The Influence of Video Games on Vocabulary Acquisition in a Group of Students from the BA in English Teaching[1]

La influencia de los video juegos en la adquisición de vocabulario en un grupo de estudiantes de la licenciatura en inglés

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Abstract

This article is the product of an Action Research study that aimed at demonstrating the effects of videogames on vocabulary acquisition in a group of 15 students from 8th semester of the program of B.A in English of the University of Tolima. The analysis of results, gathered by vocabulary tests and students and teacher's journals, showed that the participants could acquire a considerable amount of vocabulary. The experience enhanced the participants' engagement and interactions inside and outside the class. The study allowed the creation of categories de palabras that may serve as a base for further research and implementation in the classroom. Video games seem to be a new trend brought for technology for purposes of pleasure and they have been proved in the educational field as a possible learning mediation, and they will be soon replaced by new devices that could not be considered as an alternative to learn.

Keywords: Videogames; Game-based Learning; Vocabulary Acquisition; EFL

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Resumen

El presente artículo es el producto de un estudio basado en Investigación acción, el cual tenía como objetivo demostrar los efectos de los video juegos en la adquisición de vocabulario, en un grupo de 15 estudiantes de octavo semestre de la Licenciatura en inglés de la Universidad del Tolima. El análisis de los resultados, obtenidos por medio de exámenes de vocabulario y diarios del docente y de los estudiantes, mostraron que los participantes pudieron adquirir una cantidad considerable de vocabulario. La experiencia activó el interés y la interacción de los estudiantes dentro y fuera del aula. El estudio posibilitó la creación de categorías de palabras, que pueden servir como base para futuros estudios y para la implementación de la estrategia en el aula de clase. Los video juegos parecen ser una nueva tendencia que introdujo la tecnología con propósitos de diversión, pero que pronto se convirtió en una posible mediación pedagógica, la cual muy seguramente será reemplazada por nuevos dispositivos que hoy no se consideran como opción de aprendizaje.

Palabras claves: Videojuegos; Aprendizaje basado en juegos; Adquisición de vocabulario; EFL

Resumo

O presente artigo é o produto de um estudo baseado em Pesquisa ação, o qual tinha como objetivo demonstrar os efeitos dos videojogos na aquisição de vocabulário, em um grupo de 15 estudantes de oitavo semestre da Licenciatura em inglês da Universidade do Tolima. A análise dos resultados, obtida por meio de provas de vocabulário e diários do docente e dos estudantes, mostrou que os participantes puderam adquirir uma quantidade considerável de vocabulário. A experiência ativou o interesse e a interação dos estudantes dentro e fora da aula. O estudo possibilitou a criação de categorias de palavras, que podem servir como base para futuros estudos e para a implementação da estratégia na sala de aula. Os videojogos parecem ser uma nova tendência que introduziu a tecnologia com propósitos de diversão, mas que breve se converteu em uma possível mediação pedagógica, a qual muito seguramente será substituída por novos dispositivos que hoje não se consideram como opção de aprendizagem.

Palavras chaves: Videojogos; Aprendizagem baseada em jogos; Aquisição de vocabulário; EFL

Introduction

Back in the early 1950s, video games were created as part of the first computer systems; however, it was not until the 70s and 80s, when first computer appeared, that they became popular. Over the years, video games became more important in people's lives; in fact, young people are spending higher amounts of time with this medium than they used to in the past. Rideout, Foehr, and Roberts (2010) reported that there has been a substantial increase in the time that children and teenagers spend to play video games over the last ten years. Also, Prensky (2001a) affirms that graduate college graduate spent 5,000 hours playing video games, and 20,000 hours watching television during their lives

Video games seem to be highly addictive and have a natural capability to engage players. Characteristics, such as visuals, music, storyline, gameplay, and characters, make them attractive to a considerable amount of people. In fact, they are considered a relatively new way to promote literacy (Chiong, 2009). Since video games have become more complex in terms of graphics, interaction and narrative, a wide variety of genres and topics have emerged to captivate the new public. As a result of this diversity and complexity, more and more people are into the video game industry, as can be seen in the Figure 1 below.
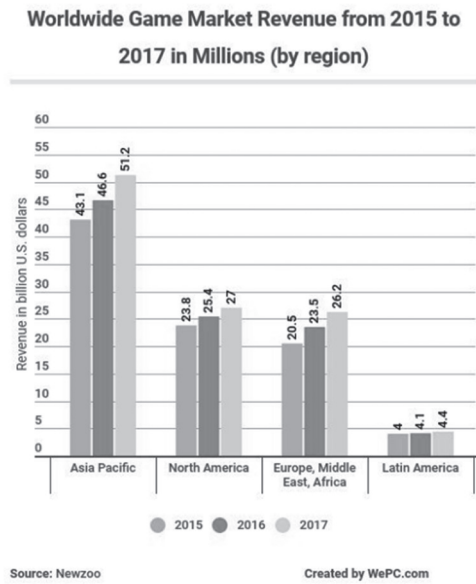

Figure 1. Worldwide Game Market Revenue. Taken form 2019 Video Game Industry Statistics, Trends & Data

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Studies regarding the use of videogames in educational environments are novelties but researchers, teachers, and parents recognized that games can use these to develop some valuable skills and insights (Kirriemuir & MacFarlane, 2004). The educational uses include language learning and, according to Klein (2013), playing videogames is beneficial to people who are learning a new language; however, these benefits may be random and not intended for casual gaming. Keeping the former ideas on mind, this research study intends to establish how effective video games are in vocabulary acquisition.

Multimedia (including video games) has been related more to leisure activities with no or little relationship to learning; therefore, some people usually have the idea that video games are not useful at all. The same idea seemed to happen when television was first released. Darryl F. Zanuck, Director of 20th Century-Fox stated in 1946 that "Video will not be able to hold any market it captures after the first six months. People will soon get tired of staring at a plywood box every night". Nevertheless, television has become one of the most powerful instruments to transmit information in existence and there are educational programs that are designed for people to learn using them. This example may illustrate that most of the time; ideas against technological creations tend to have a weak logical basis. Thus, this project aims to demonstrate that video games are useful in learning a second language; specifically, we intend to explain how they can be a meaningful tool to acquire vocabulary in English as a foreign language (EFL). This leads us to core question of this study: How can video games influence vocabulary acquisition in a group of students from the B. A. in English?

As such, the research conducted aimed to demonstrate the influence of video games on students' vocabulary, to determine the relationship between video games and vocabulary acquisition by analyzing learning experiences from the B.A. in English at the Universidad del Tolima, and to measure how effective the use of videogames is to acquire vocabulary through different activities using video games.

Literature Review

Different scholars such as Gee (2007), Prensky (2004), Shaffer (2006), Musa (2015), Howard and Ting-Yu (2013) argue that video games can be powerful activities for education. In fact, when someone plays, learning happens constantly, even if the players are aware of it or not (Prensky, 2004). Their ideas have inspired different studies all around the globe to demonstrate that video games can take the function of tools and activities in language learning, specifically, in vocabulary acquisition.

With regards to vocabulary acquisition in a foreign language, Gee (2007), says that good video games not only set situations and problems for the entire

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gameplay, but they also present several basic tools to navigate properly in the game. These aids include the vocabulary that gamers will use during the actions they take on the video game. He compares this process to creating a foreign language classroom when teachers set the basis for their further practice of vocabulary and grammar. Indeed, he argues that video games are surrounded by different means of written texts such as instructions, dialogues, hints, and descriptions that may enable the development of autonomy.

Musa (2015), developed a case study using games like Minecraft (Mojang) and Candy Crush (King.com) and he concluded that the participants developed new groups of vocabulary when they played these games and that vocabulary acquisition occurs if the words are directly exposed to the player. Also, Howard and Ting-Yu (2013) investigated how an adventure game called Bone could improve listening, reading, and vocabulary skills of a group of college students. This study indicated students acquired certain vocabulary after playing Bone. In a similar study, Vahdat and Behbahani (2013) used a video game called Runaway: A Road Adventure to develop vocabulary in two groups of male and female learners. They concluded that there is not a strong relationship between gender and vocabulary learning, as vocabulary learning occurred eventually in both groups; however, there were some minimal differences in the acquired words throughout the students. Furthermore, Ranalli (2008) used a computer simulation game called The Sims in students and guided the process. The study provided evidence that video games can, with guidance, be used to contribute to vocabulary acquisition of students.

Moreover, in Colombia, Galvis (2011) conducted an entire semester using a video game (Grand Theft Auto: San Andreas) and game-based instructions in a military school. He concluded that students were more attentive and involved and that video games helped students to explore virtual realities that simulate real-life contexts. Additionally, Rivas (2016), conducted similar research where A1 and A2 level students used Minecraft as an extra activity. She found that her students improved their lexicon and grammar through the interaction with this game and activities connected to their gaming experience, by using role-play activities, oral activities, dialogues, and discussions. She affirms her students had a better attitude towards the lessons and a better performance in the activities. She explains they were more connected to the topics as they had background knowledge.

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Video games can also change and improve the attitude of learners towards language learning. For instance, Yip & Kwan, (2006) expressed their students' motivation and attitudes change while using videogames; data which was obtained through surveys and interviews. They also affirm that their pupils' attention was easier to retain while using videogame-based activities. Galvis (2012), affirmed in his field notes that playing the videogame can be seen as a form of engagement, attentiveness and entertainment and during the

interviews his students expressed that for them it was an easier way to learn English as they became more engaged and attentive.

The studies mentioned before are valuable not only for their relationship to this research but also for their methodologies, instruments, and findings, which can be adapted to this research. For instance, Prensky (2001b), states that there is a combination of twelve elements which make a game engaging: fun, play, rules, goals, interactivity, adaptiveness, outcomes and feedback, win states, conflict, problem solving, representation, and story. These elements seem to be useful when choosing the proper game to the learning goal and planning the activities. Gee's (2007) relationships of video games and classroom environments are important due to the bond between video games and problem-solving using vocabulary.

Finally, Ranalli's (2008), methodologies are meaningful when working on vocabulary because they imply guidance before, during and after playing the game. The teacher can easily monitor the learner during the process and support the game's feedback implying an educational sense to it.

Videogames Used

There were used two video games called Scribblenauts and Age of Empires II (Both games were acquired via Steam) From week 1 to 2, the participants were asked to play Scribblenauts, which is a puzzle-action game being developed by 5th Cell in 2012 and distributed by Warner Bros. In the game, users take the role of Maxwell, a boy who wants to undo a spell on his sister. The user needs to type words and to use adjectives to solve different problems that allow him to collect starites, which he needs to save his sister. This game includes an ample variety of nouns and adjectives. Besides, it is rich in direct vocabulary.

The second game used, as mentioned, was Age of Empires II, which is a real-time strategy game. In this game, players take the control of troops and they must accomplish certain objectives during the campaign. Moreover, the main characters are historical figures like William Wallace, Joan of Arc, Saladin, Genghis Khan, and Barbarossa, among others. This video game was used in order to analyze the specific war lexicon in it. These two games were chosen because of their capability to involve players and their use of vocabulary. Besides, they use a considerable amount of reference vocabulary in the different campaigns.

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Type of vocabulary in video games.

There can be two groups of vocabulary that gamers might acquire during the gameplay Musa (2015): "general meaning or situated meaning words.

General Meaning is composed of the lexicon that has a purpose apart from the actual gameplay. That means, a player does not need to know them in order to play but these words are present in other functions" (p. 448)

To the group of Situated Meaning words belong all the words included during the game that users are supposed to understand to succeed in a certain game.

In this project there were found two subcategories of situated meaning vocabulary: Direct Vocabulary and Reference Vocabulary. Direct vocabulary is all the words that are visually materialized on the gameplay and the player can interact with them. Reference Vocabulary is all the words that are necessary for the completion of the game. It is important to consider these two categories as it helps to understand that students tend to learn direct vocabulary more than Reference vocabulary.
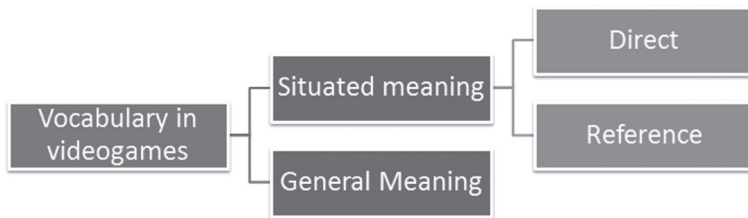

Figure 2. Type of vocabulary found in video games. Musa (2015)

Methodology

This project applied a mixed method approach given that it combined qualitative and quantitative forms of data analysis. The former was used in the sense that data was analyzed in the form of ideas and images represented in the concepts expressed in the students and teachers' journals; while the latter was used to analyze the amount of vocabulary acquired by students by comparing the results of an initial and final vocabulary tests.

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Research Design

The design used in this research project was Action Research (AR). Burns (2010) states that Action Research is related to the ideas of reflective practice and the teacher as a researcher. AR, also called teacher research, involves taking a self-reflective, critical, and systematic approach to exploring teaching contexts. The teacher becomes an investigator that tries to question and explore

all sorts of issues in the educational field; in this case, the implementation of video games in order to improve vocabulary skills.

Observation was the first phase chosen to start the study since the intention was to diagnose students' background about video games. In the reflection phase, data from the previous stage was used in order to organize the procedures with which to the implement the classroom activities. In the planning stage, different activities were arranged based upon the reflection exercise. Consequently, and as can be seen in Figure 2, during the acting stage the activities were developed leading once more to the first stage, where the teacher observed, evaluated and analyzed how effective the activities were; and after this, the cycle restarted.
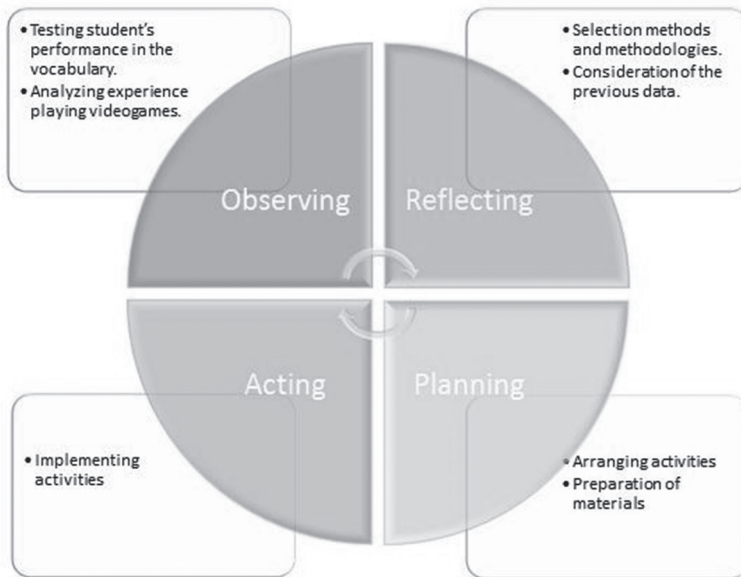

Figure 3. Action Research schema applied in this study. Adapted from Burns (2010)

Participants and Context

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The 15 participants are in their 8th semester of the program of B.A in English of the University of Tolima, 12 of which were female and 3 were male. Their age ranged from 19 to 23 years old. This group of students was chosen by considering their language level.

Data Collection and Analysis Procedures

For this project the students were involved in different activities for five weeks, each week requiring 1 or 2 hours of face-to-face‑work, and 3 hours of an independent work. During the face-to-face sessions, the researcher and students discussed possible findings and new words, and recorded their progress by using a teacher's journal, and student journals. Additionally, during the last week of the project, the teacher-researcher prepared a test to reinforce the acquisition of new words. During the 3 hours of independent work, the students played the videogames *Scribblenauts* and *Age of Empires II.* They kept a journal where they wrote findings and reactions to the learning experiences. The activities were divided into 3 main cycles that can be seen in Figure 4 and which will be explained below.

Planning: In the first part of this cycle, the researchers analyzed and determined the level, likes and dislikes of participants, as well as the video games that were going to be used. Then, the researchers selected proper games according to the observation. Afterward, the vocabulary from the games was selected and a test was elaborated in order to measure participants' performance in the target vocabulary selected by the teacher. Finally, the participants' performance and their opinions about the learning experiences were in order to plan the activities for the lessons.
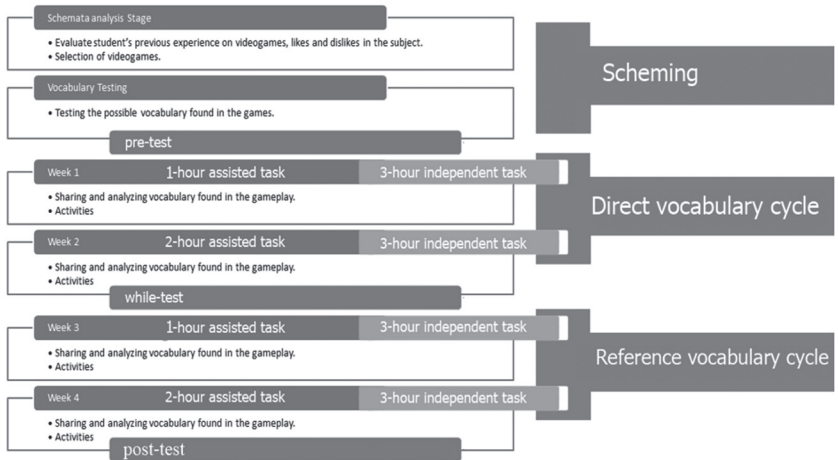

Figure 4. Lessons schema

Direct vocabulary cycle: The game used in this cycle was *Scribblenauts*, which is based on direct situated meaning vocabulary. In the first week, participants shared words that they have learnt from the game and analyzed

their uses, as well as their experiences playing the game. During the second week, in addition to the aforementioned vocabulary sharing, the participants performed a test using the lexicon from the two classes that they had seen.

Reference vocabulary cycle: During the last cycle, Reference Language Cycle, students play *Age of Empires II*; additionally, they shared lexicon on the week three and they analyzed the words in contexts. During the last week, the participants analyzed the vocabulary again and carried out a second test using the vocabulary shared during the last cycle. Finally, they took the final test to provide data to determine the effectiveness of the activities (see figure 5)

Data Collection Instruments

The data collection instruments in this study were a vocabulary test (see Appendix 1), and teacher and students' journals. Journals were also used in order to evaluate the participants and teacher's reactions to the implementation of the experience as well as how they perceived the learning progress.

The test was divided into 4 sections: synonyms, definitions, image-word, and categories. The first two included vocabulary from both video games. The image-word section included words from *Scribblenauts* and the categories section vocabulary from *Age of Empires*. In the first section, students needed to choose one synonym for the world in bold according to what they knew and the context. In the second section, the participants selected the definition that matches the words in bold in the sentence. In the third section, there was vocabulary from *Scribblenauts*; in this part, the participants had to write to label the pictures. Finally, in the categories section, they were asked to classify the different words into two categories: War Units and War Buildings. This last part used words from *Age of Empires*.

The journals were used in order to consider the students and teacher's viewpoint and reflection processes, "before, during and after a learning experience" (Dyment & O'Conell, 2011, p. 84), as in the activity proposed in this project.

Teachers' journals are another useful instrument to provide information about the implementation, progress, and intervention in a certain methodology.
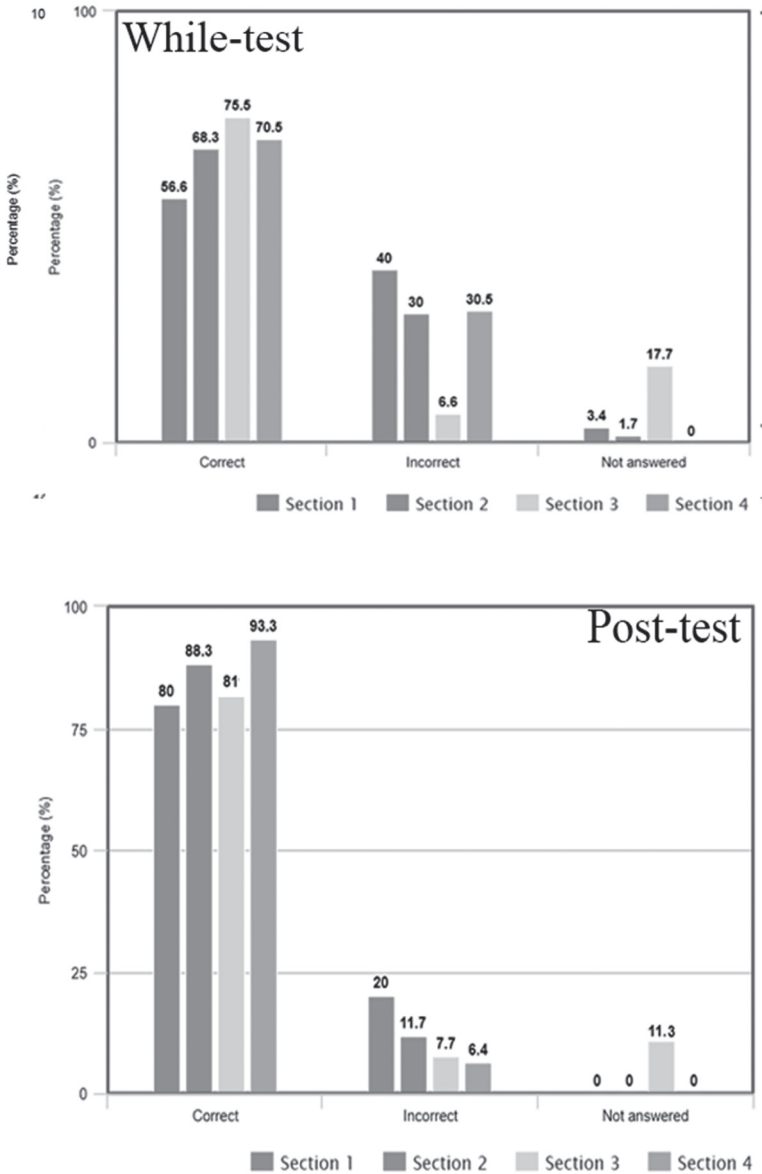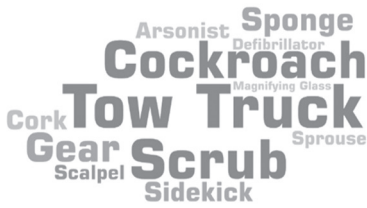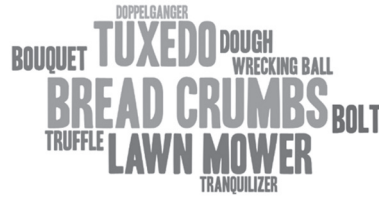
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Results

Figure 5. Results of the pre-test, while test and post-test.

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Week 1

Week 2

Week 3

Week 4

Figure 6. Word clouds vocabulary acquisition in the three weeks.

Findings

The findings seem to indicate that videogames could be used as effective tools in the classroom. As the data from study indicates, there is a link between their use and an increased uptake in vocabulary. These games seem to have positive repercussions in the student vocabulary acquisition process. Tomlinson (1998), said that relaxed and self-confident learners learn faster. Krashen (1985) states that non-linguistic variables, like motivation and confidence, may have influence on learning. Video games, and games in general, seem to low the affective filter, and a result enable students' language acquisition since in the virtual environment students work in a context without pressure; because of this, Ghanbaran and Ketabi (2015), state that players are capable of having a deeper processing of vocabulary. This was seen during the implementation, where participants shared different interests in the games, and they expressed their connection to the different topics. For instance, when they were playing *Age of Empires II*, they started talking about the historical characters of the game, some of them even said they searched for their biography and compared them to the stories in the video game. Another benefit we could evidence is the one Deubel (2006) calls as a customized experience. Essentially, each gameplay is different among the participants. There are different paths to follow, making it a unique experience. Shaffer described this

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as the "empowerment of the player" (p.138). Students showed the capability to incarnate the main character, which increased the interactivity because they were able to take the responsibility in the context of the game.

This project found that video games may benefit players regarding language learning, and they may improve their lexicon. In fact, studies like Ranalli (2008), Galvis (2011), Howard and Ting-Yu (2013), Musa (2015) and Rivas (2016), among others, state that people can practice, and improve their performance in a target language using video games:

Brief description of what you did in the videogame (main places you were, main actions you did):
I Played the Campaign of Joan of Arc. It was hard because the game is Complicated. I used the Cheats Hahaha. It was about how Joan of arc became a noble knight and her fall. It is Curious How accurate is the game I looked up Her Story and the game is like a summary.

Figure 7. Excerpt students' journals, second cycle, searching biographies

Musa (2015) states that a lack of academic instruction may cause that the students learn the form but not the meaning of these words. That is why activity was a crucial factor in this study. In fact, the amalgam between independent and instructed tasks showed findings that we may divide into the next components, engagement, interactions, and type of vocabulary.

Prensky (2001b), states that "Computer and video games are potentially the most engaging pastime in the history of mankind" (p.1). Having this in mind, during the it was evidenced that students were engaged as stated in both journals. Besides, the connection they had with the games seemed to cause willingness of sharing and developing the activities.

During the lessons, we found that participants felt comfortable to share their experience, and even more, the new vocabulary was accepted as a part of their tasks. Students could name the new objects and actions during the game, and sharing a topic in common, allowed participants to connect with each other. Based on the analysis of the test and the entries in the journals, we can say that participants increased their vocabulary, and felt more motivated to learn.

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Brief description of what you did in the videogame (main places you were, m

I was in creepy house, and I help sor
be better, also I helped a mon who won
tree I helped a boy who had lost a kite
roller coaster for entertaining few kids I p
order, for a women to threw it to a u
a videocamera to a popporatzi because h
have evidence of a sasquatch den

Words you remember using or seeing during the game:

Doppelgonger, Sasquatch den, bird seed,
theather, chatter, kite, spooky, peevish, Rolling

From those words select the ones that are new for you. Then, classify them i
the words that in this moment you understood well. Second, the words that i
understand well.

Figure 8. Excerpt from students' journal, describing and sharing experiences.

With regards to the interaction, students had two different ways to interact: in class and during the gameplay. This seems to be another reason why the games engaged students easily. Besides, these interactions could have helped students to acquire vocabulary. Both types of interactions affected each other. For instance, having a good interaction with the game helped students to communicate easier in class. Therefore, each interaction helped to first be exposed to and then memorize the vocabulary, before practicing and acquiring it.

In which moment did you learn more words? Mark with an X

Playing:____X____   Sharing in the classroom:_____

How do you feel playing the game?
It is really fun to play the game but in class, I can
share the things I played and use the vocabulary

Figure 9. Excerpt from students' journal, describing and sharing experiences.

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There is nothing real in killing dwarves or ogres, but the tasks the player needs to accomplish (analyze information from dialogues, interact with the objects and space, fail in a certain task and receive feedback, etc.) are like real life. As stated by Klein (2013), there is a necessity to use the language in order to solve conflicts in those simulated lifelike contexts. The vocabulary presented is not isolated; it has a situation, characters, and culture within the gameplay.

We found that the students practiced what they learned in the context of the game. Particularly, during these activities, at the moment of the assisted task, participants appeared to show confidence and previous experience at the time of sharing the vocabulary.

Conclusions

It is true that we do not intend to create a new theory with the analysis of this learning experience; but, we can draw some conclusions based on the purpose of this study, which aimed to demonstrate the bond between videogames and vocabulary acquisition as well as problematizing the idea that people seem to have about the relation between videogames and language learning.

The virtual interaction seems to affect the interaction in the classroom. As an example, participants experienced and interacted with the words in a previous instance before the class. It may have influenced, that inside the classroom, they were more attentive and participative. Students experienced different perspectives and different paths along the games. At the moment of sharing the experiences with the games, participants looked eager to know what their classmates did. They used different linguistic devices in the social interaction, not only the vocabulary learned, but also, they implemented narrative language. As such, video games seem to offer several opportunities to practice vocabulary in contexts and a teacher can use this type of technological resources to refine the skills acquired during the gameplay.

Lastly, it is fundamental to reflect upon the vocabulary found in the games because this knowledge can be helpful when a teacher plans a videogame-based instruction.

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The type of vocabulary proposed does affect the process of acquiring words. For instance, Musa (2015), presents that situated meaning words are more likely to be acquired because this vocabulary is directly exposed to the players, and it is relevant and useful in solving the games. Most of the words assigned for each one of the weeks of implementation belonged to the group of situated meaning. Pondering upon this conclusion, it is essential to plan the vocabulary before assigning the game to the group. Considering the

likelihood of acquisition of the words can help to achieve the objectives of an activity based on games. Eventually, making the best of use of the vocabulary categories can help teachers to plan better classes, set realistic goals, and develop activities that reinforce experiences of players.

Paraphrasing Foucault (1980), it appears that we cannot escape to be influenced for devices that determine our actions as subjects of established discourses. This French author let us see through this notion that these devices function as machines that we can enter though breaking lines that questions pre-existing organizations, but soon, they also become reigning paradigms that could be displaced by new tendencies. Video games seem to be a new trend brought for technology for purposes of pleasure and they have been proved in the educational field as a possible learning mediation, and they will be soon replaced by new devices that could not be considered as an alternative to learn.

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Appendix 1 – Vocabulary Test

Vocabulary test
Pilot Activity
Videogames and vocabulary acquisition
Joan Camilo Ovalle Giraldo

Universidad del Tolima

Name: _____
Age: _____ Sex: _____

This is a test to measure your understanding of certain words used in two video games: Scribblenauts and Age of Empires II. In order to analyze your progress during the activities proposed and structured by Joan Camilo Ovalle, from his research investigation about video games and vocabulary acquisition.

First of all, thanks for your help and willing to participate in this process. If you have any question contact the researcher at jcovalle@ut.edu.co

A. You are going to be given one word. Circle the best synonym for the **bolded word** according to the sentence.

1. After the party, our mother ordered us to **scrub** the floor of the entire house. We were really tired after that.
   A. Mop
   B. Broom
   C. Brush
   D. Wax

2. The army will **Rendezvous** their enemies at 3 o'clock in the afternoon.
   A. Meet
   B. Attack
   C. Battle
   D. Speak with

3. It was really dark and when the **brigand** climbed through the broken window, he cut his wrist on the glass, he left a clue.
   A. Soldier
   B. Robber
   C. Police
   D. Assassin

4. That man was an **Arsonist**. Hundreds of people in town lost their home because of that man.
   A. Thief
   B. Conman
   C. Robber
   D. Pyromaniac

5. The army was tired of **Skirmishes**, they now wanted war.
   A. Deaths
   B. Losses
   C. Battles
   D. Disputes

6. The king had no **heir**, the town was really worried.
   A. Wealth
   B. Successor
   C. Beneficiary
   D. Army

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B. You are going to be given one word. Circle the best definition for the **bolded word** according to the sentence.

1. She put the **dough** in a bag, after that we tasted it and it was delicious.
   A. A sweet mass of food that is baked or fried.
   B. A thick, malleable mixture of flour and liquid, used for baking into bread or pastry.
   C. a small flat or slightly raised cake
   D. a usually baked and leavened food made of a mixture whose basic constituent is flour or meal and garlic.

2. We went to the garden; the **sprouts** have become bigger and looked beautiful.
   A. A type of insects that are characterized by its reddish color.
   B. A seed germinated into its younger form.

   C. Mole's offspring.
   D. An acid fruit with a yellow round body.

3. The militia was **poised**, the day was almost there but no one was scared anymore.
   A. The state of being ready for any future task or event.
   B. The state of bravery.
   C. Something or someone who is cleaned and tight.
   D. Something or someone who joined forces for a shared objective.

4. Unfortunately, he was thin. His **meager** life was enough to put that man into such a being.
   A. Lack of responsibility.
   B. Full of unfortunate events.
   C. Lack of wealth.
   D. Unfortunate or without luck.

C. There are some pictures below. Write the correct noun in the line next to them.

1._____

2._____

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