The University of Porto has an active participation in the program. In 1990 it has received 31 foreign students, and, in 2008, 589. Table 1 illustrates the evolution of the number of students involved each year:



Out	38	76	126	155	194	191	224	239	253	304	374	409	432	490	547	525	503	604	664
In	31	57	121	109	139	118	116	120	205	188	274	303	359	434	474	521	511	542	589

Table 1: Evolution of student mobility - ERASMUS out & in 1990/91 - 2008/09 (University of Porto, 2009)

This mobility of foreign students motivates the emergence of this study, aimed at testing a virtual learning environment for Portuguese non native speakers' students.

The purpose of the study will be achieved by the conception and application of a specific number of activities with a focus group of students.

## **Hypothesis**

The best way to conduct an orderly and precise organization of a research is around working hypotheses, without sacrificing the spirit of discovery and curiosity that characterizes all intellectual effort. In addition, a work cannot be considered a real investigation if it isn't structured around one or several hypotheses.

First of all, a hypothesis means, by definition, a spirit of discovery that should characterize any scientific investigation. Supported by a theoretical reflexion and previous knowledge of a studied phenomenon, it seems like a presupposition about the real behavior of the real studied objects. "In many forms and processes, the investigations present themselves always like shuttle movements, between a theoretical reflexion and an empiric work. The hypotheses are the main actors of this movement: provide them the range and assure a coherence between the work parts." (Quivy and Campenhout, 2003).

This academic investigation project presents the following hypotheses:

- Students can learn a foreign language in a virtual world immersion context – Second Life;
- Students can overcome cultural limitations and expectations usual in traditional classrooms.

## **Methodology**

As in other experiments with learning in VWs (Twining and Footring, 2010), the methodology used merges features of case study and quasi-experimental design. In this study we gathered European students located in Porto and managed to experiment two lessons with a focus group. Focus group research involves organized discussion with a selected group of individuals to gain information about a topic. In this case, we gathered Erasmus students to figure out how sustainable it is to teach a foreign language in virtual worlds. We have built a questionnaire to apply after the focus group sessions in Second Life. Considering the universe of students that may participate in this case study, a preliminary questionnaire was applied in order to characterize the students as far as computer technology is concerned: hardware, Internet habits and attitude towards technology. The pos-questionnaire built to apply after the focus group is based on evaluation categories about the aftermath immersion and learning experiences.

The lessons were devised taking into account a computer-mediated communication (CMC) paradigm. The goal is not to reproduce activities in-world that could be equally be done in real life. The use of this technology for the novelty factor is a misuse that can be demotivating for all (Teeler and Gray, 2000), (Windeatt *et al.*, 2000). Thus, we first identified a pedagogy and assessed the possibilities of the platform. Then, we designed the learning experience and implemented it. The final stage will be the analysis and evaluation.

Due to technological limitation associated with network heavy traffic, it was impossible to succeed in the usage of voice. However, we have already tried some experimental lessons but the survey built to apply after the immersive learning experience has not been applied yet. That will be the future direction of this study.

## **Preliminary Pre-Questionnaire Analysis**

The preliminary questionnaire was applied in order to characterize the students as far as computer technology is concerned: hardware, Internet habits, and attitude towards technology. The questionnaire was applied to 27 Erasmus students whose mother tongue is non-romanic. This trait is particularly important, since the more distant the native language (L1) is from the learning language (L2) the more relevant is the students' learning.

The social-demography variables are: age, gender, and nationality. As far as age is concerned, the mode is 22 years-old, although there are students with 33 years-old, which means that the range is considerable. 63% of the students are male and 37% are female. Countries vary from Belgium, Poland, Germany, USA, and Greece, among others. The presence of non-European nations is explained by the extension of the Erasmus program to non-European countries.

Of the 27 students, 37% have brought their laptop computer to Portugal. 63% don't have a laptop computer. This may hinder the usage of information technology, and also the participation in a study such as this one.

A significant value is the one related to the time spent online weekly for recreational, work or studying activities. 40,7% answered that they are more than 9 hours a week, approximately, on the Internet. As far as online activities are concerned, 38,5% of the universe uses instant message daily and 63% uses text message daily, and 29,6% uses voice over Internet daily too. This may be explained by the fact that these students are far from their homes and friends or that they are using this communication tools to build new social networks in the community where they are inserted. 70,4% of the students inquired never play online multi-user computer games and 88,9% never use virtual worlds. This could suggest a low level of incidence of 3D online environments. This is directly related to the need of powerful hardware and broadband connections to use these platforms.

## **Pedagogy and Applicability**

As said, in this proposal, the applied pedagogy was holistic with a constructivist approach and a task-based model. This means that the learning process involves individual understanding and performance of tasks as well as group activities. Frequent feedback must be provided and the learning is based on stages of personal and social constructs. Students first conceptualise, then construct and finally apply by engaging with others (Slone, 2009).

Many companies are known to be using Second Life as a meeting space, a research environment and an educational area, considering the vast amount of possibilities that it offers, specially contextual and authentic social interactions, including role plays and simulations (Peachey, 2008). Similar environments that potentiate ludic-driven learning are video games and multiplayer game worlds. Krashen, an important methodologist in second language acquisition, refers that "the major function of the second language classroom is to provide intake for acquisition" (Krashen, 1981: 101). This statement disregards the necessity of providing opportunities for output by the learner. However, his observations and conclusions at the time are also applicable to the process of online learning and teaching through 3D virtual worlds, as noticed too by (Grant, 2008). Krashen mentions the necessity of stimulating fluent outputs based on active meaningful communication rather than controlled and conscious utterances. Second language acquisition must balance moments of controlled output and informal unstructured production that can be provided by immersion of the learner in the linguistic environment of the target language. However, the learners must be directly and actively engaged in a meaningful communication situation, where the target language is being regularly and actively used. 3D virtual worlds such as Second Life may provide such an environment that allows and stimulates students to produce output utterances, and most importantly, allows, at the same time, for tutors to provide correction and guide learners to conscious learning of the

language without interrupting the linguistic process and the student's engagement. This happens due to the functionalities of the software. The use of this platform allows the use of voice streams by the teacher and the students in a regular interaction. During the students utterances, the teacher may use text chat to guide or correct some structures. This is possible also in an input activity. As the the teacher speaks, he or she may write some of the structures used, or some words, to allow the phonetic and graphemic association by the students. This will provide two simultaneous language inputs for students: listening and reading. Other possible application for the usage of voiced and texted interactions is the possibility of dialogs between the teacher and the students, and among students (or even among students and native speakers of the target language) - role played or spontaneous - be recorded and analysed in a ulterior moment (Wilhelm *et al.*, 2009). Students, this way, realise they are not passive receivers of information, but actively build the language structures as needed, and, most importantly, without breaking the communication flow, which is a situation not possible in a classical learning environment or even in a casual language communication flow. A 3D immersion virtual environment that combines text and voice allows for these combined informal and structured language outputs that may be associated to relevant and meaningful communication situations. This provides a 3D learning experience (3DLE). Besides, it facilitates an individualised instructional context, by providing targeted feedback to individual students, through private text chat or private talk (Haughton and Romero, 2009). This is of utmost importance because a virtual presence reduces fears and embarrassment that the learner may feel. He or she may actually interact with other under the supposition of using an alter ego, allowing confidence levels to rise (Henderson *et al.*, 2009).

The following table, adapted from Haughton and Romero (2009) explains the importance of knowing the students' motivations, so that the instructor may adapted the curricula to meet their needs and goals. We had this care in the lessons we conceived. The contents take into consideration the aspirations and needs of foreign European students that are bound to arrive in a different European country where a different language is spoken. One of their first endeavours is to find appropriate lodging. That is the reason why one of the lessons is focused on parts of the house, types of houses and describing city environments.

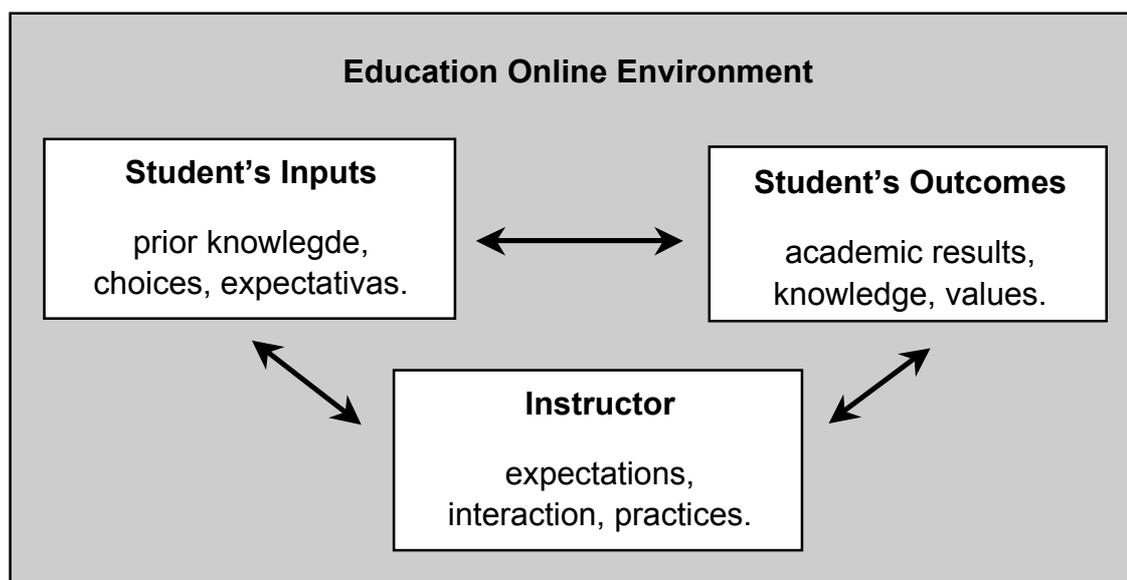


Table 2 - Relationships between student's inputs, outcomes and the instructor (Haughton and Romero, 2009, adapted)

Many educators fall in the trap of replicating a traditional class-based approach (Brown *et al.*, 2008). A field trip to other places in the simulator, role plays, guided tours or scavenger

hunts are part of a more efficient model in terms of taking advantage of the virtual environment. Students and educators should not expect to behave in a similar way as in a traditional educational setting (Kapp and O'Driscoll, 2010). If this happens, the value of a 3D classroom is not perceived. Learners must be in a context where interaction with the environment and each others is important, which means that moving around is important. In the words of Kapp and O'Driscoll: "The replication of a existing classroom environment brings no value to the learning experience." (p.323).

The lessons were devised taking into the medium where they would occur, under a computer-mediated communication (CMC) paradigm. It allows a diversity of the language learning process and a change on the linguistic focus of the proposed tasks, incrementing the motivation levels: "we need to vary as many aspects of the learning process as possible ... we can vary the linguistic focus of the tasks ... the main language skills file that the tasks activate." (Dörnyei, 2001). The goal is not to reproduce activities inworld that could be equally be done in real life. The use of this technology for the novelty factor is a misuse that can be demotivating for all (Teeler and Gray, 2000) and (Windeatt *et al.*, 2000). Thus, we first identified a pedagogy and assessed the possibilities of the platform. Then, we designed the learning experience and implemented it. The final stage will be the analysis and evaluation.

There are several learning theories applicable in the context of education in virtual worlds. (Moschini, 2010) has put forward a description of some of them: constructivism, situated learning, experiential learning, problem-based learning and digital game-based learning (Moschini, 2010). Constructivism is learner centered and focuses on the construction of the knowledge through an interaction with other learners and the environment. Here, the teacher's role is different: a facilitator. Second Life is an excellent medium where a constructivist pedagogic approach may be adopted. In a top level activity, students will be building their own materials, interacting with each other and actively engaging in language situations, without realizing the rationale behind the activity. The skills needed to complete the tasks are acquired in the virtual environment and considered part of the activity. This task-based learning framework also allows for students to acquire skills in different areas, according to their needs, by their access to resources and experiences at their own pace. The interactions also promote peer-to-peer learning, as students assume a tutoring role and disseminate skills and knowledge acquired in the virtual environment (Brown *et al.*, 2008). In situated learning, the student tries to solve a problem posed by the tutor, whose role is to supervise the activity. Since there is a practice of mutual help for new users in virtual worlds, this approach is also productive in this environment. Experiential learning is based on an attitude of reflexion by the learner, towards his or her experiences. By watching the activities of their peers, learners reflect on the language inputs and outputs and learn by mimicking. A problem-based approach is based on the ability of the learner to analyze a situation that implicates some sort of strategy to achieve the solving of a particular problem that is involved. The key to this model is the involvement of the other students in the process of meeting the challenge that is being put by the teacher, through the context he provides. Finally, a digital games-based learning strategy uses games for educational purposes. Second Life is not a game, as it does not have a purpose on its own. However, it is possible to build games within the environment where learners actively engage in interactions with virtual objects or with each other, following routines defined by the rules of the game.

Regardless of the pedagogy theory applicable, the environment where the lessons take place is of great importance, specially in language learning, considering that culture is the bedrock where any language is built (Moschini, 2010). In virtual worlds, language must be acquired and taught embedded in a constructed cultural environment, where the target language actually exists. In this proposal, the third lesson challenges the students to describe city landscapes of the city of Porto, in Portugal. They become surrounded by an imagery that

truly exists and where Portuguese is truly used as a native language.

The immersive social environment combines a sense of physical co-presence with linguistic interaction (Henderson *et al.*, 2009). Henderson *et al.* state that it also promotes collaborative group work, similar to language classroom interactions, where groups can be created and rearrange groups according to pedagogical needs and social dynamics.

In this proposal, the applied pedagogy was constructivist. Some scholars suggest a problem-based learning, as they consider it the most effective in engaging students (Bignell and Parson, 2010). A constructivist pedagogical framework (Sanders and McKeown, 2007) should consider the following: learning occurs in a group; students' knowledge is socially constructed, in a process of action learning, where sharing, collaboration and participation are permanent.

Students were involved in the learning process, even though, considering that the proposed students for this study are at a threshold level, some information transmission was implemented too. Nonetheless, an active participation model was predominant. This means that the learning process involves individual understanding and performance of tasks. Frequent feedback, under these circumstances, had to be provided and the learning must be based on stages of personal and social constructs. Students first conceptualize, then construct and finally apply by engaging with others (Slone, 2009). These were the guidelines by which we implemented the activities.

The use of this platform allows the use of voice streams by the teacher and the students in a regular interaction. As previously explained, while the teacher speaks, he or she may write some of the structures used, to facilitate the understanding. This will provide two simultaneous language inputs for students: listening and reading. A simultaneous automatic chat translator may also be used by the teacher, which may be useful in a vocabulary input activity. English may be used as the working language between L1 and L2. Another possibility may be for students to ask questions through text while the teacher uses voice. The text or voice dialogs between the teacher and the students - role played or spontaneous - may be recorded and analyzed in a ulterior moment (Wilhelm *et al.*, 2009). To allow this, all avatars should be within a range of 20 meters of the speaker. Students and teacher may listen to the dialogues and the teacher may comment on the structures, providing hints, and giving positive feedback. The platform also allows the distribution of handouts in the form of personal notecards as well as billboards. The role plays and the use of holodecks where similar to real life context is given allow the students to assume social roles where the L2 is needed. This would be very difficult to achieve in a traditional classroom. Students are not passive receivers of information but they actively build the language structures as needed. These role plays are used according to the students' needs during they staying in the country: shopping in the city, public offices attendance, a visit to the hospital or health centre, night life, museums, a bank and other social contexts where L2 is needed with specific functions, collocations and vocabulary (Schuurink and Vries, 2009).

## **Contents**

The use of simulations in education brings a new variable which is the sense of enjoyment and pleasure in learning, favouring the overcome of emotional blocks (Pereira, 2009).

The lessons contents were designed taking in consideration the target population. The first lesson involves a migration from physical life to the virtual world. It is a hybrid plan between real life and inworld interaction. At the beginning of the lesson the students are given several instructions and explanations about the investigation. Then, the user accounts are created and the students log into the virtual world and learn the first steps. The "first hour" learning stage is

crucial (Dudeney and Howard, 2009). That's the reasoning that supports the activities planned before entering the virtual world in the first lesson plan and before entering the simulation. Students will first meet in the The Virtual Ability, Inc. sim (<http://virtualability.org/default.aspx>). It provides a friendly space to start the experience in the Second Life. During the first moments in the simulation, there is a identification process with the avatar. Each individual looks for familiar references and tries to understand his or her identity. The avatar appearance is an important part of this process. That is why the language topic for this first lesson is people's appearance and clothes.

*Figure 1. [Students editing their avatars in the first lesson].*

*Figure 2. [Students learn how to describe their clothes].*

*Figure 3. [The teacher suggests a matching game focused on clothes items].*

*Figure 4. [A detail of the matching game].*

Students edit their avatars, acquire an identity and learn to describe someone's appearance and name the clothes items. Figures 1 illustrates students editing their avatars, at the beginning of lesson no. 1. Figure 2 and 3 illustrates students acquiring vocabulary and structures so that they can later describe their own avatars. Initial moments in the virtual environment demand little interaction of the student with the environment so that he or she does not feel challenged by it. Figure 5 illustrates a virtual presentation with language input about the avatars appearance. Students need just to cycle through the presentation in other to learn the vocabulary. The teacher may read each word and provide a context for it. This way, we may conclude that the contents were chosen following a subject-centred and a student-centred approach (Palomäki, 2009).

*Figure 5. [A virtual presentation with vocabulary].*

Lesson plan no.1 (see section at the end) describes the activities and contents focused on the identification of the avatar.

The second and third lessons focus less on the individual and more on the world around. In the second lesson the topic is homes, parts of the house and different areas in a house. The third lesson is focused on the description of landscapes, and the interaction associated with a role play where the students will simulate a hotel check-in. A discussion group takes place first, allowing students to gather vocabulary, and only after they feel confident with the structures and vocabulary needed, they move to the holodeck. (Moschini, 2010) The idea is to reach the students linguistics needs and use this strategy as a motivation procedure.

Lesson plan no.2 and no.3 (see section at the end) describe the activities and contents focused on parts of the house and the description of landscapes, as well as a role-play in a hotel lobby.

*Figure 6. [A virtual book with the lesson contents, that students may browse at their will].*

*Figure 7. [A role play in a holodecks where students interact with each other or with the teacher].*

## **PRELIMINARY SURVEY ANALYSIS**

Considering the universe of students that may participate in this case study, a preliminary questionnaire was applied in order to characterize the students as far as computer technology is concerned: hardware, Internet habits and attitude towards technology. The questionnaire was applied to 27 students whose mother tongue is non-romanic. This treat is particularly important since the more distant the native language (L1) is from the learning language (L2) the more relevant is the students' learning.

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## DISCUSSION

With respect to the compatibility of virtual environments to existing learning styles, we believe that today's virtual worlds have multiple channels that favour the learning styles of the newest generation (Junclas *et al.*, 2007), (Henderson *et al.*, 2009). Following Turkle's description of the digital native, flexibility and multiplicity is the new paradigm of the self: "we are encouraged to think of ourselves as fluid, emergent, decentralized, multiplicitous, flexible, and forever in process." (Turkle, 1995: 263). Second Life users describe their in-world experiences as having a great social presence (Berge, 2008). This meets the multiuser interaction paradigm that characterises these environments. The immersive nature induces users to be near each other, which means that the environment replicates social practices and forms of collectivity (Panteli, 2009). Most of all, VWs promote high levels of intrinsic motivation - wonder, surprise, exploration, creativity (Brown *et al.*, 2008) - due to the enjoyment and fun that the experiences should provide (Chandra *et al.*, 2009).

This e-learning technology can reduce costs, compared to the traditional classroom systems, and also eliminates students' transportation costs. It is also an opportunity for promoting education adapted to current demands. There are no restricted rules as far as space, class attendance, time and rhythm requirements are concerned. Besides, the sense of physical proximity and the group synchronous communication (by text or voice) allows students to explore their identity in the context of language practice (Peachey, 2008).

Since communicators using a virtual world need to be present at the same time, virtual worlds also differ in terms of the interactivity and the preparation of the messages that individuals produce. For instance, collaborators using the voice channel in a virtual world have a very limited ability to rehearse their messages before transmitting them (Kahai *et al.*, 2007) ,

(Garcia, 1994). This provides a spontaneous communicative environment which means, in other words, true language use in context.

This model also has some disadvantages that will be explained, such as voice usage limitations, absence of interaction or the learning curve associated with the platform. Investigators describe the first moments in Second Life as annoying and frustrating, intimidating the user (Carr *et al.*, 2010).

If students aren't used to the application, the first in-world experiences may be focused on the creation of a personal identify. In a worst case scenario, the complexity of the interface may reduce the experience to a shallow, one-time engagement with the environment (Dudney and Howard, 2009).

Students will pay attention to changing their clothes and their appearance until they start to identify with their avatar. Besides, this stage is dedicated to learn how to interact with the environment: how to move, how to use the camera and how to interact with text and voice.

## **EXPECTED RESULTS**

The results of this case study are dependent of the application of the questionnaire after the students have attended the lessons. At this time, we can only anticipate and suppose that the students may benefit from the use of this platform and engage in superior levels of interactions, and assimilate in a more efficient way what otherwise would be taught in a classical traditional environment. Engagement, that is, the willingness of a student to spend time learning, is expected to increase, because the platform develops reciprocity and cooperation, and encourages active learning. It promotes a social presence, avoiding the disconnected feeling that most students have in an e-learning platform. By feeling a member of a community of learners, the impact on retention and students' perception of success increases. The collaborative perspective will increase engagement and facilitate a friendly and agreeable learning environment.

## **CONCLUSIONS**

Education is dealing with a reform of its paradigm. Emerging Internet technologies are permeating our social and organizational life. A consequence of these traditional developments is the way in which they erode traditional learning styles, as evidenced by changes in the ways that the today's generation of students learn. Second Life, in this particular case, provides a potential universe, for students, to develop process-based skills through media with which they are familiar (Grewal and Harris, 2009). The objective of this work is to gather a group of Erasmus students and invite them to attend the lessons that we have devised, in Second Life.

According to the results of the preliminary questionnaire, an empathy and familiarity with the Internet technologies was shown by the students, which allows us to have confidence on a future application of this paradigm of teaching.

Applying this model to European students that want to study in the University of Porto is based on several reasons: financial, technological, educational, and increased effect on students learning.

In a future work, beyond the scope of this one a well structured syllabus could be built with sound scientific background about the teaching of Portuguese as a second language in virtual worlds combined with a humanistic and constructivist approach.

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## **KEY TERMS & DEFINITIONS**

3DLE: Three-Dimensional Learning Experience. A learning experience in a virtual environment.

Digital native: someone who grew up surrounded by all sort of digital technology.

Digital immigrant: someone who adapted to digital technology later in life.

E-learning: Learning synchronously or asynchronously through the mediation of the cyberspace.

ERASMUS: European Scheme for the Mobility for University Students.

Sociology of virtual worlds: Ramification of sociology focused on the study of society dimensions, institutions and communities on virtual immersive environments.

MUVE: Multi-User Virtual Environment. Virtual electronic environment where people interact with each other and with virtual objects through representations of themselves called avatars.

Virtual worlds: Electronic space in which a real experience happens.

## **APPENDIX**

### **QUESTIONNAIRES & LESSON PLANS**

1. How old are you? \_\_\_\_\_
  
2. Gender:
  - 2.1. [ ] male
  - 2.2. [ ] female
  
3. Where are you from? (country) \_\_\_\_\_
  
4. Here in Portugal, do you have a personal laptop computer? If your answer is 'no', please skip to question
  - 4.1. [ ] yes
  - 4.2. [ ] no
  
5. How old is your laptop computer?
  - 5.1. [ ] Don't own a personal computer
  - 5.2. [ ] Less than 1 year old
  - 5.3. [ ] 1 year old
  - 5.4. [ ] 2 years old
  - 5.5. [ ] 3 years old
  - 5.6. [ ] 4 years old
  - 5.7. [ ] More than 4 years old
  
6. Approximately how many hours each week do you spend actively doing Internet activities for school, work, or recreation?
  - 6.1. [ ] Less than 1 hour
  - 6.2. [ ] Between 1 and 3 hours
  - 6.3. [ ] Between 3 and 6 hours
  - 6.4. [ ] Between 6 and 9 hours
  - 6.5. [ ] More than 9 hours

7. How often do you do the following for school, work, or recreation?

	Never	Once a year	Once per semester	Monthly	Weekly	Several times a week	Daily
a) Instant message							
b) Text message							
c) Download web-based music							
d) Use college/university library							
e) Presentation software (PowerPoint, etc...)							
f) Social networking websites (Facebook, MySpace, Bebo, LinkedIn, etc.)							
g) Online multi-user computer games (World of Warcraft, Everquest, poker, etc...)							
h) Online virtual worlds (Second Life, Forterra, etc.)							
i) Social bookmarking/tagging (del.icio.us, etc...)							
j) Voice over Internet Protocol (VoIP) from your computer (Skype, etc.)							

8. Which of the following best describes you? (choose one)

8.1.  I am skeptical of information technologies and I use them only when I have to.

8.2.  I am usually one of the last people I know to use information technologies.

8.3.  I usually use information technologies when most people I know do.

8.4.  I like information technologies and I use them before most people I know.

8.5.  I love information technologies and I am among the first to experiment with and use them.

Thank you for your collaboration! This survey will be part of an investigation about virtual worlds. If you would like to know more about this, please contact us: [ricardonoronhafernandes@gmail.com](mailto:ricardonoronhafernandes@gmail.com) and [ricardocruz@me.com](mailto:ricardocruz@me.com)

SOURCE: Students and Information Technology, Educause Center for Applied Research Study 6, 2009 (adapted).

## Questionnaire Survey

### **Second Life teaching in virtual worlds – the case of European college students under the Erasmus Programme**

#### **1. Comfort Level with Second Life (first moments)**

Please review the following Second Life skills and indicate your comfort level with each item. Don't think too hard about each one, answer the questions as quickly as possible.

##### **Walking**

Have not done	Not at all comfortable	Comfortable	Very comfortable
---------------	------------------------	-------------	------------------

##### **Flying**

Have not done	Not at all comfortable	Comfortable	Very comfortable
---------------	------------------------	-------------	------------------

##### **Teleporting**

Have not done	Not at all comfortable	Comfortable	Very comfortable
---------------	------------------------	-------------	------------------

##### **Chatting**

Have not done	Not at all comfortable	Comfortable	Very comfortable
---------------	------------------------	-------------	------------------

##### **IM'ing**

Have not done	Not at all comfortable	Comfortable	Very comfortable
---------------	------------------------	-------------	------------------

##### **Accessing the Inventory**

Have not done	Not at all comfortable	Comfortable	Very comfortable
---------------	------------------------	-------------	------------------

##### **Using "the wheel" (right click)**

Have not done	Not at all comfortable	Comfortable	Very comfortable
---------------	------------------------	-------------	------------------

##### **Using the MAP**

Have not done	Not at all comfortable	Comfortable	Very comfortable
---------------	------------------------	-------------	------------------

##### **Using the Mini MAP**

Have not done	Not at all comfortable	Comfortable	Very comfortable
---------------	------------------------	-------------	------------------

##### **Using the SEARCH tool**

Have not done	Not at all comfortable	Comfortable	Very comfortable
---------------	------------------------	-------------	------------------

##### **Personalizing the appearance**

Have not done	Not at all comfortable	Comfortable	Very comfortable
---------------	------------------------	-------------	------------------

- 2. How strongly do you associate the following characteristics with Second Life? Please answer using a 1-5 scale where (1) is "No association" and (5) is "High association."**

	1 No Association	2	3	4	5 High Association
Interactive					
Engaging					
Social					
Global					
Easy to use					
Realistic					

- 3. Please rate your experience with Second Life on the following attributes. Choose one rating for each using a 1-5 scale where (1) is "poor" and (5) is "excellent".**

	1 Poor	2	3	4	5 Excellent
Sign up procedures					
Meeting other people					
Learning how to communicate					

Creating/ modifying the avatar					
--------------------------------------	--	--	--	--	--

**4. After your experience on Second Life, in your opinion, computer mediated communication (CMC) may help a language learning? Yes or no?**

Why? \_\_\_\_\_

**5. Do you know any words or expressions in Portuguese? How many fo them?**

1      2      3      4      More than 4

**6. Do you consider Second Life similar to real world? Did you feel the effect of immersion?**

I totally agree      I agree      Have no opinion      I disagree      I totally disagree

**7. Comment on the interaction that teacher promoted during lessons.**

\_\_\_\_\_

**8. Second Life, as a virtual world platform of e-learning, enables a new mechanism of language learning?**

I totally agree      I agree      Have no opinion      I disagree      I totally disagree

**9. Choose the main advantages of Second Life's e-learning environment:**

(You can choose more than one)

- Second Life, as an e-learning tool, it's an opportunity for promoting education adapted to current demands
- Students can have formation outside the classroom context
- Students are able to stay on their professional, cultural or family environment
- There are no restricted rules as far as space, class attendance, time and rhythm requirements are concerned.
- The constant bidirectional or multidirectional communication flow ensures a dynamic and active learning of the subjects.
- Students adopt a pro-active attitude towards learning

Source:

New Medium Consortium survey: educators in second life, Spring 2008.