AN IMMERSIVE LEARNING ENVIRONMENT TO DEVELOP ENGLISH SPEAKING SKILLS: SECOND LIFE IN EFL[1]

Keywords:
Virtual world, immersive learning, case study, speaking skill.

Abstract

This paper describes an immersion learning experience based on Virtual Reality, currently held in the School of Virtual Environments at a Colombian University located in Bogotá, and designed for undergraduate students of Modern Languages who live in a monolingual environment but need to develop speaking skills in Business English through a Case Study strategy. According to the socio-cultural and constructivist approach, meanings and understandings grow out of social encounters.Therefore, this study includes world virtual environments, technologies and activities that involve collaboration and enables learners to be immersed in their learning experience through instructional strategies such as hands-on learning, simulations, group projects and case study discussions.

Abstract

1. INTRODUCTION

Using technology is a recent trend in most higher education institutions and utilized even more when they look for expanding educational offerings through distance and virtual programs. The virtual approach to the educational area is found in the combination of media and knowledge apprehension in an autonomous and personalized basis. In other words, it is given in the direct and constructive interaction of the individual who learns through all categories of media containing information. This information is set in advance but its meaning is given by the individual´s unique and particular ability for interpretation and by the media facilities based on creative interaction, imagination, and immersion.

The virtual scope in institutions opens a large panorama in the educational area since it can be featured by the capability of the human being to perceive feelings and emotions through immersion and interaction with media and information resources based on hypermedia such as images, sounds, texts, graphics, the senses of smell and touch, and the space among others. Thus, virtual resources are likely to provoke in individuals sensations of real spaces as a result of an artifact creating a sensitive reality and validation of cognitive structures. In such a situation, the individual has the opportunity to construct his own knowledge. The use of virtual reality has reconfigured university education as new technologies bring in new network structures facilitating new connections

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connections among people. Virtual reality operates through the internet and is characterized by non-presentiality. This kind of education takes advantage of the technological development and starts working on virtual reality (VR) as a learning mediation and web-connected environment. Additionally, the latest trends in education are related to immersive learning (IL) through virtual worlds.

This is why tridimensional environments adding social networking applications and online collaborative tools are the future virtual environments as they can reconfigure university education for the in-person sense.

2. RESEARCH PROBLEM

This project emerges from the demand of creating learning experiences in foreign languages adapted to the needs of students who belong to a monolingual context through the possibilities given by interactivity in the hypermedia applications and immersive learning as a way to create and foster pedagogic models at both institutional and national level to contribute to the education of bilingual citizens.

The students from the modern languages virtual program must possess the comprehensive speaking skills needed to perform their role in multicultural organizations where communication is the basis of company growth. Thus, they are expected to be skillful in speaking, showing command of the English language through a diversity of situations according to the expectations for modern language professionals in organizational environments. As part of the virtual learning process to develop the expected professional competencies, the students are provided mainly with a location mapping system (LMS) virtual room which contains all resources and tools to develop language skills and competencies by means of learning strategies and tasks which include synchronous and asynchronous interactions.

The Blackboard Collaborate™ platform is also used to create a space for synchronic meetings as tutoring and live learning.

The creation of new learning environments and the application of virtual tools open new possibilities to approach and execute teaching practices **(Batista, E. 2000)**. The learners´ language competences are supported by virtual tools through interaction and collaborative work and at the same time those virtual tools offer flexible time and space giving the learners opportunities to configure their own learning process in an immersive experience through virtual worlds (VW).

The aim of the project was to design two learning tasks based on case study approach and collaborative work to be used in virtual reality scenarios as an immersive leaning strategy for the modern languages virtual program, in this case for English as a foreign language. Along with this study, some other objectives were set in order to accomplish the main goal: to analyze information regarding the theoretical framework of the virtual reality and immersive learning; to identify virtual tools currently being used, and to identify useful and appropriate virtual tools to design the virtual scenarios for the immersive learning experience to develop speaking skills in the students from the modern languages virtual program. The impact of this immersive learning experience will be evaluated in a further stage according to the learners' performance level assessed in the language course and once the institutional conditions are given to support the use of the immersive environment in second life as a virtual world.

3. THEORETICAL FRAMEWORK

Immersive learning environments (ILE) are viewed from the constructivist theories of learning since they develop cognitive processes, cognitive and communicative competences on a meaningful and reflexive learning basis that allows the learner to self-direct and self-manage his own learning process.

Immersive learning gives learners a sense of being there even when attending a face-to-face class or training session is not possible, practical, or desirable, which in turn provides educators and students with the ability to connect and communicate in a way that greatly enhances the learning experience.

VR appears to offer educational potentials in several areas such as data gathering and visualization, project planning and design, design of interactive training systems, virtual field trips, and design of experiential learning environments. VR also offers many possibilities as a tool for nontraditional learners, including the physically disabled and those undergoing rehabilitation who must learn (or relearn) communication and psychomotor skills.

ILE and VW are designed to immerse and engage students in the same way that today's best video games do with players. Immersive education and VW support self-directed learning as well as collaborative group-based learning environments that can be delivered over the Internet or using fixed-media such as CD-ROM and DVD.

3.1 Virtual worlds

A VW is a computer-based, simulated 3D environment where users are able to interact and socialize with others and experience the environment through their avatars. These worlds are the incarnation of the imagination and creativity of 3D developers and builders and are being applied to educational environments for teaching purposes.

Following Robbins-Bell (2008) statement, VW are defined as a synchronous, persistent network of people who interact in artificial environments through agents that take action named avatars. This interaction is facilitated by computers and the environments make the multiusers feel the sensation of being in a real world. The users have a concrete presence in the virtual reality which facilitates interaction and communication among participants in this environment.

A VW produces the sensation of being inside an environment or place. In order to provide the user with a natural interaction in those environments, special artifacts and devices are used to facilitate the natural manipulation in the environment. Some of these devices are special gloves, helmets, movement tracking systems or access interfaces which are linked to the target environment, for instance in surgery simulations, surgical instruments are used according to the surgery that is being done in the virtual world.

Some of the many advantages of using virtual worlds are the possibilities to access spaces that cannot be accessed for different reasons and to modify the different events occurring in that particular world, for example, walking freely around architectonic spaces that have disappeared from a geographical region, or designing houses, buildings, cars, and other objects that can be modified or changed before constructing them in real. Recreating spaces and environments for training can generate opportunities for people to interact, react and make decisions without affecting a real situation that in normal conditions cannot be done.

As a way of illustration, a short list of the most popular and used VW is presented below:

- **URL:** *www.activeworlds.com* by Activeworlds Inc., Newburyport, MA. It contains several modern cities and attempts to support private development of educational, e-commerce, entertainment, and promotional projects.

- **URL:** dreamville.e-games.com.my by Terra ICT (M) Sdn. Bhd., Malaysia. A VW site which includes blogs, photo sharing, and customizable homepages.

- **URL:** *www.secondlife.com* by Linden Lab, San Francisco, CA. It is a free 3D virtual world where users can socialize, connect and create using free voice and text chat. They can build virtual objects and meet other residents, socialize, participate in individual and group activities, and create and trade virtual property and services among them.

- **URL:** *www.thesimsonline.com* by Electronic Arts, Redwood City, CA. It incorporates standard conversational features of social chat environments.

- **URL:** *www.imvu.com* by IMVU.INC, Mountain View, California. Members use 3D avatars to meet new people, chat, create, and play games to earn IMVU credits which are used to buy houses, clothes and other goods.

3.2 Virtual scenarios

The virtual scenarios (VS) are dynamic and 3D-simulations provided by a computer with high percentage of images, graphics, sounds and sometimes tactile contents that take place in real time to incorporate the user into the computer medium. Those simulations are oriented to visualize situations in which the user can participate in artificial worlds that provide him with an immersive, interactive and multisensory experience. For this project ,VS are defined based on learning scenarios where different learning situations are represented by means of roles, activities, resources and tools for the learner to use in a real-life simulation that can provide a powerful educational tool to develop and rehearse language skills as they incorporate events and interactions via the computer **(Murchú, Carlsen, Weber, 2007)**. Virtual worlds offer the possibility to carry out synchronous and asynchronous interactions in a 3D learning environment as the content placed in the virtual world is ready for students to access in their own time.

The scenarios designed for this project offer a digital enriched learning environment as they contain 3D recreations for simulating communities leading students to immerse themselves in organizational contexts and engage in interactive decision-making needed in their education, they also include web-based collaboration tools as podcasts, video-podcasts and writing tools to use in an online community providing cross-cultural connections supporting the multicultural view of the modern language program and the global competition aim for the highly skilled knowledge workers this current society demands.

Therefore, the 3D computer recreation features avatars that replicate business interactions and situations provided in case studies such as trading, booking, selling and enquiring among others. Students are required to search for more information about those case studies and to interact with their partners and scenarios from the perspective of an English speaker in business contexts. The scenarios are taken from common business situations linked to the content of the first level of English for undergraduate students at the EAN University.

3.3 Case study approach

One of the main goals of education is to integrate theory and practice through the application of learning and teaching strategies in order to link the real world and knowledge in an effective way .One of those strategies is the case study. It provides the student with meaningful learning since the participants can be involved in the discussion of a case and in the group process as well. This strategy supports the development of several cognitive processes such as analysis, synthesis and evaluation of information. Besides critical thinking, collaborative work, and decision making, the learners also develop creativity and innovation.

The case study is a learning strategy in which the learner faces the description of a specific situation that proposes a problem. This problem must be understood, evaluated and solved by a group of students through a discussion process. Fry, et al (1999) describe case studies as complex examples that give an insight into the context of a problem and illustrate the main point. For this project, case studies are defined as student centered activities based on topics that demonstrate theoretical concepts in an applied setting. This definition of a case study covers the variety of different learning structures that the EAN University uses in its distance education and *e-learning* programs ranging from short individual case studies to large group-based activities.

Considering the need for the construction of a virtual world with a didactic and meaningful sense which represents real spaces and concrete resources with a real world value, two spaces related to organizational contexts, where communication is a must, were selected to locate the two case studies in order to be used as the discussion strategy to develop speaking skills. These spaces were an international airport and a hotel in the year 2011.

An analysis of the current architecture of the two physical places and surrounding environments is done by means of photographic, iconic and documentary resources. Once the virtual recreation of those two spaces is done, the animation of scenarios

is developed by adding texts, images, sound and hypertext among other devices including the avatars. The animation scripts are also developed to be the virtual world scenarios guideline for this immersive learning experience.

3.4 Speaking skills

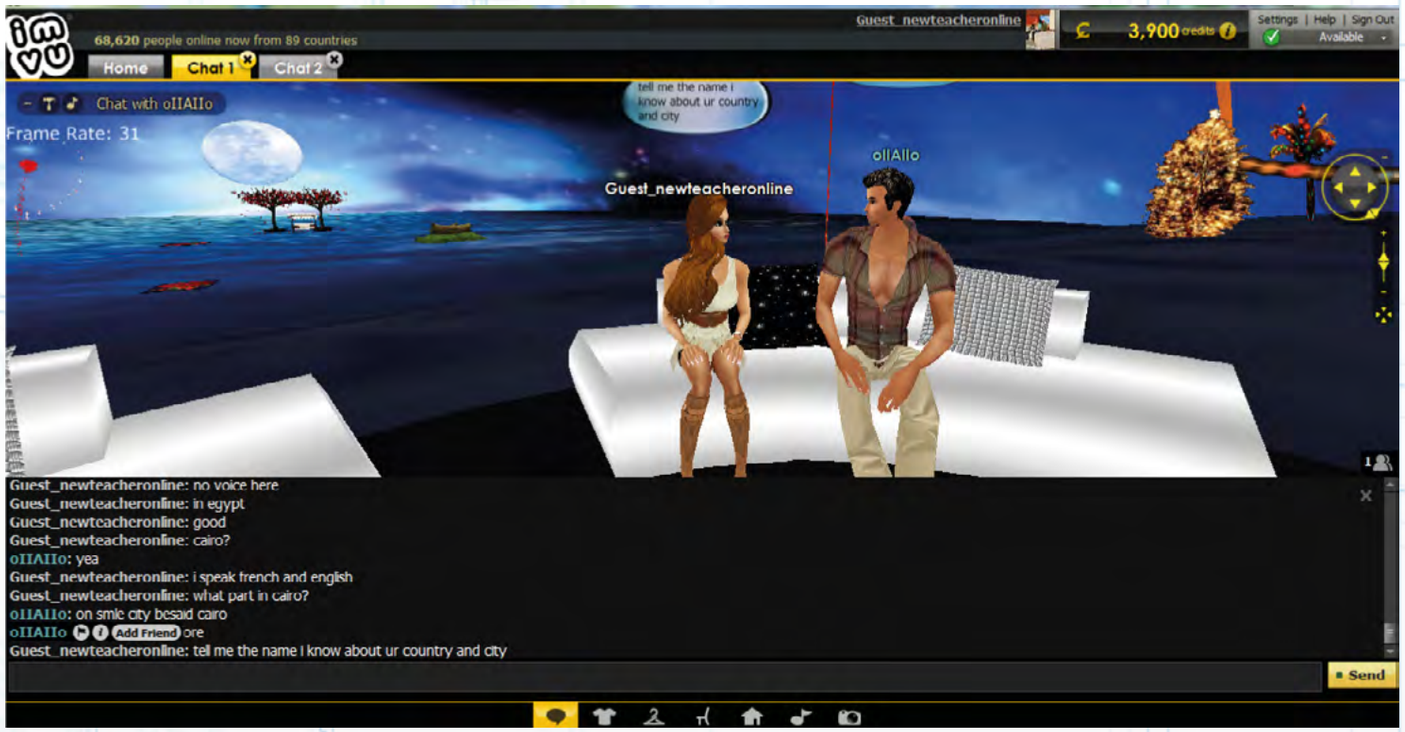
Given that the oral speech production is essential for social survival, the main reason for learning a foreign language should be the desire to use it as means of communication with other users of that language and even more when the user-speaker is playing a role in a bilingual /multilingual organization. The fact is that many learners are not skillful to express themselves in fluent and accurate English. Somehow they feel obliged to face and overcome many constraints and difficulties when attempting to communicate in English. Undoubtedly, English learners need to be constantly encouraged to produce the language they are learning and to be involved in an immersive environment that help them close the gap between their distant locations and the group they belong to as learners.

In order to design the virtual scenarios to develop speaking skills, Richards´(2001) concepts regarding speaking are taken in mind, specially to determine the type of speech the students will be using in that immersive learning experience through the case study strategy. Richards considers three major speech types: interactions, transactions, and performances, each one with its

Figure 1. Students' interaction: chat 1.

Source. Second Life

Figure 2. Students´ meeting: chat 2.



Source. Second Life

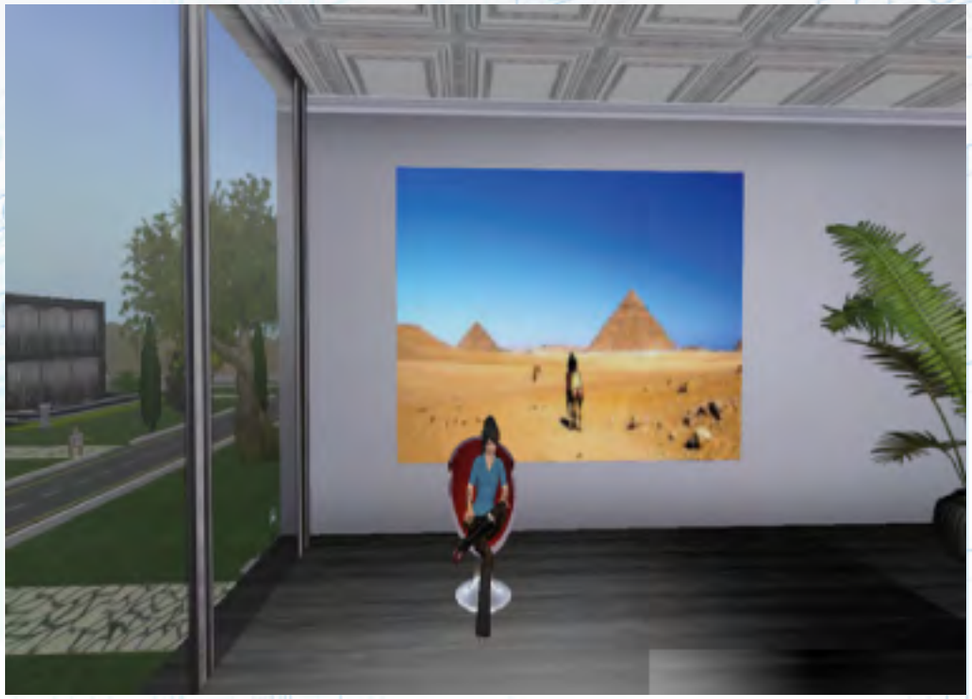
own features that support different strategies in order to develop speaking skills in a foreign language. In interactions, they create social interaction focused on the participants and their social needs. In transactions, speeches are related to giving or obtaining information, or getting goods and services. They are focused on message and communication strategies but they do not depend on grammatical accuracy. Finally, in performances, the speech is related to the interaction with an audience through the creation and presentation of a product with the goal of guiding the learner to produce longer discourses.

3.5 Learning tasks

To give a ground to the role playing activities used in the experience, there are some aspects that are considered regarding the needs of the target group. As a result of the diagnostic test, it is found that the students have misunderstandings, limited vocabulary, high hesitation and poor pronunciation that obscure meaning. Also, they are not able to apply communication strategies and their conversation is somewhat unnatural.

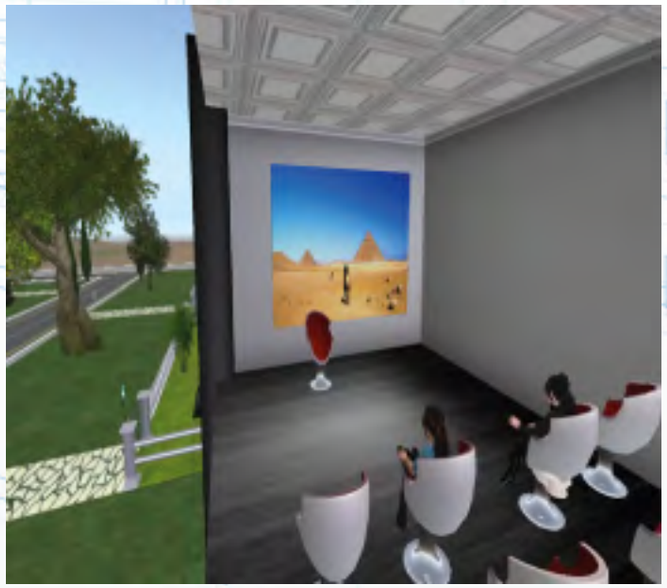
Based on this context, the task components framework provides this study with some meaningful insights to determine the goals, input data, settings (VS), activity types, roles and feedback in the activities that have to be fulfilled by the students in the VW.

Figure 3. Students' interaction: chat 2.



Source. Second Life

Figure 4. Students' interaction: chat 2.



Source. Second Life

Regarding learning tasks, they are set as activities in which the target language is used for a communicative purpose in order to achieve an outcome **(Willis, 1996)**. Most of the authors agree to some extent in the defining criteria that tasks have. According to Skehan (1998), tasks have a goal to be achieved, an activity that evaluates the outcome, that has a meaning and that is related to the real-world context. Candlin and Murphy (1987) assert that tasks can be effectively organized based on systematic components including goals, input, setting, activities, roles, and feedback. Nunan (1987) suggests that tasks can be conceptualized in terms of the specific goals they are intended to meet, the input data, which forms the starting point of the task, and the related procedures that the learners undertake in the completion of the task. Briefly, goals refer to the general purpose of the task and input represents verbal or non-verbal materials that learners can manipulate. Setting is related to the environment in which the task is performed and activities involve the things that participants will be doing in a given setting. The roles for teacher and learner are closely related to the successful implementation of the task and the feedback concerns the task evaluation. In this study, we can set the former issues as:

- **Goal:** analyze the case study in a collaborative work to discuss it later.
- **Input:** virtual scenario by itself, multimedia, instructions and procedures for fulfilling the task.
- **Setting:** virtual scenario to create the immersive learning context.
- **Activities:** role playing a situation presented through the case study.
- **Teacher and learner's role:** active participants in the interaction, transaction, and performance based on the case study. The characters are provided by the teacher.
- **Feedback:** assessment of performance to determine competencies achieved along the procedure in order to foster an improvement of the language skills.

3.6 Experience ilustration

The first step in this experience was to identify the type of learning strategies to apply the Immersive Scenarios (IS) in the target group based on a diagnostic test. The diagnostic test was focused on oral skills described in level A1 from the common European framework of reference for languages: learning, teaching, assessment (CEFR):

> At level A1, learners can understand and use familiar everyday expressions and very basic phrases aimed at the satisfaction of needs of a concrete type. Learners can introduce him/herself and others and can ask and answer questions about personal details such as where he/she lives, people I he/she knows and things he/she has. They can interact in a simple way provided the other person talks slowly and clearly and is prepared to help.

Once the diagnostic test was applied to the target group, the learning strategies were defined following the three categories of O'Malley and Chamot (1990): metacognitive strategy as a way of being aware of the task to perform, cognitive strategy to use or transfer the linguistic system knowledge to perform the task and the social/affective strategies which imply cooperative work and interaction.

Regarding this issue, two learning tasks were designed in order to foster oral skills in the target group. As a first experience, a 3D Instant Messenger resource was used to mediate the learning activities through chats (figures 1 and 2*). The activities were framed into case studies in which the students had an initial preparation, first by searching information to support their conversations and second by negotiating possibilities to solve the problem. After the initial stage, they would take part of a situation that posed some questions and would participate in a role play that would be developed based on the choices the students made. For the purpose of this study, role playing is defined as "a derivative of a sociodrama used as a method for exploring the issues that complex social situations can involve. It may be used for the training of professionals or in a classroom for the understanding of literature, history, and even science" **(Blather, 2002)**.

As part of the trial made to search an appropriate virtual world to provide students with the opportunity to use English in a real situation, *http://imvu.com* was chosen in order to open the space for communication. The students were given a specific situation regarding business. They worked in pairs and accomplished the task. Using the virtual world chat, they started their conversation by discussing the best solution to the problem that was stated by the tutor and then supported their decisions with suitable arguments. Parts of the scenarios are illustrated below:

In a second experience, second life (SL) was used as the virtual world to provide students with an immersive learning experience fulfilling the learning tasks based on a case study. The use of SL was possible thanks to the joint work with Professor Roberto Funck from the Universidade Católica de Pelotas in Brazil, who provided a land in SL to work with the students from the EAN University. A group of 10 students participated in the immersive learning activities during a 5 week term. During this period of time, five SL meetings were planned in order to interact and work on collaborative basis. Those meetings were held once a week in sessions of 2-hours and during the interaction they learnt how to apply the basic instructions given in the use of SL: chatting, texting, changing appearance and dressing through their avatars.

The students received guidelines for the learning tasks and instructions on how to use and move their avatars in the virtual scenario, so they could be involved in each of the activities proposed as a strategy to develop their English language speaking skills.

In the activities planned for this experience, the students had the opportunity to meet the teacher researcher in an opening session that lasted one hour and in which the objectives and procedures were presented to ensure comprehension and to foster their participation. During the development of this experience, they also had the chance to interact with their partners as a free option in order to reinforce their own skills related to how to walk, talk, write and teletransport by means of their avatars. The teacher supported their process by taking the first 10 minutes of each session to work with the students and practice those daily actions a person is expected to perform in normal life. Being in a social networking community ensured the lively participation and motivation of the students in solving the case study activities proposed in those two virtual scenarios. Furthermore, this experience in SL attempted to enhance the oral skills that monolingual students need by using learning strategies such as hands-on learning, simulations, group projects and study case discussions through virtual worlds.

4. CONCLUSIONS

Technology has added much to the sorts of experiences an individual can have in a virtual environment and the most important element in core in any virtual world is the ability for the user to interact with the environment. It includes interaction with other people, objects, and places and as a result, it influences the course of the events. In today's massively multi-user environments, people interact in the same space at the same time, in different contexts as in real life. Informal social interactions are powerful motivators for learning, because most people socialize in terms of establishing relationships. This experience can go beyond the student´s educational situation since it will support the sense of presentiality in those *e-learning* students who are not able to face real speaking situations with native English speakers or higher level-English speakers.

The use of virtual reality has reconfigured university education and has provided new strategies to facilitate language learning, especially in those monolingual contexts in which using English is just a matter of opportunities given by the interaction with foreigners, international organizations and sometimes it is constricted only to the academic contexts. It is true that technology brings new network structures facilitating new connections among people but that innovation in the teaching and learning processes is also part of our role in today´s global world.

Since virtual reality operates through the internet and is characterized by non-presentiality, language learners can have the opportunity of experiencing the sensation of being in places where they can enhance

competencies not only at a linguistic but also at a cognitive level, solving problems, playing roles and dealing with case studies.

As the project described throughout this document is still in progress, further evaluation on the impact of this immersive learning experience will be held in order to share the results with education communities that can apply it as one strategy to support monolingual students in the development of their speaking skills through virtual reality based on case study methodology.

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