Caroline Chioquetta Lorenset

FOREIGN LANGUAGE ACQUISITION AND DIGITAL GAMES PLAYING: A FOCUS ON VOCABULARY DEVELOPMENT

Tese submetida ao Programa de Pós-Graduação em Inglês: Estudos Linguísticos e Literários da Universidade Federal de Santa Catarina para a obtenção do Grau de Doutora em Inglês.
Orientador: Prof. Celso Henrique Soufen Tumolo

Florianópolis
2019

Ficha de identificação da obra elaborada pelo autor,
através do Programa de Geração Automática da Biblioteca Universitária da UFSC.

Lorenset, Caroline Chioquetta
Foreign Language Acquisition and Digital Games Playing: A Focus on Vocabulary Development / Caroline Chioquetta Lorenset ; orientador, Celso Henrique Soufen Tumolo, 2019.
229 p.

Tese (doutorado) - Universidade Federal de Santa Catarina, Centro de Comunicação e Expressão, Programa de Pós-Graduação em Inglês: Estudos Linguísticos e Literários, Florianópolis, 2019.

Inclui referências.

1. Inglês: Estudos Linguísticos e Literários. 2. Inglês como Língua Estrangeira. 3. Jogos Digitais. 4. Aquisição de Vocabulário. 5. Recursos Digitais para Ensino e Aprendizagem. I. Tumolo, Celso Henrique Soufen. II. Universidade Federal de Santa Catarina. Programa de Pós-Graduação em Inglês: Estudos Linguísticos e Literários. III. Título.

Caroline Chioquetta Lorenset

Foreign Language Acquisition and Digital Games Playing: A Focus on Vocabulary Development

Esta tese foi julgada adequada para obtenção do Título de Doutora e aprovada em sua forma final pelo Programa de Pós-Graduação em Inglês: Estudos Linguísticos e Literários.

Florianópolis, 27 de maio de 2019.

Prof. Celso Henrique Soufen Tumolo, Dr.
Coordenador do Curso

Banca Examinadora:

Prof. Celso Henrique Soufen Tumolo, Dr.
Orientador e Presidente
Universidade Federal de Santa Catarina

Prof.ª Viviane Maria Heberle, Dr.ª
Universidade Federal de Santa Catarina

Prof. Daniela Karina Ramos Segundo, Dr.ª
Universidade Federal de Santa Catarina

Prof. Lucía Silveira Alda, Dr.ª
Instituto Federal do Rio Grande do Sul

Prof. Fernanda Ramos Machado, Dr.ª (suplente)
Instituto Federal de Santa Catarina

Study without desire spoils the memory,
and it retains nothing that it takes in.
Leonardo da Vinci

ACKNOWLEDGEMENTS

I would like to sincerely thank:

God, for all the opportunities of learning, reflecting, evolving, working, teaching, studying, sharing amazing moments with my beloved ones and living this blessed life of mine;
My whole family – the nuclear and the extended. Even in moments they had not even awareness nor intention, they embraced me in a motivational and loving hug;
My mother, Rossaly, my main academic, personal and professional inspiration, for all the love, guidance, support and affectionate hours of academic and personal conversation on the phone (or drinking tea), sharing experiences and growing with each other;
My father, Ivor, who provided me with enthusiasm and understanding when I had to study instead of being together in good times;
My dearly loved sister Larissa, for being there for me at all times, for all the shared love, sisterhood and companionship. For being my inspiration of self-determination and commitment;
My dearly loved Júnior, for the understanding and profound companionship. For all the times of true and open conversations and knowledge exchange;
My husband Rodrigo, for all the love, the emotional support, respect and the understanding of my academic choices. For being there for me when I needed him mostly. For listening to me, and for the empathetic will of knowing more about my research object and choices;
My not-yet-born son Teodoro, for showing me that I am resilient and patient;
My inspirational advisor, Dr. Celso Tumolo, for his insightful attendance, for providing me guidance in the course of my academic blossoming. For all the meetings, for all the readings of my work, for all inspirational comments and for sharing directions when I could not see any. For being the proper encouragement and academic / professional example for me;

My much loved friends and colleagues at IFSC, Denize and Fernanda especially, for the support, for sharing insights, the love of teaching and continuous learning;
My much loved friends who were there for me when I needed them most throughout this academic path – both for entertainment and for emotional support: Nayara, Gabriela, Clarina, Beatriz, Damaris, Bruna, Flávia and Kátia;
The participants of my investigation, for being involved with so much will and enthusiasm. Without you and your commitment, this study would not be possible at all;
To IFSC, for providing me a whole year of dedication entirely to my research. For allowing me to collect data and to improve myself professionally by doing research;
My professors at PPGI and UFSC, throughout my learning pathway, for creating an environment where I could grow intellectually and improve myself. A special thanks to Dr. Adriana Dellagnelo, Dr. Maria Lúcia Milléo, Dr. Susana Fontes, Dr. Rosana Koerich (in memoriam) and Dr. Maria Ester Moritz for being inspirational researchers;
To PPGI for all the necessary support during the past years, for the shared information and for allowing academic development through publications and events participation;
The committee members, Dr. Celso Henrique Soufen Tumolo, Dr. Daniela Karine Ramos, Dr. Viviane Maria Heberle, Dr. Lucía Silveira Alda, and Dr. Fernanda Ramos Machado for reading my work and for sharing inspirational comments of how I could improve my research and myself academically;
To all those who have contributed in any way to my growth and to the elaboration of this research.

ABSTRACT

The use of digital technological resources, such as smartphones, computers, digital games and applications for educational settings is a quite recent phenomenon (Savi & Ulbricht, 2008). Although recent research emphasizes the importance of integrating technology into the curriculum, its use can only be effective for learning if well integrated in a meaningful way in the classroom (Squire, 2006; Prensky, 2007). Research shows that digital games can assist the teaching and learning process as a whole and, in particular, English as a foreign language (e.g. Gee, 2005; Sykes, 2013; Chik, 2014; Yunditseva, 2015). This investigation aims to characterize both vocabulary development and the use of the digital game *The Sims* by addressing theoretical bases in the area, and to investigate if and how *The Sims* can assist vocabulary of English as a foreign language. Theoretical framework is presented to foreground the investigation held in this study, which intends to contribute to a debate on the use of digital games for vocabulary development in English as a foreign language. Data collected involved 19 participants of a public school setting in Florianópolis, where they played 8 gaming sessions using the digital game *The Sims*. The instruments used were a pre-test, a post-test, a delayed post-test to meet the objective in investigating if digital games can assist vocabulary, as well as narrative writing and two oral interviews to meet the objective in investigating how digital games are perceived to assist vocabulary. Results indicated *The Sims* as effective for vocabulary acquisition in EFL, since it deals with routine and familiar vocabulary and offers a new virtual life and contextual learning for players.

Keywords: Digital Games. English as a Foreign Language. Technology for Teaching and Learning. The Sims.
Number of pages: 152 (excluding pre-textual and non-text elements, references and appendices)
Number of words: 51.497 (excluding pre-textual and non-text elements, references and appendices)

RESUMO

O uso de recursos digitais como *smartphones*, computadores, jogos digitais e aplicativos para ambientes educacionais é um fenômeno bastante contemporâneo (Savi & Ulbricht, 2008). Embora pesquisas recentes enfatizem a importância de integrar a tecnologia no currículo, seu uso só se torna eficaz para o aprendizado se for bem integrado de maneira significativa na sala de aula (Squire, 2006; Prensky, 2007). Pesquisas mostram que os jogos digitais podem ajudar no processo de ensino e aprendizagem como um todo e, em particular, de inglês como língua estrangeira (por exemplo, Gee, 2005; Sykes, 2013; Chik, 2014; Yunditseva, 2015). Esta investigação tem como objetivo caracterizar tanto o desenvolvimento de vocabulário quanto ao uso do jogo digital *The Sims*, abordando bases teóricas na área, e investigar se *The Sims* auxilia no aprendizado de vocabulário de inglês como língua estrangeira. Referencial teórico é apresentado para contribuir na área de uso de jogos digitais para aquisição de vocabulário em inglês como língua estrangeira. Os dados coletados envolveram 19 participantes de uma escola pública em Florianópolis, onde participaram de 8 sessões de jogos usando *The Sims*. Os instrumentos utilizados foram um pré-teste, um pós-teste, um pós-teste tardio para atender ao objetivo de investigar se jogos digitais auxiliam o vocabulário, bem como a escrita de uma narrativa e duas entrevistas para atingir o objetivo de investigar como os jogos digitais são percebidos como auxílio para aquisição de vocabulário. Os resultados indicaram *The Sims* como ferramenta eficaz para aquisição de vocabulário em inglês, uma vez que lida com vocabulário rotineiro e familiar e oferece uma nova vida virtual e aprendizado contextual para os jogadores.

Palavras-chave: Jogos Digitais. Inglês como uma língua estrangeira. Tecnologia para Ensino e Aprendizagem. The Sims.
Número de páginas: 152 (excluindo elementos pré- e não-textuais, referências e apêndices)
Número de palavras: 51.497 (excluindo elementos pré- e não-textuais, referências e apêndices)

LIST OF TABLES

LIST OF FIGURES

LIST OF GRAPHS

LIST OF ABBREVIATIONS AND ACRONYMS

CALL – Computer Assisted Language Learning
COTS – Commercial Off-the-Shelf
EFL – English as a Foreign Language
FL – Foreign Language
GAP – Game Affinity Paradigm
IFSC – Instituto Federal de Santa Catarina
LTM – Long-Term Memory
PPGI – Programa de Pós-Graduação em Inglês
STM – Short-term Memory
UFSC – Universidade Federal de Santa Catarina
WM – Working Memory

LIST OF APPENDICES

TABLE OF CONTENTS

CHAPTER 1 - INTRODUCTION

Since their origin, in the 1950s, digital games have been conquering new spaces and new audiences in people's leisure time, either for their motivational aspect, their prompt feedback, or their interactional and multimodal appeal. In the last decades, digital games have become an art form and an industry (Savi & Ulbricht, 2008), winning over a special place in industry and media markets in our contemporary culture. Usually, the first contact with digital technologies happens through the use of digital games (Gros, 2003), especially because they are multimodal (full of colors, sounds, music, images, good-quality graphics, and videos) environments, which may arouse positive emotions (Shinkle, 2008).

Digital games are characterized by several aspects, such as virtual characters or avatars, narratives, rules, restrictions, interactions, challenges, competitions, objectives, rewards and feedback (Prensky, 2007; Wangenheim & Wangenheim, 2012) that may contribute to learning and development of cognitive processes of players. Therefore, digital games can be seen as attractive and interactive environments that capture players' attention offering challenges with an increasing level of skills.

Numerous studies (e.g. Gee, 2005; Squire, 2006; Chik, 2011; Gee & Hayes, 2010; Reinders, 2012; Sykes & Reinhardt, 2013; Tumolo, 2014) address digital games as learning tools of several scholar areas and content subjects, including, among others, the learning of a foreign language[1]. Moran (2013) mentioned that digital technologies for educational purposes are growing in number use and frequency, and they have been making changes not only at family homes but in the scholar system as well. Hence, abilities, experiences and previous knowledge of the players become important sources to be explored and included in pedagogic and didactic choices by teachers and educators. In this context, digital games can be mentioned as a learning innovative tool that may allow active and meaningful learning in context, and competition and interaction among players, enhancing, thus, opportunities to experience and visualize concepts and new worlds, and

[1] In this study, it was opted for using foreign language or L2 to refer to all terms that address language learning, be they 'additional language', 'foreign language', and 'second language', although I understand that these terms are discussed and differentiated by experts.

to develop gamers' creativity and interest (Dempsey, Lucassen, Haynes & Casey, 1996; Gramigna, 2007) in different subjects and areas.

Besides being present in our daily lives, digital games can bring pleasure into learning (Squire, 2006; Gee, 2005, 2009), either by relaxing and easing considerably players to take decisions and make mistakes, or by motivating players to model the virtual scenarios and avatars according to their interests – all of these in the foreign language. Gee (2005) stated that good digital games represent good learning, allowing learners to feel like active agents making choices, not just passive recipients receiving the work done. By being active agents, players can learn through different styles, in addition to learning new skills, strategies, and consolidating ideas and concepts, consolidating in practice how school subjects can fit in bigger contexts (Gee, 2005).

Overall, digital games have been growing as a field of research in the area of learning foreign languages, especially because they conquer and motivate players. Researchers (e.g. Gee, 2005; Squire, 2006; Chik, 2011) have been investigating how digital games can function in classroom settings for learning purposes, and have established positive factors, aspects, characteristics and elements that may trigger learning[2].

The next section introduces theoretical background on digital games and vocabulary development that will work as a basis for this investigation, with an intention to contribute to a debate on the use of digital games for vocabulary acquisition in English as a foreign language.

1.1 Background of the Study

This section introduces a discussion on the contribution of digital games to learning (in general) as well as the contribution to language development[3], more specifically, its vocabulary. In this doctoral dissertation, the main investigation revolves around the use of a

[2] These characteristics, elements and factors from digital games that may elicit learning processes will be further presented in Chapter 2 – Theoretical Background, section 2.3 - Computer Assisted Language Learning.

[3] In this study, it was opted for using 'vocabulary development' to refer to all terms that address 'vocabulary acquisition', 'vocabulary learning', 'vocabulary instruction' and 'vocabulary development', and even though I acknowledge that there are experts that discuss and differentiate technically these terms, they are used interchangeably in this dissertation.

digital game, *The Sims*, as a resource for vocabulary development in English as a foreign language, therefore, the pieces of research presented next has served as inspiration for my own investigation.

In general, digital games can be defined as environments involving human interaction with virtual reality. This interaction among humans and digital technologies (that generate feedback) happens usually on video devices such as television screens, game consoles or computer monitors, which are further known by gamers as platforms (Javerlä, Ekman, Kivikangas & Ravaja, 2014). By selecting a platform to play, different game controllers can vary accordingly, although common controllers include mouse and keyboard, for a television platform, for instance, a joystick and buttons to control the game via a game console, or touchscreen of mobile devices to play in gadgets, such as smartphones and tablets.

In addition, previous research (e.g. Aghlara & Tamjid, 2011; Ebrahimi & Zamanian, 2013; Ramos, Lorenset & Petri, 2016; Saffarian & Gorjian, 2012; Sahrir & Alias, 2011) have stated that digital games, generally speaking, present potentialities by showing information in different modes, increasingly offering opportunities for vocabulary learning by being repetitive, providing instantaneous feedback, and offering players an environment where they can play and learn at their own pace.

By investigating a possible correlation among digital games and learning outcomes, several researchers (e.g. Aghlara & Tamjid, 2011; Ebrahimi & Zamanian, 2013; Ramos, Lorenset & Petri, 2016; Saffarian & Gorjian, 2012; Sahrir & Alias, 2011) have stated the benefits of digital gaming and how they can facilitate players learning performance. Some of the benefits mentioned by their investigations are factual knowledge, problem-solving strategies, and higher-level cognitive thinking processes, enhancing students' computer skills and digital literacy. Learning through digital games, furthermore, goes beyond learning languages boundaries, and are beneficial for players social and cognitive skills.

When investigating general broader learning principles triggered by digital gaming, Gee (2005) proposed the following aspects that assist learning: 1) co-design; 2) customization; 3) identity; 4) manipulation and distributed knowledge; 5) well-ordered problems; 6) cycles of expertise; 7) information 'on demand' and 'just in time'; 8) skills and strategies development; 9) system thinking; among others. The author stated that these aspects are available on good digital games,

and that they act deeply in cognitive processes because they prompt deep learning to a parcel of fun (Gee, 2005).

In a similar vein, Squire (2006) stated that a core characteristic of digital games is that they are organized around *doing* and *being*. By doing and by being someone else in virtual worlds, players become agent learners, which is a core characteristic of learning: through performance. As a result, many contemporary digital games literally put players inside the game, allowing them to create new identities and to create a life setting in a new virtual environment. As a matter of example, *Wii* games allow players to become tennis players, dancers or drivers, acting like them for real: players are inserted in tennis matches where they have to move their tennis racquets faster than their opponents; they have to be dancers good enough to follow the songs' beats in a proper rhythm; and they have to be good drivers that follow traffic laws. Another example of a digital game that inserts players in a simulation virtual world is *The Sims*, which allows players to create avatars mirrored in their own lives, where they work, study, and have a personal life and aspirations (Menezes, 2013).

Specifically related to this research object, Gee (2005) mentioned that digital games can create an understanding of vocabulary by connecting game actions in context, goals, and images to learners' personal previous experiences. As will be further explained in this research (in the next chapter), repetition of words in context might enhance learning opportunities of lexical items.

Considering aspects and benefits aforementioned, it seems relevant to research whether and how (in terms of participants' perceptions) digital games help in the learning of vocabulary of English as a foreign language in the context of a public school in Florianópolis, Brazil.

Bearing this in mind, the next section presents research general and specific objectives and research questions of this study that guided me and that I tried to answer.

1.2 Objectives and Research Questions

This investigation aims, as a general objective, to investigate the contribution of digital games to vocabulary development whether and how (in terms of participants perceptions) the digital game *The Sims* assist vocabulary of English as a foreign language. As for the specific objectives, this study aims to:

1) Unveil if the digital game *The Sims* assisted vocabulary development in a real English as a foreign language setting, considering participants quantitative scores;
2) Describe and analyze participants' perceptions on *The Sims* digital game playing for vocabulary development in a real foreign language setting, considering their written narratives analysis;
3) Interpret and analyze participants' perceptions on *The Sims* digital game playing for vocabulary development in a real foreign language setting, considering their oral interviews transcriptions.

In an attempt to reach those objectives, there are three research questions that guide this doctorate research:

RQ1: To what extent does the digital game *The Sims* assist vocabulary development in a real English as a foreign language setting, as indicated by the pre-, post- and delayed post-tests participants' scores?

RQ2: How does the digital game *The Sims* assist vocabulary development in a real English as a foreign language setting, as indicated by participants' perceptions, according to their narratives?

RQ3: How does the digital game *The Sims* assist vocabulary development in a real English as a foreign language setting, as indicated by participants' perceptions, according to their interviews?

The research questions are answered and discussed in Chapter 5 – Data Discussion. Next section presents the significance and motivation of this research.

1.3 Significance and Motivation of the Study

A path without a heart is never enjoyable. On the other hand, a path with heart is easy – it does not make a warrior work at liking it; it makes for a joyful journey; as long as a man follows it, he is one with it.
Carlos Castenada

With a growing interest in technological digital resources integrated to educational settings, it seems significant to investigate whether and how (taking into consideration participants perceptions)

digital games can assist vocabulary learning in English. Integrating digital technological resources into the real setting of English as a foreign language classroom scenario is part of my own personal and professional interests and the main objective of this research.

For me, there has always existed a motivated manner to teach and learn English via the use of both traditional non-digital and digital games. Therefore, searching and researching ways to get students motivated to learn English as a foreign language and by enjoying themselves has been a significant inspiration for this doctoral research. Besides, learning English in real contexts by playing games seems to be relevant both for me, as a teacher and a researcher, and the students.

Although there is not much research about the use and efficiency of games in real foreign language contexts (Uzun, 2009), there are hardly any negative opinions given against the use of digital games by teachers or students for learning purposes. Additionally, through classroom observations and informal talks with other teachers and students, the majority of them mentioned that the use of digital games for learning purposes create fun, relaxed and motivational environments free of anxiety. This has caused me more motivation and will to research on this topic.

By investigating the use of *The Sims* for vocabulary learning purposes in English in a real foreign setting, this research holds theoretical background regarding those topics, and raises some reflection on the use of digital games for learning in general. This study aims at contributing to the area of language teaching and learning by bringing into light results that may be applied in real and typical contexts, such as the one that was the setting of this research – where participants have been learning English as a foreign language in a public school in Florianópolis.

1.4 Organization of the Dissertation

Following the introductory chapter, Chapter 2 introduces a theoretical background regarding: a) foreign language development and teaching practices; b) vocabulary development in foreign language teaching and learning, in terms of memory issues and how vocabulary development happens incidental or intentionally, regarding frequency and number of encounters with words, and involvement; c) CALL, focusing on historical facts and previous investigations on the topic, and its relation to multimodality, stating also digital games characteristics and benefits, and emotions, motivation and flow state and how they can

be triggered by digital games; d) studies on vocabulary acquisition through digital games, also presenting characteristics and learning contributions of the game *The Sims*.

Subsequently, Chapter 3 presents the research design, the objectives, the participants, the instruments and the procedures for data collection and data analysis. In the sequence, Chapter 4 provides data analysis, followed by Chapter 5, where a discussion regarding data analysis is held. Finally, Chapter 6 presents the research summary, the final remarks and the limitations of the study.

CHAPTER 2 - THEORETICAL BACKGROUND

Understanding foreign language development usually requires detailed knowledge of what a human language can be, its contexts and linguistic diversity. Foreign language development research can be intricate by the fact that a large number of interacting variables contrast and conspire to shape the final outcome for any learner (Kuhl & Gleitman, 2007), such as teaching and learning techniques, memorization, learning styles and strategies, motivation, emotional states, among others. According to Kuhl and Gleitman (2007), although languages are much alike in many of their features, they can also vary marvelously in their specifics.

This chapter introduces theoretical background on foreign language learning and teaching practices, concentrating on vocabulary acquisition, since this research aims to investigate how the digital game *The Sims* can aid / assist learning. Moreover, it provides an overview of investigations on Computer Assisted Language Learning, focusing particularly on (both serious and entertainment) digital games characteristics and benefits, pinpointing motivation, emotions, and flow state. Also, it is discussed the roles of memory, information processing model and attention and awareness to learning vocabulary. In addition, this chapter presents and discusses the digital game *The Sims* (which is the digital game investigated) and previous research on the area. Finally, this chapter presents pieces of research on vocabulary acquisition through digital gaming which served as inspiration and basis for the present study.

2.1 Foreign Language Development and Teaching Practices

There is a wide range of competing teaching theories, methods and approaches that usually offer different perspectives on how they can promote language learning (Ellis, 2005). This section, therefore, intends to contribute to the teaching and learning of English as a foreign language area by presenting briefly some highlights of methods and instructional practices. Although the area of teaching practices does not represent the main focus of this doctoral dissertation, it is considered necessary since it allows a general background understanding of how teaching practices have evolved and have been adopted over the years, especially for learning foreign languages.

As stated by Brown (2002), from the XVIII century on, language teaching professionals have been involved in a foremost search for an

ideal teaching method, generalizable across widely varying audiences, that would successfully teach students a foreign language in the classroom. Therefore, what happened next in this teaching scenario was a succession of methods, each of which is more or less surpassed by in due course as a new method takes its place. With the help of methods and approaches such as Grammar-Translation, Direct Method, Audiolingual, Silent Way, Total Physical Response, Communicative Language Teaching, among others, lots of people may have learned English.

However, more recently, curriculum planners and language teachers

> have been moving away from the idea that there is a single 'right' method for teaching language and have come to the conclusion that the most effective approach to language teaching is to employ a combination of methods (Tavakoli & Jones, 2018).

This way, more than one method or approach can be combined for the purposes of teaching and learning a foreign language.

Nonetheless, there is an approach that has emerged from this thinking: the Ecological Approach to language teaching and learning. The Ecological Approach "advocates creative educational experiences and learning activities which can awaken learners' agency and provide them with opportunities to work as members of learning communities on challenging projects" (Tavakoli & Jones, 2018, p. 3). An example of ecological approach includes this research objective, which integrates the use of a digital game to create (English as foreign language) learning opportunities in real-life classroom contexts.

In this sense, it is known that foreign language development and teaching practices have been debated for many years, involving many researchers who have proposed hypotheses, approaches, and methods in attempts to best explain it, sometimes having a conflicting nature, sometimes having a complementary one. Over the last two centuries, many foreign language teaching methods have "reached their pinnacles and also waded as new second language learning theories came along" (Pires, 2018, p. 36). As Brown (2002) mentioned, all methods have left a mark on how foreign languages are understood and still taught nowadays:

> [a]lthough traces of the principal ingredients of the old methods still effectively find their way into our array of pedagogical options for

> treatment, our profession has emerged into an era of understanding a vast number of language teaching contexts and purposes, and an even larger number of student needs, learning styles, and affective traits (p. 17).

Knowing and staying connected to both the historical aspects and the latest trends to language teaching – without pre-packaged methods, therefore, allows teachers to promote learning opportunities and to create individualized effective classes where students can benefit and learn. As stated by Tavakoli and Jones (2018), research findings have not found conclusive results that identify a single method or approach that works for an array of different contexts and settings. Nonetheless, "researchers have found that effective approaches to FL instruction exhibit a number of characteristics" (Tavakoli & Jones, 2018, p. 2) that combined make learning possible.

Some of the characteristics that foster FL learning include input, opportunities for interaction and output, feedback, relevant and appropriate assessment, strategies that facilitate autonomous learning and agency, metalinguistic and pragmatic knowledges, learner engagement and motivation (Tavakoli & Jones, 2018). Most of these characteristics are present in this object of investigation and will be further explored in this chapter as benefits of playing the digital game *The Sims* with aims of learning lexical items in English as a foreign language.

Since a broader goal of this investigation is the area of teaching and learning vocabulary development through digital games playing, the next sections will concentrate on those issues. The next section, therefore, focuses on theoretical framework concerning vocabulary development and its groundwork.

2.2 Vocabulary Development in Foreign Language Teaching and Learning

Without grammar very little can be conveyed,
without vocabulary nothing can be conveyed.
David Arthur Wilkins

Vocabulary acquisition once was considered a neglected aspect of language learning; however, "over the last three and a half decades, research in vocabulary acquisition has flourished" (Sok, 2014, p. 21). Several authors have stated that learning vocabulary in a foreign language is, in fact, an important initial step towards the language

learning (Nation, 2001; 2003; Schmitt, 2000; Vahdat & Behbahani, 2013; Yudintseva, 2015). Vocabulary learning plays a central role since it is usually one of the opening steps towards the building blocks that build whole messages in communication.

According to Laufer (1997), a language speaker can say he/she know a lexical item when they manage the following: their spoken or written forms; words structures - in terms of basic free morpheme, common derivations and inflections; syntactic patterns of a word in a phrase or sentence; their referential, affective and pragmatic meanings; their lexical relations in terms of synonymy, antonymy, and hyponymy; and finally, their common collocations. In consonance, Min (2013) suggested that there are three conditions for speakers or language learners to be able to say they know a word: which words it is usually associated with; what are its grammatical characteristics and how it is pronounced and spelled.

Besides, according to Nation (1990; 2001) and Yudintseva (2015), by the age of 20 years old, an English native speaker knows around 20.000 word families (which consists of the headword, its inflected forms, and closely related derived forms). Also, Nation (2001) stated that the most part of the words an adult knows by the age of 20 is high-frequency words, that is, function or content words related to their daily personal experiences. For instance, 'field-related words' are easier to learn because they are high-frequency for professionals in the area of health issues and diseases, such as a pharmacist or a doctor; or for an industrial or a mechatronic engineer in the area of devices and machinery. These are known as the high-frequency word families, and they represent eighty percent (80%) of the vocabulary understanding of an adult person. On the other hand, academic words represent only nine percent (9%), whereas technical words five percent (5%), and low frequency words (proper nouns and rare words, for instance) demonstrate also five percent (5%) (Nation, 2001) of a speaker knowledge.

Having this in mind, however, several authors (Calderón, Slavin & Sánchez, 2011; Kelley, Lesaux, Kieffer & Faller, 2010; Oxford and Crookall, 1990; Shanahan & Shanahan, 2012) stated that vocabulary instruction would be expected to be at the top of the agenda for language teachers, either for mother or foreign languages. Nevertheless, what has happened in most classrooms throughout many years is usually the opposite: vocabulary, many times - and for different reasons - has not been explicitly taught (Oxford and Crookall, 1990). According to these authors, learners were, for that reason,

> expected to ‘pick-up’ vocabulary on their own without any guidance. […] Many instances of so-called vocabulary instruction involve merely giving students lists of words to memorize or providing limited practice opportunities, with no further assistance to the often-overwhelmed learner (p. 09).

In order to avoid alleged repetitive and boring lists, as mentioned above, the authors, then, described some techniques of vocabulary instruction that can be used by foreign language teachers in their classroom practices. The techniques, although can be considered quite antique[4] and bygone, are still in use by many language teachers and are, therefore, considered timeless and enduring. These techniques for teaching vocabulary are classified into four groups: 1) decontextualizing, 2) semi-contextualizing, 3) fully contextualizing, and 4) adaptable; and are presented next.

The first technique, decontextualizing, is the one that removes words as completely as possible from its context, such as isolated word lists, flashcards, and dictionary use. The second, semi-contextualizing technique, allows some degree of context but fall short of full contextuality. Examples of this technique can be word grouping, semantic mapping and word association activities. The third, fully contextualizing technique, embeds the new learned words in a communicative context, such as tasks that integrate some of four language skills (reading and listening, and speaking and writing) into practice. These three techniques are not disconnected and can form a continuum of contextuality to be applied in classroom practices. The fourth technique, adaptable, can reinforce and unite the other three former techniques to a new distinctive or necessary context, adaptable to different classroom contexts or activities.

In addition to the aforesaid vocabulary instruction techniques, Oxford and Crookall (1990) added that an important aspect to be considered is the learners’ sensory and learning style preferences, which might affect vocabulary learning. Besides cultural and ethnic differences in learning styles, also visual, aural, tactile, and kinesthetic preferences should be assessed consciously, matched to learners' style preferences and interests in the learning processes. Preparing focused vocabulary

[4] Although this investigation (Oxford & Crookall, 1990) is considered quite ‘antique’, it has set the scene for vocabulary instruction research and has served as inspiration for my investigation, establishing sharp insights on the area. Due to that, their work is mentioned in my dissertation.

classes and activities to be used in the classroom according to students' needs seem to be the best for learning environments.

In a similar vein, Hatch and Brown's (1995) research developed some steps for vocabulary learning to make it relevant and useful for learners. They are five: 1) having sources for encountering new words; 2) getting a clear image, either visual or auditory or both, for the forms of the new words; 3) learning the meaning of the words; 4) making a strong memory connection between the forms and meanings of the words; and 5) using the words. The author stated that the more the terms are repeated - five times or more - the easier the learning gets. Lexical items learning, then, can happen more easily through the use of common and familiar words; consistency in use and repetition of terms; more than five repetitions of words; and definitions of words in context (Hatch & Brown, 1995).

Nowadays, all these above-mentioned techniques would be easily applied including the use of digital technologies in classroom practices, since it allows for a range of different possibilities and opportunities for learning to take place. Taking this in consideration, more recently, Liu, Lan and Jenkins (2014) went further in the discussion and identified more strategies for vocabulary instruction, this time including and embracing digital resources. In a research investigating lexical learning via an array of technological resources, the authors concluded that there are 12 types of appropriate strategies for vocabulary learning, which are: practice, notetaking, keywords, contextualization, grouping, imagery, recombination, deduction, analysis, physical response, translation, and transfer (Liu et. al, 2014).

Similar to techniques for vocabulary development, there are studies (e.g. Chik, 2014; Yudintseva, 2015) that relate repetition, images association and contextual clues to greater opportunities for learning and they will be further presented in this chapter. Bearing this in mind, it seems relevant to investigate more about how vocabulary can be developed in one's mind and what previous research has mentioned about this topic. Besides vocabulary development though the techniques previously presented, there are other factors that may contribute to foreign language teaching and learning, such as deferred imitation, and assimilation and accommodation. They will be addressed next.

Deferred Imitation

When dealing with language learning, there is a process that might happen especially for foreign language learners, since they are

learning a new language that is not commonly spoken or available in their daily contexts. Deferred imitation can be defined as an ability to reproduce a previous content or action in the absence of current perceptual support (Hopper, 2010). Much common among mammals, according to Hopper (2010), through deferred imitation individuals are able to encode, store information and retrieve it later. As will be discussed in Chapter 5 – Data Discussion, this might be the case of some participants in this research who had their quantitative tests scores increasing after the gaming sessions ended.

Assimilation and Accommodation: Self-Regulation Processes

Still another possibility or factor that might affect vocabulary development is the Piagetian[5] concepts of assimilation and accommodation. On one hand, in accordance to Bodner's (1986) work, adaptation "or equilibration in Piaget's model has been described as an internal self-regulating mechanism that operates through two complementary biological processes: assimilation and accommodation" (p. 873). On the other hand, assimilation to pre-existing cognitive structures may be a constant process throughout a learner's life:

> [w]e assimilate the world in the sense that we come to see it in our way. Disequilibration occurs when we cannot assimilate our experiences into preexisting schemes, when we encounter a problem because we cannot achieve our goals. Equilibrium is restored by modifying these preexisting schemes until the discrepancy is resolved. The process by which existing structures are modified to fit newly assimilated data is called accommodation (p. 3).

Accommodation, consequently, occurs when the learners realize that the triggered activity does not give the expected result anymore (Bodner, 1986, p. 3). More recently, in a similar vein, according to Reinking (2000),

> assimilation is the process by which new information is merged with existing knowledge structures without changing those structures.

[5] Even though Piaget's work has received some criticism for making use of small sampling for research and controversial methods applied, the researcher has generated great insights in the area of developmental psychology and learning, heavily influencing research into education and providing detailed accounts for youth's cognitive development.

> Accommodating new information, on the other hand, requires that existing knowledge be restructured to fit new information, which eventually transforms the way a learner views and understands the world. The Piagetian model is developmental because learners are viewed as gaining increasing levels of maturity in their knowledge as they pass through several distinct stages, each of which comprises an iterative process in which assimilation gradually gives way to accommodation. Likewise, in that model, learners at one stage of development may not be developmentally capable of accommodating certain information, having only the capability to assimilate it, which leads to responses that may be puzzling or frustrating to those who have achieved a more mature developmental level (p. 111).

According to the previous quote, a learner or a participant of this doctoral investigation would, then, assimilate and accommodate in a later period the new acquired lexical items from the gameplaying of *The Sims*. Other than that, other self-regulation processes may play a role in vocabulary development in EFL, and they will be discussed in the next paragraphs.

As mentioned by Ferreira (2003), learning is constructed from subjects internal organization, that is, there only exists learning when the person is able to interpret new situations parting from the internal organization previously performed, allowing new internal organizations more complex to happen - thus enriching previous structures and schemes. This is known as self-regulation (Ferreira, 2003).

Self-regulation derives from the adaptation of problems and functions in the process of equilibration, as a sequence of active compensations that accompany external changes (Ferreira, 2003). In the whole learning process, therefore, there is an equilibration, structuring and organizing action of the subject that seeks improvements in their structures in 4 processes: biological maturation; acquired experiences and reflected in actions; social interactions; and equilibration, that constitutes a form of adaptation of the first three processes (Ferreira, 2003). In accordance to the author, equilibration, furthermore, is the process by which every individual understands the exterior reality organizing it according to his/her structures, and action and thought schemes, adapting it to the structures and schemes that allow them to perform thanks to internal transformations recreated by assimilation and accommodation (Ferreira, 2003). In the case of vocabulary learning, therefore, this would happen when a new lexical item is learned and equilibrated according to its context among other lexical items (related to that recently acquired words) previously learned.

Next section deals with vocabulary development and its relation to memory, including issues such as working and long-term memory, information processing model, and attention, awareness and noticing, and the ties of vocabulary, memory and digital games.

2.2.1 Vocabulary Development: Commitment to Memory

Foreign language learning, and, therefore, vocabulary learning is, in most cases, a memory task (Williams & Lovatt, 2003). The present section revolves around cognitive constructs that are often invoked when discussing language learning and memorization, which includes working memory and long-term memory, information processing model and the degrees of attention, awareness and noticing. Finally, there is a sub-section presenting previous studies that investigated the ties revolving around vocabulary development, memory and digital games playing.

Working Memory and Long-Term Memory

Memory, for a long time, used to be differentiated in short-term memory (STM) and long-term memory (LTM) aspects. However, more recently, Baddeley (2010) mentioned that STM has evolved to a new concept called working memory (WM), where there is a temporary storage of small amounts of material over brief periods of time. However, there are other studies that acknowledge the coexistence of both WM and STM (e.g. Aben, Stapert & Blokland, 2012), where both are still being used, on occasion, interchangeably. Taking into consideration the vast amount of research on the area, the lack of agreement among them is remarkable. However, this research discusses memory aspects echoing the calls developed by Baddeley (2010; 2012; 2015), to be presented next.

Working memory, as defined by Baddeley (2010), refers to the systems "that are assumed to be necessary in order to keep things in mind while performing complex tasks such as reasoning, comprehension and learning" (p. 136). In this research, then, WM deals with limited amount of information just before recall[6]. On the other hand, LTM

[6] According to Baddeley, Eysenck and Anderson (2009), recall (or retrieval), alongside with encoding and storage, is part of the core processes of memory. Recall refers to the mental process of retrieving past information. Encoding allows a perceived item to be converted in a construct which can be stored within

encompasses skills, procedural memories, and conditions - which interact and converse continually with WM. In sum, STM refers to "the simple temporary storage of information, in contrast to WM, which implies a combination of storage and manipulation" (Baddeley, 2012, p. 4). The WM model, therefore, has its roots in the STM model.

In the original Baddeley and Hitch (1974) model, WM model dealt with three processes: a central executive, the phonological loop and the visuo-spatial sketch pad. In the development of a recent investigation, entitled the multi-component model, Baddeley (2012; 2015) presented a model that involves the flow of information from perception to WM, which can be seen in figure 2.1. This recent model accounts for a fourth component, which is the episodic buffer.

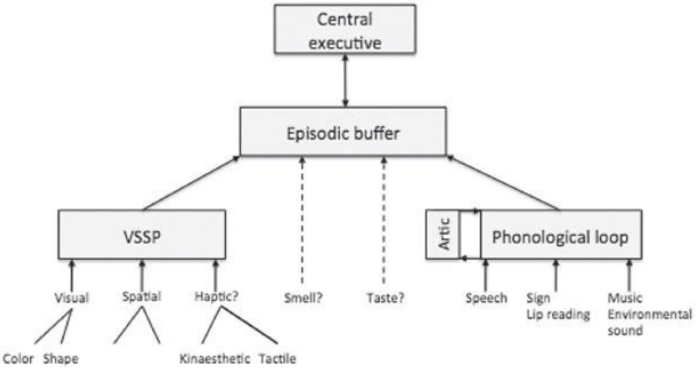


Figure 2.1. The recent and speculative model of information flow from perception to WM (according to the image presented in Baddeley, 2012, p. 22).

According to Baddeley (2015), the phonological loop, which facilitates the acquisition of new words, is linked to a phonological LTM, where both operate in both directions, making easier and richer the acquisition of new lexical items. This link is speculated to occur similarly between visuospatial semantics and the sketch-pad (Baddeley, 2015), although, as mentioned by the author, this still needs further investigation. While the phonological loop brings together language-

---

the brain; while storing refers to the process of placing newly acquired information into memory, which can be modified for easier storage.

related sources, such as verbal[7] language systems, the visuo-spatial sketchpad involves, as the name says, visual and spatial systems, linked to spatial location, color and shape.

The central executive is capable of attentional processing, dealing purely with attention systems (Baddeley, 2015). Initially, the assumption was that the central executive controlled the episodic buffer, but after extensive investigation, it was concluded that advantages "from the semantic and syntactic constraints of sentences came from LTM and was relatively automatic" (Baddeley, 2015, p. 21). It was concluded, then, that the episodic buffer function as a passive store system, rather than a dependent attentional component to memory. As can be seen in figure 2.1 above, the question marks emphasize that further investigation is still needed for aspects such as how smell and taste are linked to episodic buffer, and how kinaesthetic and tactile systems are involved in the visual-spatial sketchpad (Baddeley, 2015).

One final issue, however, concerns the relation of WM and LTM. According to Baddeley (2015), WM is seen "as providing an interface between cognition and action" (p. 21), while taking actions and interacting with the world is allowed by LTM. Figure 2.2 shows the complex and multiple links between WM and LTM, according to Baddeley (2015) latest research.

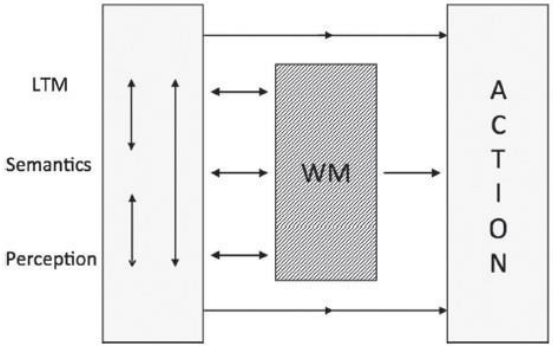


Figure 2.2. The recent view regarding complex and multiple links between WM and LTM (according to the image presented in Baddeley, 2012, p. 23).

[7] According to Wen (2012), verbal language systems include articulatory rehearsal processes, analogous to subvocal and inner speech.

As can be seen in figure 2.2, information entering WM can come from different sources which interact with themselves. As a matter of example, Baddeley (2015) mentions that, in terms of vision, people have the tendency of perceiving the world according to meaningful objects to them – which is a process that depends on LTM. However, according to the author, "the function of all of this activity is to allow us to interact with the world, to take in information and to act upon it" (Baddeley, 2015, p. 21).

Put in a nutshell and still in consonance to Baddeley (2015), the phonological loop is linked to a phonological LTM, where both operate in both directions, making easier and richer the acquisition of new lexical items. Although further investigation is needed, according to Baddeley (2015), the same link is speculated to occur between visuospatial semantics and the sketch-pad. Consecutively, the central executive is capable of attentional processing, dealing purely with attention systems (Baddeley, 2015), and that the episodic buffer works as a passive store system. This way, attention necessary for learners to notice new words comes from the central executive system. After having noticed new lexical items, this goes through WM, and, if repeated enough or whether meaningful for learners, these lexical items will go through LTM. This relation between WM and LTM, in turn, may result in learning.

In the next sub-section, information processing model is discussed in terms of language learning.

Information Processing Model

According to McDermott and Roediger (2018), there are three stages of memory process for learning to take place: encoding, storage and retrieval. While encoding "is defined as the initial learning of information; storage refers to maintaining information over time; retrieval is the ability to access information when you need it" (McDermott & Roediger, 2018, p. 120).

Encoding is the initial experience of perceiving and learning information that is around people, and

> an important first principle of encoding is that it is selective: we attend to some events in our environment and we ignore others. A second point about encoding is that it is prolific; we are always encoding the events of our lives—attending to the world, trying to understand it. Normally this presents no problem, as our days are filled with routine occurrences,

> so we don't need to pay attention to everything (McDermott & Roediger, 2018, p. 121).

In addition, there seems to be an agreement in the area that claims that some events or, in the case of language learning, some information become distinct and are more easily remembered than others. For instance, vivid memories linked with emotional contents may be more easily recalled than those that are not. Many times, also, recalling information may not be accurate as people would imagine: "details do not leap perfectly from the world into a person's mind" (McDermott & Roediger, 2018, p. 122).

Furthermore, the process of encoding always pinpoints processes of recoding, that is the ability to take "the information from the form it is delivered to us and then converting it in a way that we can make sense of it" (McDermott & Roediger, 2018, p. 122), restating that encoding is selective: people cannot encode all information they are exposed to and many times recoding can add information to what was not seen, read or heard during the encoding stage. That is why, according to the authors, people tend to go beyond the information given and infer meanings from what is happening or make associations (McDermott & Roediger, 2018). All in all, encoding is the initial registration of information - essential for learning languages, although there is no guarantee it will be remembered later.

The second stage of memory process is storage, that is the ability to store information in the brain. In accordance with McDermott and Roediger (2018), after having encoded experiences within the nervous system, the brain changes itself to store information that left memory traces through a process of consolidation:

> [i]t is important to understand that memory traces are not perfect little packets of information that lie dormant in the brain, waiting to be called forward to give an accurate report of past experience. Memory traces are not like video or audio recordings, capturing experience with great accuracy; as discussed earlier, we often have errors in our memory, which would not exist if memory traces were perfect packets of information. Thus, it is wrong to think that remembering involves simply "reading out" a faithful record of past experience. Rather, when we remember past events, we reconstruct them with the aid of our memory traces—but also with our current belief of what happened (McDermott & Roediger, 2018, p. 125).

This means that memory is a construction of what you actually remember from an event and what you believe it happened: remembering is a reconstruction of the past with the aids of memory traces in storage, and not a perfect reproduction of it (McDermott & Roediger, 2018).

Finally, the key (and third) stage of memory process is retrieval. As previously stated, people encode and store lots of information and events daily, creating memory traces in the brain. Accessing these memories is retrieval. However, most of these memories will never be used being brought back to mind consciously because people access only a tiny portion of what they lived (McDermott & Roediger, 2018), and some emotional, distinctive or meaningful cues should take place. Moreover, each time an event is retrieved, it is altered since "memory is constantly changing" (McDermott & Roediger, 2018, p. 129).

Thus, to improve language learning and memory, events need to be encoded in conjunction with memory traces that will bring back stored information - that is, remembered events. Other than that, "to maximize retrieval, we should construct *meaningful* cues that remind us of the original experience, and those cues should be *distinctive*" (McDermott & Roediger, 2018, p. 131).

Having in mind that memory is not reproductive, but constructive, we now turn our discussions to a considered memory error (Kelly, 2013), that is forgetting. While forgetting can be the result of poor encoding or weak cueing, there are other factors that may hinder memorization.

According to Kelly (2013), memories can be of three types: episodic, procedural and semantic. Episodic memory is short as few seconds contend, such as a movie of an experience or the way people remember events, while procedural memory is the ability to remember previous episodes of our lives, such as skills and habits (Kelly, 2013). Semantic memory, on the other hand, is for meanings and facts and may be defined as "our storehouse of more-or-less permanent knowledge, such as the meanings of words in a language (e.g., the meaning of "parasol") and the huge collection of facts about the world" (McDermott & Roediger, 2018, p. 119).

Episodic memory, therefore, is particularly faulty, as stated by Kelly (2013), and this is resulted by the "basic inability to retrieve a memory" (p. 48). According to the author, there are an array of reasons for forgetting in the language learning area: weak encoding and/or poor cueing, learners' (lack of) attention, emotional factors and spaced repetition.

While weak encoding may be the main reason for forgetting, "poor cueing or absent-mindedness, not being able to associate a memory with a retrieval cue, is another problem. Weak encoding and poor cueing are most likely when we are not really paying attention" (Kelly, 2013, p. 48). So that is why having students' full attention when you are teaching may be helpful, or teaching them how to pay full attention to important and necessary words, for instance, may also create more opportunities for learning.

Also, emotional factors may play a role in retention or forgetting of events. According to Kelly (2013), bringing innovation to teaching practices can be resourceful and motivational, triggering positive emotions and better retention. Therefore, learning would take place more easily. In addition, Kelly (2013) claimed that spaced repetition might cause better retention – spreading the content in two or more sessions or repeating the content in space repetition "causes the recently made networks to reactivate and consolidate the connections" (Kelly, 2013, p. 49). This may be the case of digital games, that are innovative and motivational on their use in the classroom environment, that would allow for more spaced repetition and emotional factors according to players actions in the game.

Next sub-section defines attention, awareness and noticing concepts as part of learning and memory processes, taking part in vocabulary development for the purposes of this study.

Attention, Awareness and Noticing

According to Schmitt (1994), there are three concepts that relate to vocabulary development: attention, awareness, and noticing. They are all intricate and crucial to language learning, although the terms may still lack precision (Ahn, 2014).

Attention consists of a set of subsystems that controls information processing, such as alertness, orientation, detection of stimulus, facilitation, and inhibition. In other words, it is the capability of concentrating on some things while ignoring others. It is also defined as "necessary and sufficient condition of long-term storage" (Schmidt, 2001, p. 16) in memory. As previous research stated, as specified by Schmidt (2001), there is apparently no doubt that more attention leads to more learning. Moreover, Robinson (1995) claimed that the concept of attention is related to three main uses. It can be used to: 1) select the information to be processed and stored in memory; 2) describe our

capacity for processing information; and 3) describe the mental effort involved in processing information.

Following Robinson (1995) concepts, therefore, attention is selective, limited and subject to voluntary and conscious control. As argued by the author, in addition to attention, there is also another central cognitive mechanism implicated in proposals for foreign language learning: awareness (Robinson, 1995, p. 284). According to Schmidt (2001), awareness consists of learners' knowledge or experiences when they are detecting a stimulus, which can also be related to vocabulary acquisition: "there may be forms of awareness that depend minimally on attention" (Williams, 2013, p. 21). Therefore, while attention refers to the psychological systems that control information detection and processing, awareness refers to the individual and subjective perception of the stimulus (Schmidt, 2001).

Going further in the discussion, Schmidt (1995) mentioned that noticing is considered to be a degree of awareness and that attention is a requirement for noticing (Schmidt, 2001). Noticing takes place when learners notice new words in input, later transforming this in intake, which is, in turn, necessary for language learning, facilitating foreign language acquisition by means of mediating the processing and storing of input in memory. Furthermore, Schmidt (1990) specified that several factors impact on noticing, such as: a) input – in the target language, for instance; b) frequency - the more something appears, the bigger is the chance of being noticed; c) perceptual salience - the more prominent something is, the higher are the chances of being noticed; d) skill level of the individual – according to their previous knowledge; and e) tasks demands – required by the activity.

According to Schmidt (1995; 2010), the aforementioned factors play an important role in vocabulary acquisition since they may enhance the process opportunities of encoding into LTM. In accordance with Schmidt (1995; 2010), Nation (2001) stated that for noticing to happen, motivation and interest are necessary. Relating this to this doctoral research, learning opportunities (i.e. noticing, awareness and noticing) could be enhanced through learners' increasing motivation and interest in new lexical items by, for instance, playing *The Sims* as part of classroom practices for vocabulary acquisition.

Recent research, according to Iwanaka (2011), had employed attention and awareness as independent variables. In addition, the author mentioned that learning with awareness is far superior (compared to decontextualized or unattended learning, for instance), and that attention is necessary for learning a foreign language. According to the author,

foreign language learning is mainly motivated by what learners pay attention to in the target language input with the centrality of attention. These results can be interpreted to support the importance of attention, awareness and noticing in foreign language learning (Iwanaka, 2011).

By way of summary, then, attention refers to the psychological systems that control information detection and processing, while awareness refers to the individual and subjective perception of the stimulus (Schmidt, 2001). Noticing, in turn, may be considered a degree of awareness, required by attention, which takes place when learners notice new words in input. Research presented in this section, moreover, indicate that these three aforementioned factors might be necessary for language learning. Therefore, it seems reasonable to state that attention, awareness and noticing, when intricate, might result in language and vocabulary development.

Next sub-section presents previous investigation regarding vocabulary development, memory and digital games playing, relating to what was previously discussed.

Vocabulary, Memory, and Digital Games

With an interest growth on this interactive, multimodal and popular technological resource, recent research about digital games have been done focusing on their potential characteristics that allow for an enhancement on language learning experiences. This sub-section presents pieces of research that integrates vocabulary development, memory and digital gameplaying.

Relating memory issues to digital games, Franciosi (2017) stated that agency, which is an integral component raised by digital gameplay, allows players to consider how various game aspects can influence their future, establishing a relation to their real-life experiences. Ultimately, this might influence positively vocabulary learning and memorization in players due to linguistic and non-linguistic information that has been found to facilitate memory and learning of vocabulary, not overwhelming players and supporting sensory information retention.

According to the author, the effectiveness of digital games in vocabulary learning has been already demonstrated: “association with audiovisual information, and compelling problem-solving scenarios that evoke strong emotions would all serve to increase the number of interconnections and diversity” (Franciosi, 2017, p. 126) of opportunities to learn associating lexical items with real-life, improving LTM.

In a similar vein, Aslanabadi and Rasouli (2013) argue that digital games have many advantages for EFL teachers and learners at the same time. Digital games:

> have always brought in relaxation and fun for students, and they learn and retain new items easily. Some games can be quite instructive and enlightening. Advocates of applying language games for teaching vocabulary offer that introducing new vocabularies through games needs to be practiced within a determined period of time with appropriate technology and facilities. By embedding new vocabulary in a presumptive game, words are more likely to be practiced, more likely to be related to their interests and needs and are more easily accessed in memory (p. 187).

Based on that, it is possible to say that digital games share some characteristics that are advantageous to foreign language learners, such as being engaging to students in the learning process.

Similarly, Calvo-Ferrer (2017) contended that computer games offer a complete immersion in any type of activity, which makes them optimal educational tools for any subjects; thus, they do not teach only skills and contents, but do so more efficiently and allowing long-lasting learning. Since digital games usually offer an array of subjects that can be learned by gameplaying with more frequency of repetition and learning in context, they may offer more learning opportunities. Moreover, Tumolo (2007) stated that "since learning involves commitment of information to memory" (p. 482), research in the field has shown the importance of repetition and association, as well as a good design of classes / activities constructed by teachers considering these aspects.

In sum, in order to comprehend the objectives and scope of this study, theoretical apparatus regarding vocabulary development was presented in this sub-section regarding vocabulary, memory processes, and digital games. In this section 2.2.1, it was discussed memory issues regarding learning languages. On one hand, working memory assumes "that a limited capacity system, which temporarily maintains and stores information, supports human thought processes by providing an interface between perception, LTM and action" (Baddeley, 2003, p. 829). On the other hand, foreground is the process of committing information to LTM, which is a virtually unlimited memory system used for storage (Tumolo, 1999).

Next section discusses foreign language vocabulary development, taking into account incidental and intentional learning, and frequency and number of encounter with words.

2.2.2 Foreign Language Vocabulary Development

Foreign language vocabulary development may be contingent upon several factors, such as language input, focused instruction, and involvement and frequency of encounters with lexical items (Laufer, 2017). This section is organized around those issues, which I believe to reflect as major determinants for learning vocabulary in foreign languages. The following sub-sections deal with incidental and intentional vocabulary acquisition, pinpointing the use of digital technology in the classroom setting.

Incidental and Intentional Learning

According to Sok (2014), a particularly productive area of foreign language vocabulary research has revolved around the incidental and intentional learning of new words (Sok, 2014, p. 21). Research regarding this area will be presented next.

Although researchers such as Hatch and Brown (1995) and Rieder (2003) agreed that discussions of vocabulary learning often involve discussions on intentional and incidental learning, Rieder (2003) stated that the distinction between them is not always clear, and many scholars in the area may still use both pairs of concepts interchangeably. In an attempt to differentiate them, Hatch and Brown (1995) defined intentional learning as "being designed, planned for, or intended by teacher or student", while incidental learning is defined "as the type of learning that is a byproduct of doing or learning something else" (Hatch & Brown, 1995, p. 368). Arguing in a similar vein, Hulstijn (2001) mentioned that

> incidental vocabulary learning refers to the learning of vocabulary as the byproduct of any activity not explicitly geared to vocabulary learning, with intentional vocabulary learning referring to any activity aiming at committing lexical information to memory (p. 14).

Notwithstanding, Laufer (2001; 2005; 2014; 2017) mentioned that influential views of vocabulary acquisition determine that most words are acquired through the exposure to language input, such as what

happens in gameplaying, rather than deliberately committing words to memory (Laufer, 2001). In this case, playing digital games with words in context could be effective for vocabulary acquisition, for instance. Besides, it remains important to state that the more repetition the better for learning, as stated more recently by Laufer (2005).

To increase vocabulary development in foreign language, it is important to have numerous exposures to lexical items. Previous studies presented by Laufer (2005) have shown vocabulary gains of 1 – 7 words are expected in vocabulary development texts up to 7000 words. According to the author, "vocabulary acquisition is usually a cumulative process. Each additional exposure to the same word may enrich and strengthen the learner's knowledge of it" (Laufer, 2005, p. 227). As previously stated, then, vocabulary can be acquired incidentally or intentionally through diverse kinds of exposure and throughout a whole life learning experience.

According to Ramos (2015), previous researchers in the area seem to agree that after a learner acquires his/her first thousand words during the initial stages of classroom instruction through intentional learning, vocabulary acquisition happens mainly by guessing the meaning of unknown words, that is, incidentally. Furthermore, several variables affect the success of incidental vocabulary learning, but mainly the appropriate context surrounding each word largely enhances chances of learning, as well as the frequency of words exposure seems to have a great impact, since repeated exposure in meaningful contexts is the key to form-meaning associations (Ramos, 2015). Likewise, results of previous research presented by Ramos (2015) contend that a repeated occurrence of words in highly informative contexts – such as what usually happens in multimodal words of digital games – is conducive for learners to infer the meaning of unknown words, which provide greater incidental vocabulary gains.

Similarly, Laufer and Rozovski-Roitblat (2011; 2014) pointed out that although there is no agreement on the precise number of encounters necessary for an optimal acquisition of vocabulary, input seems to be the key to language learning (Laufer & Rozovski-Roitblat, 2011, p. 392). Their study mentioned that the number of lexical items occurrences and the type of task that learners perform with lexical items (and the various combinations of these factors) allow incidental learning. Moreover, the authors mentioned that a set of strategies and techniques (such as the ones previously mentioned in this chapter regarding foreign language and vocabulary learning) can help students to remember new words. Laufer and Rozovski-Roitblat (2011) found, in

their investigation, that the majority of their participants, that is, 60%, "opted for a combination of exercises and repeated appearances of words, 30% chose exercises, and only 10% chose 'meeting words repeatedly'" (Laufer & Rozovski-Roitblat, 2011) for learning new lexical items.

Echoing the calls elucidated by Ramos (2015), a perfect combination amount of intentional and incidental learning, furthermore, can improve foreign vocabulary development. The next paragraphs deal with the integration of incidental and intentional vocabulary acquisition debate, added to technological digital aids, such as digital games.

The use of technological multimodal aids for language learning enhances comprehension and provides opportunities for learners to access the additional support needed to properly associate lexical items with their meaning (Ramos, 2015). Technological multimodal aids include audio, background music, good quality image and graphics, and even kinesthetic aspects: therefore, a whole new virtual world environment. In this sense, the inclusion of new technologies in the foreign language classroom – such as this research object - boosts incidental acquisition of vocabulary (Ramos, 2015), benefiting beginners, intermediate and advanced learners with activities that include multimodal technologies.

As stated by Richards (2015), examples such as digital games played for learning purposes show how technology and the internet can be used to foster the development of specific language skills. Most young people, according to the author, already play digital games, which offer possibilities both for entertainment as well as for foreign language learning incidentally. In this sense, these games offer opportunities for input, which is likely to support learners' vocabulary development in a foreign language (Richards, 2015).

Besides that, incidental learning opportunities in digital games reflect a number of positive features for teaching and learning practices, such as multimodal input, authentic input, autonomous learning, and imagined worlds (Ramos, 2015). More recently, Ma (2017) stated that with the dominance of digital technologies, digital games have become a new form of social and cultural artifact that assists and mediates foreign learning experiences (Ma, 2017). In digital games, for instance, contextualized vocabulary can trigger incidental learning via intentional exposition, which would lead to more vocabulary knowledge and development for players (Yilmaz, 2015).

In sum, it is possible to state that vocabulary can be learned intentionally and incidentally throughout a learner's life. The next sub-

sections present frequency and number of encounters with words, aspects that are involved in learning vocabulary

Frequency and Number of Encounters with Words

The preceding section and sub-sections have shown that vocabulary development is mainly determined by awareness and attention paid to words, memorization, and incidental and intentional learning. This sub-section discusses frequency and number of encounters with lexical items, and how this can benefit learning and vocabulary development.

As previously mentioned in this chapter, it was observed that there is a strong relationship between repetition and vocabulary learning: studies relate learning to 7, 8, 10 or 12 lexical items repetitions (Laufer, 2005; Nation, 2014). According to Laufer (2017), a necessary condition to learn lexica is a massive exposure to foreign language. Spaced repetitions in addition to contextualized learning, added to guessing from context the meaning of a word may be "the most useful of all the strategies" (Nation & Meara, 2002, p.44) since most contexts "provide some information that can take knowledges of the word forward" (Nation & Meara, 2002, p.44).

According to Ullman and Lovelett (2016), a way to provide memory enhancement and therefore, learning, is spaced repetition. The authors affirmed that repetition of the same or similar lexical items occurs in regular time gaps – "from seconds to minutes to even days, months, or years" (Ullman & Lovelett, 2016, p. 8) would result in better learning than repetition that occurs in close successions of time. In their own words, the authors mentioned that "if a given item is presented with temporal space (time) between presentations, retention of the item is better than with massed presentation, that is, without spacing between items" (Ullman & Lovelett, 2016, p. 8). In other words, longer gaps between repetition of lexical items tend to benefit learning rather than shorter gaps of time.

Altogether, this section presented research regarding vocabulary development in English as a foreign language. The discussions presented about incidental and intentional learning opportunities indicate that digital games seem to allow for higher opportunities for incidental learning due to some characteristics, such as contextual clues. Also, the more a player is exposed to a word, the higher the chance to retain and learn that word.

The next section focuses on CALL and technological digital resources, establishing a relation to digital games characteristics and benefits. Also, a presentation of the digital game *The Sims* is done as a way to contextualize the game investigated in this research.

2.3 Computer Assisted Language Learning

Digital technology is ubiquitous in our lives nowadays and this is undeniable. Many times, we depend on digital technology to wake up, to communicate with people and even to buy specific and technical material, for instance. However, this has not been common until the last decades. Digital technology as we know at the present time has evolved throughout the last century to meet with the scenario we live today. In the 1950s and the 1960s, according to Levy and Hubbard (2005), technology was expensive and not efficient. Virtual simulations worlds were used, but computers were very big, noisy, expensive and with no flexible architecture or no suitable programming languages. In 1975, computers started selling as a kit, and their use improved a lot. By that time, they were mostly used in universities or for academic purposes, mainly for research use, essentially because speed and storage had increased. In the 1980s and 1990s, there was a shift from those big and heavy computers to smaller desktop computers, more easily available for classroom activities and for teachers' daily and creative use (Beatty, 2010). Recently, technology devices are becoming smaller, lighter and faster day by day, used for a range of purposes. Throughout the years, digital resources, software, and gadgets, such as USB drivers, web processing, instant messages, shopping online, word processing, digital photos and files, video, music, digital games, touch systems, web 2.0, etc., are part of our daily lives increasingly.

As technological devices grow in number and its use becomes ample in our society for daily activities, educators claim that uniting digital technology with education may trigger learning processes (Squire, 2006; Yunditseva, 2015). Throughout the years of the digital technology era for learning purposes, the history of Computer Assisted Language Learning (henceforth CALL) has undergone several phases. From drill-and-practice software to word-processing programs, from audio and video resources to network and hypertext software, there has been a gradual integration of technology in foreign language classrooms over the last twenty years (Warschauer & Merkill, 2000). Many times and for many years, moreover, foreign language classes were synonyms

for video and audio resources classes. However, as stated by Steve Jobs in an interview[8], technology itself does not enhance language teaching:

> I used to think that technology could help education. […] But I've had to come to the inevitable conclusion that the problem is not one that technology can hope to solve. What's wrong with education cannot be fixed with technology. No amount of technology will make a dent.

Technology may be used for assisting, improving and motivating (foreign) language learning and teaching, but it is not, on its own, the solution for educational challenges. Learning and teaching praxis can change among educators – and that is why research about CALL is necessary.

In accordance to Davies, Otto and Rüschoff (2014), the evolution of digital technology has been happening in a linear and organized fashion after CALL was established in the 1980s as a field of study in the United Kingdom. Levy and Hubbard (2005) considered CALL a unique area of study because it approaches and attracts different viewpoints and debates surrounding the terminology in language teaching and learning with computers in its broadest meaning[9]. Examples of CALL research includes speech recognition, dictionary development, word processing, digital archives, digital games, e-mail, chat and conferencing, only to name a few. This doctoral study, furthermore, also characterizes as a CALL research since it investigates the use of a digital game for vocabulary development in a foreign language.

Previous studies (e.g. Beatty, 2010; Bagheri, Roohani & Ansari, 2012; Hirschel & Fritz, 2013; Stroud, 2014; Underwood, Luckin & Winters, 2014) showed that CALL activities are better, more engaging and more motivational than those done in traditional ways, such as textbooks or worksheets. As stated by Beatty (2010), CALL makes great

---

[8] Interview given in 1996 to Wired, in New York city, as can be seen in http://www.wired.com/2012/01/apple-education-jobs/ (website accessed in January 7th, 2016).

[9] CALL, according to my studies, takes for granted that computer is used as an umbrella term to designate technological and digital devices that can be used for teaching and learning languages, such as computers, tablets, smartphones and digital game platforms. According to the Oxford Dictionary, computer is an "electronic device for storing and processing data, typically in binary form, according to instructions given to it in a variable program", which encompasses all the resources previously mentioned.

opportunities for foreign language learning through designs that can access learners' styles, such as including opportunities to use the target language via relevant or interesting topics, not grammatically sequenced, and provided in sufficient and customized quantity, as is the case of digital games.

CALL and Multimodality

The world of foreign language teaching, not long ago, was based only on paper and pen, but now "literacy engages people in texts and discourses that traverse space and time on screens in which we can access and mix semiotic resources that include a multiplicity of languages" (Lotherington & Jenson, 2011, p. 226). With the outgrowth of digital technologies uses, multimodality is becoming ubiquitous, present in educational and school environments, media and journalism, politics, business and stores advertisement, websites, internet tools, among others. With the purpose of meaning-making, multimodality combines different semiotic modes, such as verbal, visual and aural (Lorenset, 2010; Heberle, 2010), and is common in our daily lives, communicating meanings through language, images, color, videos, songs, among others.

Multimodality is drawn from social semiotics and "understands communication and representation as more than language and attends systematically to the social interpretation of a range of forms of making meaning" (Jewitt, 2013, p. 250), providing concepts, methods and a framework envisioning visual, aural, embodied, and spatial aspects of interaction and environments. Thus, many of these multimodal interaction places can be found in digital and technological spaces. As reported by Jewitt (2013), digital technologies are

> of particular interest to multimodality because they make a wide range of modes available, often in new inter-semiotic relationships with one another, and unsettle and re-make genres, in ways that reshape practices and interaction. Digital technologies are thus a key site for multimodal investigation (p. 251).

According to Lotherington and Jenson (2011), digital spaces create multimodal interactive genres that engage users

> in dynamic, multidimensional communication, (potentially) involving social interaction, haptic activation, physical coordination, visual design,

> modal complexity (e.g., multiple language engagement, musical accompaniment, and animation), dynamic, collaborative text construction, and alphabetic literacy (p. 228).

In digital multimodal spaces, consequently, culture and language may converge, and allow users to immerge themselves in images, written dialogues, sounds, action, and animations. As a matter of example, some digital games encourage players to take risks, retry strategies and reflect on critical evaluation skills (Lotherington & Jenson, 2011). Furthermore, multimodality and CALL has enriched language learning and teaching practices in terms of content presentation and channels of communication with sophisticated audiovisual representation, allowing experimentation of sensory and realistic simulations. As claimed by Walsh (2010), the multimodal affordances of digital games for learning are that they

> enable teachers to craft contexts where students can research, explore and design a range of virtual environments. Researching, playing and designing digital games places students into new literacy domains that are positioned outside traditional reading, writing and multimodal design practices, because games are enacted through gameplay and actions in virtual and non-virtual worlds (p. 25).

In addition, digital games share multimodal characteristics, such as playfulness, interactivity and unpredictability (Costa, Fialho, Beviláqua & Leffa, 2012), including the use of videos, images, sounds and background music, as a matter of example. Consonant to that, Oliveira (2017) mentioned that by playing digital games, players constantly access other multimodal spaces that offer them other possibilities (apart from the traditional classrooms), such as videos, images, and interaction, contributing to a learning environment as a whole, contextualized. Thus, by playing in multimodal spaces, there is a wide range of emotions[10] that a player can live by, like enjoyment, pleasure and personal satisfaction (Oliveira, 2017, p. 55).

Additionally, it remains important to state that multimodality can be implemented in classroom practices to foster learning of several subjects. As proposed by Heberle (2010), in classes, students may interact with other students from around the world via multimodal technological spaces, which would enrich learning opportunities for foreign languages, geography and historical places, for instance. Further

[10] Emotions, flow theory and emotional stated triggered by digital games playing will be further explored in this chapter.

examples include interaction through Facebook, blogs, wikis, and other e-environments (Heberle, 2010) as learning prospects. In consonance, Guichon and Cohen (2016) state that multimodality depends, in sum, on the variety of modes made available to present a piece of information and on the interactivity between these different modes. According to the authors, language learners need to develop their multimodal competence by gaining a set of skills in interactive language learning space, so that they may benefit from the environments' multimodality and maximize their learning possibilities (Guichon & Cohen, 2016).

All in all, CALL unites different modes to make meaning (such as visual, verbal and aural modes), being used as inclusive means for different research areas, which can be useful for learning. It seems safe to state that images and written text combined can trigger language learning opportunities (Yanguas, 2009). Besides, CALL and multimodality may help readers to understand the meaning of difficult words in texts (Yanguas, 2009), being more beneficial compared to vocabulary comprehension in isolation. Furthermore, Yanguas (2009) mentioned that imagery in context, which is highly present in digital games, enhance and facilitate vocabulary learning, since using imagery to learn vocabulary is considered an effective learning strategy.

In the next section, digital games theoretical background will be discussed, emphasizing their characteristics and benefits for learning.

2.3.1 Digital Games: Characteristics and Benefits

Digital games are considered all games played on digital devices, from game consoles to desktop computers and modern mobile devices (Javerlä et. al, 2014), and they consist of virtual environments that generate feedback on platforms. Their most common genres are action, adventure, strategy, simulation, role-playing, sports, puzzle and fighting games (Connolly, Boyle, MacArthur, Hainey & Boyle, 2012; Prensky, 2001), among others, and they can be mixed / intertwined in a given game.

In the next sub-sections, digital games characteristics and benefits for learning are presented, pinpointing the differences between serious and entertainment games.

General Digital Games Characteristics

As a means to characterize digital games, Prensky[11] (2005) initially divided them into two broad categories: complex games and mini-games, as can be seen in table 2.1 below.

Table 2.1
Complex games and mini-games characteristics (based on and according to Prensky, 2005)

Complex Games	**Mini-Games**
Big complexity	Little complexity
Require abilities, new identities, goals, interaction, and choices	For relaxing and/or mind exercises; for motivation
Demand hours of attention and concentration	Demand specific task dealing with one subject (mainly puzzles)
Allow individual and multiple players	Individual players
Are sold in stores	Can be downloaded

As table 2.1 illustrates, on the one hand, mini-games are mainly designed for entertainment, represent about half of the games played in the total, have little complexity, and deals with one subject (mainly puzzle) or gameplay type in a small way. These games are good for relaxation, exercising the brain, accomplishing specific tasks and motivation. Examples of mini-games are *Solitaire*, *Poker*, *Jeopardy*, *Millionaire*, *Scrabble*, *Monopoly*, *Bejeweled*, *Candy Crush*, among others. These games can be played in leisure times, or for entertainment in daily activities, such as when riding the bus or waiting for a doctor appointment, since they can be played on smartphones or tablets for short and brief moments of relaxation.

Complex games, on the other hand, typically require hours of concentration and attention by the gamer; are sold in game stores; can be multiplayer, collaborative, challenging and competitive; have a sophisticated mixture of difficult challenges that intertwine and support each other. Examples of complex games include *Sim City*, *Civilization*

[11] Although the author is not a researcher of foreign language learning and digital games per se, Prensky (2001, 2005) contends sharp insights regarding the use of digital technological resources for educational and learning purposes in general. Due to that, his work is mentioned in this investigation.

III, *Harry Potter*, *Age of Empires*, *EverQuest*, and *World of Warcraft*. The digital game investigated in this doctoral research – *The Sims* - can be included as an example of a complex game. Moreover, complex games offer players to learn new and difficult skills and strategies to master them usually with outside research and collaboration with others, require or offer abilities, new virtual identities, goals, interaction, dilemmas, and choices. These games are usually played at home or game rooms because they require specific refined platforms, such as television and control, smartphone or computer and mouse or touchpad.

In preliminary discussions about game characteristics and how they can involve players interest, Prensky (2001) mentioned that last decades' youth has

> not just changed incrementally from those of the past, nor simply changed their slang, clothes, body adornments, or styles, as has happened between generations previously. A really big discontinuity has taken place. […] They have spent their entire lives surrounded by and using computers, videogames, digital music players, video cams, cell phones, and all the other toys and tools of the digital age. Today's average college grads have spent fewer than 5,000 hours of their lives reading, but over 10,000 hours playing video games (not to mention 20,000 hours watching TV). Computer games, e-mail, the Internet, cell phones and instant messaging are integral parts of their lives (p. 2).

According to Prensky (2001), young people - children and teenager students - are what the author coined as 'native speakers', defined as early users of digital language of computers, video games, and Internet. Digital natives grew up used to digital technologies and its features: they receive information really fast, they multi-task, they prefer graphics or images before reading texts and hypertexts, they function best when network, they thrive on instant gratification and frequent rewards, and finally, they prefer games to "serious" work. This scenario, as stated by the author, has changed the way people learn: people seem to process and operationalize "faster, less step-by-step, more in parallel, with more random access, among other things" (p. 4).

In addition, Kirschner and Bruyckere (2017) also recognized nowadays' youth as digital natives and called them the *homo zappïens*. As claimed by the authors, *homo zappïens* "are assumed to have sophisticated technical digital skills and learning preferences for which traditional education is unprepared and unfit" (p. 136). The challenge, then, becomes to change old methodologies integrating digital technologies into traditional contents in schools. Including digital games

in foreign language classrooms - such as the main objective of the present research - can be seen as one of these new teaching methodologies.

Serious games

Although the object of inquiry in this research is the entertainment and commercial off-the-shelf (COTS) game *The Sims*, a distinction between entertainment games and serious games seems necessary, especially because there is a wide range of studies investigating them.

Serious games[12] can be defined as games where the primary objective is learning via digital platforms rather than entertainment (Boyle et al, 2016; Chen & Michael, 2005; Kronenberg, 2012; Sorensen & Meyer, 2007), where entertainment is a secondary aim.

According to Sorensen and Meyer (2007), there are two approaches of serious games design: one is a theoretical approach that encompasses "theories on the justification of the teaching, goals, and content as well as criteria for the selection of educational content" (p. 559), while the other approach encompasses "planning and organisation of teaching and learning" (p. 559). While the former is more theoretical and focuses on previous research and theories, the latter is more practical, taking the theories into teaching and learning practices.

According to Kronenberg (2012), due to these educational design approaches, serious games have to compete with COTS entertainment games, especially because the latter are resource-intensive - due to their good quality and functionality. Since serious games are focused on learning, they do not seem to receive as much attention, care and sponsorship incentives as COTS games do. This way, serious games tend to display poor quality graphics, which, in turn, do not attract or engage gamers to play them. However, serious games still display high quality in terms of effective teaching contents, skills, and problem-solving needed to learn a subject or specific content (Kronenberg, 2012).

In addition, serious games provide opportunities for learning through practice, organization and theoretical reflection practice

[12] Besides serious games, they can be found under the terms of educational games, learning games, training games, edutainment games, among others (Sorensen & Meyer, 2007, p. 559).

(Sorensen & Meyer, 2007) of traditional contents that, in other times, would be taught in traditional non-digital manners. Furthermore, according to Sorensen and Meyer (2007), game designers established a set of concepts which are central to serious games development: challenges, reification or materialization of experiments, community's communication, achievements, pleasure, exploration, and self-interpretation identities. These concepts, according to the authors, foster and develop learning processes, which can be seen as beneficial characteristics allowed by digital games playing – which is the primarily main objective of a serious game whichever the learning focus it intends to achieve (either Math, Physics, Geography or English, for instance).

Despite the poor quality graphics, in the majority of them, serious games can and are constantly applied in classroom practices of a number of subjects. Examples include Chemistry, Math, Physics, Portuguese, History, Geography, Personal Security, among others. In the case of English as a foreign language, there are not many serious games – and the ones that exist are mainly online games that cannot be downloaded in personal gadgets. Although most of them are free, they can only be played online in platforms, which can be a setback for those players who intend to play games in their leisure time offline.

Nevertheless, if players feel engaged to learn English as a foreign language through digital games, there is always the possibility of playing entertainment games by changing its main language to English, instead of Portuguese, for instance. Most games allow options like that so that players of several languages can play them.

Games for entertainment

Games for entertainment or the so-called commercial off-the-shelf (COTS) games have primarily the objective of entertainment. They are usually designed by big companies that intend to sell their games either in stores or on online platforms. Unlike serious games, COTS games intend primarily to entertain rather than educate, although many COTS games can be - and are - applied for learning purposes (which is the case of this doctoral research, that implements *The Sims* for educational purposes). As proposed by Kronenberg (2012), COTS games applied for learning purposes must meet the following criteria: a) they must allow players motivation and flow states; b) they must have clearly defined and spaced goals according to their levels; c) they should allow proper game skills that develop throughout gameplay; d) they have to have content, story and narrative; e) they should be

multimodally designed; f) they must enable players agency; and finally g) they should allow financial, technical, and administrative considerations in the game context.

Prensky (2001) claimed that learning facilitated by COTS digital games have the specificity to be both fun, participative, triggering effective learning in interactive entertainments by manipulating virtual characters and making decisions. Based on that, the player may feel more encouraged to invest in the game and this investment appears to be the key to motivation and to proceed with the desire to improve constantly in the game. Entertainment digital games, thus, are designed to get players to be actively game playing for long hours trying to achieve results, complete missions or improve themselves. Consonant to Prensky (2001), Costa et al (2012) affirmed that (an entertainment) digital game playing session can, positively and permanently, impact one's interest, due to body and mind involvement between the player and the game. Additionally, Gee (2005) stated that digital games played for entertainment can provide fun and relaxation, and ultimately motivation, as well as encourage goal setting and organization of actions to be taken to address problems, allowing the adaptation of life experiences for personal and social contexts of the player, and offering situated vocabulary learning.

Likewise, as mentioned by Sykes (2013), the world of entertainment digital games has much to offer to those interested in learning and teaching a foreign language, such as English. There are five principles present in COTS digital games that are particularly relevant for foreign language learning: 1) goals and objectives: due to a dynamic and negotiated process of task completion; 2) interaction: with, around, and about the game; 3) outcomes and feedback: tutorial and score resources at the exactly right level, time and amount; 4) context: especially created and authenticated both by game narrative and context of play, which create powerful opportunities for learning; and 5) motivation: often cited as the key reason for integrating digital games in the language classroom, mainly because they bring good design elements such as challenges, interaction, competition, and narrative – which constitute key elements to making a game engaging (Sykes, 2013). In addition, digital games are faster and responsive, with much better graphic representation than board games, allowing huge options and scenarios, and can be updated instantly, being customized by each player interests, which is a highly motivational aspect of learning. Sykes (2013) completed that, although entertainment digital games can stray from specific vocabulary of certain subjects, they offer authenticity, ease

of use and access discourse communities, elements that can motivate players to keep playing.

Gee (2005) claimed that digital games (in general) and their use are mediated by social structures, where players can talk, share strategies, download FAQs[13] and participate in online forums, and most gamers describe their play as a social experience, a way to connect and interact with other players (usually either native or non-native English speakers). The author also highlights that digital games provide learners with the experience of being competent and independent problem solvers, enabling them to develop simulated identities and learn, allowing them to develop coherent ways of thinking that they can bring to new situations (Gee, 2005; 2009).

In addition, Squire (2006) argued that the focus of digital games is on experience that enables players to develop situated understandings, to learn through performance and failure, and to create new virtual identities as problem solvers. Players learn, therefore, by doing and by being in a virtual world. In consonance, Carr (2012) stated that learning by experience might engage learners via connections between their individual background experiences and meaningful learning experiences. As claimed by the author, learners "might become bored with the mundane tasks performed in the traditional education setting" (Carr, 2012, p. 277), and entertainment digital games used for learning purposes can motivate players and students.

Next, it will be discussed research that investigated digital games benefits for learning a foreign language.

Digital Games Benefits

According to several studies, the use of digital games brings a range of benefits for learning: digital games provide players with lowered anxiety, enjoyment and autonomy opportunities, among others. As Reinders and Wattana (2014) contended, key findings show that digital gameplaying had lowered anxiety for all players, even the ones who did not enjoy as much as the others; and encouraged risk-taking (Reinders & Wattana, 2014). This can be reasoned due to the environment's encouraging and supportive features, where players make mistakes and learn from them. Taking risks and allowing themselves to make mistakes have been identified as one of the many characteristics of successful language learners (Reinders & Wattana, 2014). As Chik

[13] Frequently Asked Questions (FAQs).

(2014) mentioned, learner autonomy is not limited to the classroom, and digital games are seen as learning environments that support learners sense of autonomy even outside the school. Autonomy, thus, can be identified as one of the key beneficial elements to facilitate learning through gaming, and students can "be aware that they have the ability to turn their preferred leisure activities into learning practices" (Chik, 2014, p. 97).

In addition, Wang, Khoo, Liu, and Divaharan (2008) claimed that there are three main essential reasons why gamers play: 1) relationship with other people (through interaction – prior, during and after gameplay - that derives in pleasure); 2) immersion (in virtual and games fantasy worlds); and 3) achievements (through goals and challenges overcame). Besides, the authors mentioned that passion is an important element of motivation, although not typically mentioned, and can be defined as a strong inclination toward an activity that one finds important, invests time in, and likes. Motivation and emotional states experienced in digital gameplaying will be further explored in the next section.

This section discussed digital games characteristics and benefits of learning a foreign language. Characteristics of digital games can be divided into serious or entertainment games, and mini or complex games. Benefits of playing digital games include autonomy and agency, motivation, interaction and immersion in a new virtual world. Next section will present theoretical contribution related to digital games and their influence on learners' emotions, motivation and flow state.

2.3.2 Digital Games: Emotions, Motivation and Flow State

As mentioned in the previous section, digital games portray characteristics and benefits that allow learning opportunities, willingness to keep playing and motivation, to name a few. These aforementioned features plus digital game environments that allow players to explore in new virtual spaces usually trigger emotions, motivation and flow state in players. Each concept will be further explored in this section.

Emotions

Digital game players, by controlling or commanding their actions (typically through a keyboard, buttons, touch or game controller), can perceive themselves as agents in new virtual worlds. Playing digital

games remains a different activity from looking at a still or moving image: "video games and other interactive media forms mobilize not just sight and hearing, but the 'hidden' kinaesthetic, proprioceptive and vestibular senses as well" (Shinkle, 2008, p. 908), linking perceptions, cognition and emotions with game actions. Digital games and the whole set of (either positive or negative) emotions, expectations, motivation and feelings they enable can potentially extend the emotional range that players experience in their own emotional development (Shinkle, 2008). This way, digital gameplaying can be understood as a safe environment where players feel free to react spontaneously to their true emotions[14].

According to Mahfud and Lumombo (2017), popular gameplay features such as tapping, shifting or drawing, added to the features of rules, completing tasks, or getting rid of the enemy, for example, can turn gameplaying into an emotional experience. Besides that, expressions of emotions are present during gameplay, and ought to be used to improve players experience and ability, since they can be from different arrays: anger, disgust, fear, sadness, joy, contempt, surprise (Mahfud & Lumombo, 2017), among many others that may emerge. These emotions, either positive or negative, according to the authors, are truly personal and individual and can differ from player to player. In addition, they can be recognized based on a combination of facial movements and expressions, sounds, gestures, and body movements, such as head, shoulders and arms movements (Mahfud & Lumombo, 2017).

As stated by Mahfud and Lumombo (2017), digital games can, for sure, "have an effect on game player emotions" (p. 4). According to the authors, positive emotions arise if the game allows

> challenging goals, easy play procedures, player actions for existing rules, payment facilities. Negative emotions happen if games provide conflicting resource management. While the pattern of positive results or

[14] Plass and Kaplan (2016) further defined visual design elements used in multimedia environments that affect and foster leaners' emotions as 'emotional design'. Emotional design is used to describe "the use of a range of design features with the goal to impact learners' emotions to enhance learning. Some of these design features relate to the way information is presented, and others to the way the interactions in the environment are structured" (Plass & Kaplan, 2016, p. 138). Emotional design, therefore, is thought by game designers to impact the gameplaying experience lived by players. Even though I acknowledge emotional design, it will not be further discussed since it is not considered as one of the focus of this investigation.

> negative enemies gives effect of increasing the level of emotion that exists (p. 4).

Either good or bad, these emotions can motivate or arouse players to keep playing.

Furthermore, players are most likely to experience good emotions through digital playing (Cornillie, Thorne & Desmet, 2012), such as joy and excitement, rather than negative emotions, such as frustration and anger. In digital games "outcomes constitute the goal-directed behavior that learners engage in and may include finding the solution to a mystery or seeing one's name in a list with high scores" (Cornillie et al, 2012, p. 250). This way, players find themselves solving problems and being successful. Even if players are not good students at school or fail in sports activities, for instance, they have in digital games the environment for their risk-taking, agency and autonomy, and success experience, which, in turn, may become a motivation for them. Digital games, therefore, are considered environments where players feel free and relaxed to express their emotions, which can create motivation to keep playing, since a connection is established between the game and the gamer. More information regarding motivation can be read next.

Motivation

Besides emotions, digital games can trigger motivation to keep playing. Good quality graphics, engaging stories, appropriate and crescent levels of challenge, curiosity and ownership are aspects brought as motivational, affecting motivation in a positive way (Medina, 2005). Personal as it can be, motivation might change among players, although research has tried to establish some commonalities among them, as will be further presented.

Medina (2005) explained that the usage of digital games can produce motivation by encouraging persistent behaviors in players so that they can engage players to keep playing more time triggering learning. Moreover, digital games, from a motivational point of view, can promote a sense of relatedness over students learning by catching their attention to learn by using a game fantasy context. Thus, players are more interested in the content they are learning in the game because they are interested in what happens in the game environment (Medina, 2005).

Digital games might produce more confidence in players and their sense of competence because they are in context and they represent

an activity they can master (Medina, 2005). In their study, Ebrahimzadeh and Alavi (2017) have found a significant change in players' motivation over time through digital game playing and suggested that using digital games in the classroom positively affects student motivation states.

According to Ryan and Deci (2000), there are two degrees of motivation: intrinsic and extrinsic. Intrinsic motivation, as stated by the authors, is seen as the inherent tendency to seek out novelty, challenges, opportunities to explore, to learn, to exercise and extend capacities. Therefore, imposed goals, deadlines, threats, and / or pressured evaluations diminish intrinsic motivation whereas choice, acknowledgement of feelings and opportunities for self-direction enhance intrinsic motivation because it allows people to feel greater and autonomous (Ryan & Deci, 2000). On the other hand, extrinsic motivation has regulatory styles, such as external regulation, introjected regulation, identified regulation, and integrated regulation (from the least autonomous to the more autonomous aspects): the more motivated, therefore, the more autonomous the learner becomes (Ryan & Deci, 2000). In this sense, motivation would lead to more learning autonomy, which, in turn, allows for more learning opportunities.

Flow State

Besides being motivational, digital games also present adaptivity[15] to players' skills and abilities, and leveling-up in these games is emotionally pleasurable. This pleasurable state, which is known as the "flow state" (Csikszentmihalyi, 1990), is available as long as the game remains hard enough, so people will continue playing it. In Csikszentmihalyi's (1990) research, the phenomenology of the state of flow has eight major components, which are: 1) a challenging activity that requires skills; 2) the merging of action and awareness; 3) clear goals; 4) direct feedback; 5) concentration on the task at hand; 6) the sense of control; 7) the loss of self-consciousness; and 8) the transformation of time. All these components are present in digital games - although not all together and not experienced at all times. Moreover, these components lead to "flow state", which occurs - briefly or not - when physical, mental or both activities demand engagement at

[15] According to Gee (2005; 2009), good games allow players to create individual and personalized virtual environments, being agents of their own world, taking risks and making decisions according to their own interests.

a level of immersion that can cause a loss of track of time and the outside world, such as in digital games.

More recently, as defined by Admiraal, Huizenga, Akkerman and Dam (2011), flow state was defined as a state of deep absorption in an activity that is intrinsically enjoyable, for example, playing digital games in leisure time. According to their study, people who shared this state perceived a pleasurable and successful performance, worth doing for its own sake, and the experience itself becomes its own reward. Flow experiences trigger intense concentration and absorption in the activity being done (Admiraal et al., 2011), creating, in turn, pleasurable and enjoyable experiences. Furthermore, digital games are seen as excellent tools for facilitating and supporting situated learning of students while in the flow state. In digital game worlds,

> students can experience the concrete realities that words and symbols describe. Through such experiences, across multiple contexts, students can understand complex concepts without losing the connection between abstract ideas and the authentic problems that can be used to solve (p. 1186).

Playing digital games, in conclusion, can create flow state in players due to experiences of deep absorption and enjoyment. This flow state sheds light on learning opportunities, as in the case of *The Sims*, where participants have fruitful opportunities to immerse in a new virtual world where lexical items are presented in context in the target language.

This section presented and discussed CALL and its relation to multimodality. Taking multimodal environment into consideration, digital games characteristics and benefits were explored. This, in turn, led to emotional state discussion, as well as motivation and flow state areas. In sum, research stated that the multimodality aids present in digital games can benefit learning opportunities interconnecting with players' personal interests such as motivation, and emotional and flow states. Next section will focus on research that displays how digital games can enhance learning as an educational resource for language development and, specifically, its vocabulary.

2.4 Studies on Vocabulary Development Through Digital Gaming

Many studies have shown evidence that digital games can assist vocabulary learning, and this section approaches some research on their

contribution. Although some of the studies here discussed may differ from the objectives of the present research, they are part of my reflections, interests and inspiration as a researcher, and they are presented next.

Recent research regarding digital gameplaying have led to different but quite positive conclusions: foreign language learning opportunities and the use of some strategies, such as guessing from context, repetition, interaction, and feedback (e.g. Bytheway, 2015; Turgut & Irgin, 2009); exposition to authentic, in-context and highly frequent lexical items in English, allowing players to deal with a high average of common English words used to complement real-life knowledge (e.g. Guerrero, 2011; Silva, Corrêa & Silva, 2012); higher ability to acquire words, encouraging players to engage, enhancing their motivation (e.g. Shahriarpour & Kafi, 2014); a big effect on new vocabulary acquisition with the aids of social context, situated understanding, natural repetition, exposure, and interactivity (e.g. Vahdta & Behbahani, 2013).

In the same vein, Huyen and Nga's (2003) study about the effectiveness of learning foreign vocabulary through games, found that all students-participants agreed that digital games helped them in vocabulary learning in context, and eighteen out of twenty said that games were one of the most effective ways to learn new vocabulary items. Besides that, it was mentioned that these students-participants were willing to learn vocabulary by new means other than traditional ways, mainly with the use of digital games.

Similarly, Guerrero's (2011) study aimed at assessing vocabulary learning in English as a foreign learning by analyzing *Grand Theft Auto: San Andreas* (GTA SA). In two-hour game sessions weekly during one semester, data was collected through field notes, survey and semi-structured recorded interviews. Conclusions stated that, although quite violent and misogynist, GTA SA made students more engaged and attentive, free to explore the virtual world taking risks. Outcomes from the research also showed that exposure to the target and authentic language led to vocabulary gains in English as a foreign language, where extracted information from the game (from both social and language learning experiences) was used to complement real life knowledge.

In the same way, Yilmaz (2015) investigated learning vocabulary in a foreign language through a computer software game-style model. According to the author, digital games provide interactivity and communicative support for learning and teaching language skills. The

results showed that students who used the software learned and retained more words than those who did not, and its rich multimodal environments resulted in better learning and word retention. Moreover, the longer the participants used the game-software, the higher the number of words they could learn and remember, resulting in vast and rich vocabulary learning.

In a similar way, Godwin-Jones (2014) had as objectives to search practical and pedagogical obstacles to incorporate digital games in the classroom for vocabulary learning. The author focused on what kinds of games to choose, how to find learning opportunities inside games and how to associate digital gaming with the curriculum. The author considered that digital game playing can be beneficial for learning, and its approach to learning and teaching a foreign language may be a determinant in classroom learning success rates. The game analyzed was *World of Warcraft* (WoW), which is a multiplayer online game role-playing games (MMORPG[16]). The author concluded that adapting an entertainment game such as *WoW* for education purposes has multiple advantages for the players, including here gameplay incorporation into school curriculum and the high frequency of repetition of words, which served as reinforcement of vocabulary learning. As previously mentioned in this chapter, the higher the number of exposure and repetition, the higher are the chances of learning and memorizing lexical items (Nation, 2014). Repetition, moreover, is seen as a benefit that digital games allow players to experience, shedding light on learning opportunities.

Another research that investigated the online digital game *WoW* reveals equivalent gains. In her research, Bytheway (2015) investigated a taxonomy of vocabulary learning strategies used in MMORPG. The outcomes presented some vocabulary learning strategies reported as used by participants, such as: reading in-game information; looking up words in dictionaries; noticing frequency or repetition of words; requesting and giving explanations; action to words or associating image; recognizing knowledge gap; feedback; noticing in other contexts; guessing from context; observing players; selecting words for attention; and adding to existing knowledge. The author concluded that learners used a combination of these strategies to learn vocabulary in different ways according to their individual preferences and learning styles.

[16] MMORPG are real-time digital strategy games in virtual worlds where players can complete collaborative tasks, interact, and explore virtual environments.

Assuming vocabulary as the main building block of language learning where words arrange together, Vahdat and Behbahani (2013) examined the effects of games on vocabulary learning on Iranian learners of English as a foreign language. The authors stated that foreign language learners experience their greatest inadequacy in vocabulary use and they lack the proper words when the need to use them appears. They also stated video games allow players to examine and move objects by clicking and holding and, with this, new vocabulary items are learned, providing ample production and practice situations with newly learned vocabulary. Data analysis outcomes revealed video games have big effect on new vocabulary acquisition. Additionally, social context, situated understanding, natural repetition, exposure and interactivity are benefits from video games playing.

Related research showed similar results regarding vocabulary learning for Iranian English learners. Shahriarpour and Kafi (2014) researched the effects of playing digital games toward learning vocabulary of English as a foreign language for Iranian intermediate learners. The results showed that using digital games to learn vocabulary enhances participants' ability to acquire words, as well as encourages learners' interaction and enhances their motivation to keep playing.

In an investigation that considered several digital games, Yudintseva (2015) claimed that they provide opportunities to learn new vocabulary through contextual clues by associating text with actions in the game. This aspect can be noticed in games such as *The Sims*, *EverQuest II*, *Bone,* and *Back to the Future*, among others. Besides, the author reviewed some vocabulary learning strategies that can be taken from playing digital games, namely: determination in learning tasks (including here the use of dictionaries); social interaction - which triggered a more enjoyable and helpful game playing experience; the possibilities to connect words with images, which facilitated both vocabulary acquisition and memorization; written repetitions in *The Sims*, that facilitated vocabulary learning cognition processes; and media interactivity, including here musical background options. The author concluded that multimodality in digital games enhances learning vocabulary opportunities: imagery and musical choices, repetitions, contextual clues and interaction were stated as positive learning strategies in the games investigated.

As for incidental vocabulary learning through digital games, Silva's (2014) research brought different benefits. The author conducted research that viewed videogames as environments full of opportunities for learning vocabulary in English. As reported by the author, in the

game *EverQuest II*, new vocabulary items are mainly available to the players; in *Breath of Fire IV* there is situated language and time-bound challenges; and in *Ragnarok Online*, vocabulary led to action and interaction in two functions: heuristic (related to what is happening) and representational (related to the ability to inform and talk about facts) correlated to the language used in the game. Results showed that the digital games reported in this study gave opportunity mainly for personal (opinions and preferences) and interactional (development of social bonds) functions of language.

In a study about lexical items on digital games, Silva et al (2012) examined the digital games *GTA: SA, Neverwinter Nights I* and *Need for Speed ProStreet*. The study investigated word items learning regarding their types (words used differently) and tokens (repeated words). Results showed that by digital game playing, learners deal with a great average of high-frequency words in an informal virtual setting, thus leading to great incidental (foreign language) learning opportunities.

In general, the studies here presented showed that digital games enhance vocabulary learning by providing safe environments for taking risks, promoting interaction and learners' agency, and communication skills in the target language. Learning vocabulary through digital environments allows the use of contextualized understanding of new words, and vocabulary acquisition happens through the linking of the new words to something concrete to the learner (Godwin-Jones, 2010). In addition, the use of digital games asserts potentialities by presenting information in different modes and contexts, and influence positively vocabulary use (Ebrahimi & Zamanian, 2013).

Next section will present previous research and appraisals on the digital game *The Sims* and its contributions to learning.

2.4.1 *The Sims* and its Contributions to Vocabulary Development

The game chosen for this investigation - *The Sims*[17] - is a simulation entertainment digital game that deals with routine vocabulary. Because the game simulates real life interactions, actions, needs and wishes, it has been one of the most researched games for learning environments, at least in the Brazilian scenario (Menezes, 2013). More information about how the game functions, its objectives and tasks will be discussed in Chapter 3 – Method.

[17] The version of the game used in this research is *The Sims FreePlay*, which could be downloaded free of charge during the data collection period.

Although it is not considered to be a serious game, many pieces of research have investigated *The Sims* for educational purposes, focusing on different areas. Their topics of interest change significantly and investigate gender (e.g. Gee & Hayes, 2012a), context and social norms (e.g. Martey & Stromer-Galley, 2007), user innovation and design (e.g. Prügl & Schreier, 2006), and learner engagement (e.g. Young, Schrader & Zheng, 2006), among others, focusing on learning and applied in educational settings.

Menezes and Schlemmer (2014) noticed that players could learn from the game and were motivated to play *The Sims* because of their involvement in the daily real-life context that the game portrays. Therefore, this is an entertainment digital game considerably used for educational purposes. In a similar investigation, Menezes (2013) identified that this game promoted the possibility of vocabulary use because players deal with personality and physical characteristics, workplaces, and housing, among many others, in context and in meaningful settings to them. Yudintseva (2015) stated that while playing this game, gamers interacted with peers to help each other, and not only playing was enjoyable and helpful, but the verbal and written repetitions in *The Sims* facilitated vocabulary learning. Therefore, used in school environments or in extra-class activities for learning purposes, *The Sims* is a game that can represent an interesting manner to promote vocabulary learning in a relaxed and fun manner in a foreign language.

According to Prensky (2001), fun and relaxation enable a learner to take things in more easily, and motivation enables students to put effort without resentment. Hence, *The Sims* may be considered beneficial to language learning: it provides a mental state of intense concentration where difficult tasks become easy and enormously pleasurable, fast and responsive, with good graphic representation, allowing many options and scenarios, and can be updated instantly, being customized by each player.

Miller and Hegelheimer (2006) stated that a simulation digital game, such as *The Sims,* include realistic settings in which the player is presented with a problem, executes a series of inquiries, decisions, and actions, and receives information about ways the situation changes based on the decisions and actions, with the benefit of promoting "higher level thinking, cognitive processing, and active involvement" (p. 312). Besides that, *The Sims* provided learner-centered and learner-controlled environment, closely tying knowledge with active involvement - since the authentic language in the simulation is placed into a context in which it would actually be used. For this reason, *The*

Sims allowed students to have experiences and use language that may be otherwise difficult to do within the boundaries of the classroom (Miller & Hegelheimer, 2006). The authors concluded that using *The Sims* in the classroom had positive influence on vocabulary learning by creating association of written words with visual support. All the scenes, pictures, and tasks the participants had to complete can be considered as vocabulary learning materials.

Purushotma (2005) mentioned *The Sims* as an example of a digital game designed for entertainment but with high educational value for learning a foreign language. The huge difference is that this game may trigger language learning because it can be played in several languages, including English. As the author stated, educators and teachers can configure the game to be played in a foreign language so that players have opportunities to learn in integration with the images (Purushotma, 2005).

The fact that the game provides space for players to take some incorrect actions or have some incorrect assumptions without major damages that can be recoverable is motivational for Purushotma (2005). For example, one of the variables players must keep track of is their *Sim*'s (character) energy level, and, if a beginner learner were to guess the meaning of this word incorrectly, her/his character would take some steps "to notify the player until the energy variable was addressed: First, the character would act sleepy and think about beds" (Purushotma, 2005, p. 83). Second, if the gamer seems to fail to recognize the action to be done, the game will take control and show what was needed to be done by letting the character literally fall asleep. The character would fall asleep in the middle of the park, the workplace or the street, just to show to the player that the character's limit has been reached.

These actions can be considered beneficial for incidental learning, since the gamer will take interest in what actions need to be done to complete missions, not in the learning itself. An entertainment digital game such as *The Sims* can be modified in such a way that minimizes "effort and stress on part of the learner, provides repeated interactive exposures to words, and automatically generates rich contexts for associations" (Purushotma, 2005, p. 86).

Gee and Hayes (2012b) mentioned that learning potentially stems from the game playing and the social practices going around and in the game, as well as the interactions that happen between the two. According to them, *The Sims* is an example of a game that operates allowing players to modify the game design, making small or big changes, such as designing games to their interests and actions. Almost

every part of the game can be modified according to players individual choices or preferences. Moreover, the options available create affinity among players and the game, since it allows emotional and personal encounters around their choices. Players can create characters similar to those people they admire the most, such as their family members or friends, or even famous and insightful people for them, for instance.

Additionally, Gee and Hayes (2012b) stated that 'affinity spaces' share the concepts of community of practice, characterizing forms of social organizations. Affinity spaces, therefore, are communities created around shared interests, such as the digital game *The Sims*. Affinity spaces, in addition, do not have to be virtual (Gee & Hayes, 2012b), and are possible to exist in school environments and classrooms - such as in this research data collection setting, and are organized to structure social interactions of various sorts with varying degrees of participation. The authors mention that generally people tend to learn well and deeply more easily when they are learned as meaningful and important tools (Gee & Hayes, 2012b). Therefore, affinity spaces build, transmit, sustain, and transform knowledge.

Diving deeper in the discussion, these affinity spaces or environments with learning opportunities are named 'Passionate Affinity Spaces' and can be defined as interest-driven sites for groups of people organized online around interest in a specific game, such as *The Sims* (Gee, 2015).

Yudintseva (2015) mentioned the game *The Sims* in her investigation when seeking to understand the usage of commercial of-the-shelf games for learning, quite similar to this research object. *The Sims*, a game that was developed for mass production with the purpose of entertainment, in general, provides opportunities to learn new lexical items through contextual clues by associating the written and visual texts. Additionally, according to the author, *The Sims* provides a range of strategies that are effective for language learning, such as repetition and contextual clues so that vocabulary acquisition can happen in authentic contexts (Yudintseva, 2015).

All in all, this section of the chapter presented the game *The Sims* and its characteristics, which is the game played by participants during data collection. Research here presented showed that vocabulary learning can happen naturally, that is, incidentally, and may be more likely to be remembered by learners. Therefore, vocabulary exposure and frequency of exposure in *The Sims* configured as important components to vocabulary acquisition in English as a foreign language.

2.5 Chapter Summary

This chapter firstly discussed theoretical background around the concepts of learning and teaching a foreign language. Although there were several competing methods, theories and approaches regarding foreign language learning, recent research indicate that effective language instruction techniques are those that allow teachers to promote learning opportunities where students' needs are taken in consideration.

Secondly, it discussed vocabulary development in foreign language teaching and learning, which, for many decades, were considered neglected, and nowadays is considered essential for learning languages, being taught through many techniques, many of them allowing the use of digital resources, such as digital games.

Thirdly, this chapter discussed the role of memory in language learning. Concepts of WM and LTM were defined, as well as Information Processing Model, and the degrees of attention, awareness and noticing. Taking this into consideration, frequency and repetition were established as beneficial for vocabulary development and learners' success, as well as attention paid to lexical items. Digital games research concerning vocabulary and commitment to memory were also presented.

Fourthly, foreign language vocabulary development was discussed in terms of intentional and incidental vocabulary learning, and frequency and number of encounters with words.

Fifthly, CALL was presented pinpointing some historical facts and previous research, making relation to multimodality aspects as well, a relationship that works really well for learning purposes.

Then, this chapter presented digital games characteristics and benefits. Sections were written to present and discuss how digital games are characterized in terms of serious games or games for entertainment, and how they can benefit as a digital resource for vocabulary development. Emotions, motivation and flow state and how they emerge from digital gaming were presented. Also in this chapter, previous studies and research on the area of vocabulary acquisition through digital game playing contributions were provided.

Finally, *The Sims* was presented and characterized in terms of its contributions to vocabulary development. Based on previous research, it was recognized that this digital game enlightens learning processes for vocabulary development in English as a foreign language, which matches the specificities of this investigation.

Next chapter, Chapter 3 – Method, describes the characteristics of this investigation, focusing on its participants, research context, and

instruments and procedures for data collection, analysis and discussion. These aspects are worth noting since they have been shaped in accordance with previous research and theoretical background here aforementioned.

CHAPTER 3 – METHOD

This chapter presents the methodological design of this doctoral research[18] and takes up its objectives and research questions presented in the introductory chapter. Additionally, it describes the participants, setting of the investigation, research resources and instruments, along with the procedures for data collection and data analyses. Theoretical appointments are also provided to ground the methodological choices made for this research.

3.1 Research Design and Objectives

The present section addresses the research design and its objectives. The research design consists of a qualitative quasi-experimental investigation. Data collection involved 8 gaming sessions, including procedures such as pre-test, post-test and post-delayed test, as well as narrative inquiries and interviews that explored participants perceptions regarding their vocabulary acquisition through digital gameplaying *The Sims*.

According to Dörnyei (2007), for the purposes of achieving fuller research understandings in the area of language learning, qualitative research is highly recommended. Qualitative research highlights its emergent nature, which configures to be a study that "is kept open and fluid so that it can respond in a flexible way to new details or openings that may emerge during the process of investigation" (Dörnyei, 2007, p. 37), which means that "the research focus is narrowed down only gradually and the analytic categories concepts are defined during, rather than prior to, the process of the research" (Dörnyei, 2007, p. 37). In addition, qualitative research works with a wide range of data procedures and instruments, such as interviews, texts, images, among others, that are later on transformed in textual forms so that the analysis can be done with words. Another feature of qualitative research is that is done in natural settings in order "to describe social phenomena as they occur naturally" (Dörnyei, 2007, p. 38), without attempts to manipulate any situations under investigation. This way, research is primarily concerned with "opinions, experiences and feelings

[18] This research design, method and all required documents have been approved by the Ethics Committee from UFSC (on Plataforma Brasil) under the registration number 1.996.366, on April 3rd, 2017.

of individuals and thus the explicit goal of research is to explore the participants' views" (Dörnyei, 2007, p. 34), fundamentally based on participants internal meanings, and their actions and experiences interpretations. Because of that, qualitative research is usually based on smaller sample sizes if compared to quantitative research: "well-conducted qualitative research is very labour intensive" (Dörnyei, 2007, p. 38). In this sense, qualitative data collected for this doctoral investigation took into account participants' tests scores, a narrative inquiry and two oral interviews, that will be further explained.

Furthermore, this research deals also – besides qualitative data - with quantitative data collection and analysis, integrating quantitative and qualitative characteristics for achieving fuller understandings. Quantitative research methods can be concise, allowing inferential statistics and analysis, and providing summary information, while qualitative research method can be detailed and informative, allowing insight into cases and providing in-depth information. Although this research is designed as qualitative, it also considered participants quantitative tests' scores into consideration. Therefore, it is reasoned to have also quantitative characteristics because data have been collected and analyzed using numerical forms, such as participants' numerical scores from the tests administered in the first phase.

Within this perspective, the present investigation can be reasoned qualitative in the sense that it considers individual development processes of learning English as a foreign language through digital gaming *The Sims* making use of a pre-, a post- and a delayed post-test, a narrative inquiry and two oral interviews. The small number of participants in this study allows for a more detailed individual analysis of language learning development and may provide answers to the complex question of how participants' learning processes took place and evolved over time, since data collection focused mainly on individual trajectories.

The present research may be also characterized as quasi-experimental, (Dörnyei, 2007, 2011), since it considered a random assignment of participants by the researcher in terms of the setting where the data collection happened. According to Dörnyei (2007), quasi-experimental research does not use "random assignment to create the comparisons from which treatment-caused change is inferred" (Dörnyei, 2007, p. 117), but delineates data collection as possible to the real setting. As mentioned by the author, quasi-experimental research is complex especially because natural settings allow for several variables; however, significant data can be collected under special combinations of

avoidance of inequality and control of effects and threats. In general, quasi-experimental research "seem to deliver scientifically credible results" (Dörnyei, 2007, p. 120). Although quite complex, quasi-experimental research is quite magical in the sense that investigates authentic learning environments with genuine class groups of students / participants. In this sense, this doctoral research was designed to be as close to real foreign language classrooms settings as possible, having its data collected in a public school in Florianópolis, Brazil.

As stated by Dörnyei (2007), quasi-experimental research "leaves a study more vulnerable to threats to validity than a full experimental design" (Dörnyei, 2007, p. 118), however, just because threats are plausible does not mean they are possible. As a result, an investigation with design, delimitations, variables and trustful measurements, properly planned and executed, may yield scientifically credible results (Dörnyei, 2007).

In addition, the present research can be classified as a case study (Nunan, 2008; Dörnyei, 2011), in which the participants are part of a specific group with peculiar characteristics. Their attitudes and performance may be different in controlled data collection contexts, focusing on the whole process in a more naturalistic manner, reaching for results that may help improve language learning and teaching FL research. Also, this research is exploratory in the sense that it deals with technological and digital resources for vocabulary learning in English as a foreign language. Furthermore, this investigation is considered exploratory because it investigates technology and digital resources, which are always being updated, reorganized and upgraded.

Research Questions and Objectives

As previously presented in Chapter 1, the general objective of this doctoral research is to investigate whether and how (in terms of participants perceptions) the digital game *The Sims* assist vocabulary of English as a foreign language. The specific objectives of this study aim to:

1) Unveil if the digital game *The Sims* assisted vocabulary development in a real English as a foreign language setting, considering participants quantitative scores;
2) Describe and analyze participants' perceptions on *The Sims* digital game playing for vocabulary development in a real

foreign language setting, considering their written narratives analysis;

3) Interpret and analyze participants' perceptions on *The Sims* digital game playing for vocabulary development in a real foreign language setting, considering their oral interviews transcriptions.

In an attempt to reach the research objectives presented above, there are three research questions that guide this research:

RQ1: *To what extent does the digital game The Sims assist vocabulary learning in English as indicated by the pre-, post- and delayed post-tests participants' scores?*

RQ2: *How does the digital game The Sims assist vocabulary learning in English as indicated by participants' perceptions, according to their narratives?*

RQ3: *How does the digital game The Sims assist vocabulary learning in English as indicated by participants' perceptions, according to their interviews?*

The present research, therefore, consists of investigating vocabulary acquisition in English as a foreign language with the assistance of the digital game *The Sims*. After having mentioned the research objectives and research questions, the next section presents the participants and data collection context.

3.2 Participants and Data Collection Context

This research involved a sample of 19[19] beginner English learners enrolled at high school integrated courses at the Federal Institute of Santa Catarina (IFSC). The participants were students of the third semester of the Integrated High School of the Technical Courses of Chemistry, Sanitation, Building, Electrical, and Electronics of IFSC,

[19] Initially, there were 27 students in the classroom. However, 8 participants were excluded from the data collection and analysis due to these reasons: a) not enough cellphone / tablet memory space to download the game; b) lack of a personal of cellphone / tablet; c) pair or trio gaming with colleagues that had a gadget; d) later arrival in the school or classroom due to school or course transference.

campus Florianópolis. Their age ranged from 15 to 18 years old. There were 11 girls and 8 boys. They came previously from public or private where they first started learning English as Foreign Language since their sixth year of Elementary School years.

At IFSC, participants studied technical courses integrated to high school. Therefore, besides regular high school subjects, such as History, Geography, Portuguese, English, Mathematics, among others, the participants of the present study were enrolled in technical subjects of their specific areas, such as Civil Construction, Safety and Hygiene at Work, Biochemistry, Statistics, Business Management and Machinery and Equipment, etc. Moreover, for them, learning English was not focused on the learning of grammar *per se*, or on English for Specific Purposes (ESP), but on the language structure for formal and informal communication settings and academic purposes, especially because students are driven to improve their rhetoric skills and to participate in exchange programs (where they may use English).

All participants of this research are beginner learners of English, whose proficiency had been established through the results of a placement test[20] in English at the beginning of their third semester[21] – where the learning of English begins in the integrated technical courses. Individual results of each participant in the placement test were provided from IFSC professionals to me in order to ensure that the students' levels of proficiency were similar and were, in fact, consistent with their beginner level.

At IFSC, there were – at the data collection phase, 4 English teachers that worked with leveled groups of students, following the placement test they take semesterly. The English classes happen in classrooms where students have only foreign language classes, such as English and Spanish, so teachers and students can feel more comfortable and at ease during those classes.

---

[20] The placement test applied by the English teachers of IFSC campus Florianópolis consist of two steps: 1) an online reading and writing placement test that grades students according to the Common European Framework of Reference for Languages (CEFRL); and 2) an oral interview with the intent to listen and to grade students' oral performance of English. Both tests were applied in the beginning of the semester in order to place students according to their knowledge of English. According to the CEFRL, students / participants of this investigation were considered A1 or A2, or Basic Users of English.

[21] The third semester at IFSC campus Florianópolis is equivalent to the second year of a regular Brazilian high school system, and students have English classes for 3 semesters in total.

This section offered an overview of this investigation's participants and data collection setting. Next section presents the research resources and instruments.

3.3 Research Instruments

This section shows and explains the instruments used in the different phases of the data collection. Data collection was divided in three phases: the first phase was quantitative, while the second and third phases were considered qualitative[22]. The first phase of data collection consisted of pre-test, post-test, delayed post-test, to measure the participants' quantitative development as the result of the game playing session (Appendix 1). The second phase of data collection consisted of a written narrative where participants could gather and reflect on their perceptions based on the game playing sessions (and on their general opinion regarding digital games playing) in relation to their vocabulary development in English (Appendix 2). The third phase of data collection consisted of two oral interviews with participants (Appendix 3 and 4), that have been recorded. The interviews were divided in two steps: 1) the first interview was structured and was applied by the end of the school semester (5 weeks after the last gaming session), with questions regarding participants' perceptions on learning and motivation to play (to see the transcriptions, access Appendix 5), while 2) the second interview was semi-structured and focused on participants' learning memories so as to assess vocabulary learned (to see the transcriptions, access Appendix 6), taken 6 months after the first (structured) interview. Both the narrative inquiries and the interviews followed the purposeful sampling principles so that a smaller sample of data could be deeper analyzed. Further theoretical contribution concerning purposeful sampling will be presented in the sections of narrative inquiry and both oral interviews (structured and semi-structured).

[22] The tests and the gaming sessions of playing The Sims were planned as part of students third semester at IFSC campus Florianópolis in the mandatory course English as a Foreign Language for the beginner level, specifically which participants have to study vocabulary for physical appearance and routine and daily activities.

The Sims

The digital game selected for this research is *The Sims,* a digital simulation game that allows players to create a virtual family of characters called *Sims*, which can be guided (by players) through the challenges of everyday living (Ranalli, 2008). The game version - *The Sims FreePlay* - used for the purposes of this study has been downloaded freely and the game was played in participants' tablets and/or smartphones (without payment requirements). With the intention of fulfilling tasks and accomplishing and passing levels, players needed to attend to their *Sims*' physical and emotional needs, to help them find jobs and resolve domestic and interpersonal problems, and to fill their homes with furniture and appliances. Although the game characters in the game do not speak English, they interact via gesture and an own (nonsense/inaudible) language called *Simlish*. Nonetheless, the game exposes players to a great deal of written language in English, in the instructions, control and status bar labels, warnings and information updates (Ranalli, 2008).

In this digital game, the player has the objective of creating and maintaining a city with its citizens, private and public buildings, houses, parks and stores – such as a real city or town in somewhat any country. After having selected and bought (with game money) the building place for a house, it is necessary to create the *Sim* – character of the game and house resident.

To create the *Sims* (characters), the player can choose among several physical characteristics, such as hair color and style, eye color and skin tone, characters' clothes and accessories, and finally, their names and gender. Afterwards, the player must buy or build a house and rebuild it according to the player's preferences. After having the characters' house, the player continues with the missions in the game: to build working places so the characters can work; to build parks and recreational places so characters can have fun and socialize; to build schools so the characters can study; to build stores where characters can buy food, clothes and decoration artifacts; among other actions. Each of these actions happens in the forms of missions, so players get enough score to level up while getting acquainted and familiarized with the game. The higher the level, the more the options to be bought and to be used. For example, in level 3, there are only few stove options (1 or 2) to be bought for the kitchen renovation, where in level 8, there are more (4 or 5). The same happens with decoration options: in level 1, there are few kinds of lamp that can be bought, and in level 6 there are a bigger

number of lamp colors and styles to be chosen by the player. The figures[23] below illustrate some of the game actions and missions.

Figure 3.1: The Sims Freeplay introduction

Figure 3.1 illustrates the opening scene after players downloaded the game *The Sims*. Figure 3.2, on the other hand, show an empty city where players are going to be able to build houses, schools, business buildings, and others.

Figure 3.2: The Sims Freeplay housing introduction

[23] All figures were taken by the researcher when playing the game *The Sims* in her smartphone and are part of her personal repertoire. All figures were taken for data collection support in 2016. Since the game is constantly updated, scenario, graphic quality and wording may have suffered alterations since that time.

Figure 3.3: One of the first The Sims Freeplay hygiene tasks

Figure 3.3 shows one of the first tasks that players must complete: to ask their characters, *Sims*, to wash their hands. Other personal hygiene tasks are presented similarly, such as going to the bathroom and taking a shower. Figure 3.4 illustrates building and decorating options, such as buying lamps.

Figure 3.4: One of the first The Sims Freeplay house decoration tasks

After establishing a house and some basic hygiene habits for their characters, players are allowed to personalize their *Sims* (characters) in accordance with their own choices. They can choose from hair styles and colors, head shapes and the use of hats, eye color and accessories, and clothing items. Figure 3.5 exemplifies that.

Figure 3.5: One of the first The Sims Freeplay character personalization tasks

Figures 3.6 and 3.7 show that as for the next tasks, the player must worry about getting money and food for their *Sims*. In order to feed their characters, players can either plant or grow food, or either choose to cook, to bake or to get something from the refrigerator. To get money, the player can either grow food by planting them or by selecting a job, such as a firefighter occupation.

Figure 3.6: One of the first The Sims Freeplay food-related tasks

Figure 3.7: One of the first The Sims Freeplay job-related tasks

Besides these regular routine actions, every week or seasonal holiday there is a whole new free package of "weekly missions" with new thematic objectives and prizes, such as Easter and Valentine's Day. Throughout gameplaying, players would receive more experience points and game money, which, in turn, would allow them to level up more easily. As previously mentioned, in higher levels, there are new buildings and decor options, new different designed houses, new outfits and stylish looks available, which usually keep players motivated to keep playing in order to reach those levels with those new choices to make and brand-new artifacts to buy.

Furthermore, *The Sims* is an example of a digital game especially used for vocabulary learning, since it provides gamers with vocabulary of actions carried out daily, such as cooking, cleaning, building, eating and shopping. This game was selected as an object for this investigation due to these reasons: a) its age limit enforcement compatible with participants age (players can be under eighteen to play); b) its availability, being that it can be easily found and downloaded online for free with small smartphone memory capacity; c) its resemblance to real life daily situations and vocabulary; and d) its popularity among teenagers' players[24]. Words from the game were selected for the pre-test, post-test and post-delayed test regarding their high frequency use in the first game tasks and game tutorial in order of appearance.

[24] Teenagers under 18 years old represent 28% of digital games players. Among all players, 42% play with friends as a way to bond and to have fun altogether. In addition, digital games such as *The Sims*, which received an E (Everyone) rating, are the majority among players, with 34% of downloads (ESA, 2018).

In a similar study, Ranalli (2008) found five thousand words in *The Sims* and sorted them regarding frequency lists. For this research, the words were randomly selected for the three tests, in order of appearance[25]. Since I did not intend to correct the activities of each test and provide students with feedback, the same test layout with the exact same activities was used in all three tests: the pre-test, the post-test and the delayed post-test (Appendix 1). Students-participants were not allowed to use a dictionary during the game sessions in an attempt to ensure the efficacy of the tests measurement.

In an attempt to bond theoretical support with the preparation of the activities for the tests applied in this research, I followed Hatch and Brown's (1995) five steps for vocabulary acquisition. As stated by the authors, the five steps for vocabulary acquisition are: 1) encountering new words; 2) getting the word form; 3) getting the word meaning; 4) consolidating word form and meaning in memory; and 5) using the word. All the first four steps can be encountered in digital gaming *The Sims*. Since the words that the players were exposed to (in the game) are written, players could relate the images or actions that the characters perform to the written words, in a way that vocabulary development can take place.

Quantitative Data Instruments

Quantitative data collection consisted of a pre-test applied before the gaming sessions, a post-test applied just after the last gaming session, and a delayed post-test applied three weeks after the gaming session. The pre-test was applied in an attempt a) to assess existing knowledge of the target words, b) to check if students were in similar levels of proficiency, and c) to provide a baseline for comparison with the post-test and delayed post-test. It was established that all the three tests (pre-, post- and post-delayed) should be in the same layout using the same words, with the intention to measure and compare participants' vocabulary development. The words assigned to the tests were used in different and randomized orders via a variety of activities types (matching, multiple choice, translation, short answers, among others) (Appendix 1), following/based on Ranalli's (2008) study. Besides that,

[25] For example, one of the first tasks participants had to complete was to personalize their characters and to clothe them, by selecting hair styles and color, and their chosen pieces of clothes, such as skirts or pants. Therefore, "dark hair", "t-shirt" and "shoe" were words asked in the tests.

in each test applied, by its end, there was a feeling state table in which participants could select how they were feeling that day. This procedure was taken in an attempt to allow me to comprehend if the participants' feeling states could affect their quantitative test scores. The feeling state table can be seen below:

Table 3.1
Feelings state table to participants check how they were feeling by the end of each quantitative test.

( ) Bored	( ) Tired	( ) Okay	( ) Good	( ) Great	( ) Terrific
					

Qualitative Data Instruments

Qualitative data collection consisted of a written narrative, and two interviews with some participants. The narrative inquiry was asked to be written informally, 4 weeks after the last gaming session. For the narrative, participants were instructed to share their perceptions (in Portuguese) on the experiences regarding digital gameplaying *The Sims* as a classroom activity, writing and reflecting on how this experience may have changed their learning process in terms of vocabulary learning.

The interviews were twofold. The first one (Appendix 3) was five weeks after the gaming session number 8 (the last one) and was structured questions aiming to check participants' perceptions on the use of game *The Sims* for their vocabulary learning, motivation, emotional states[26], and memorization. During the application of the structured interview, I felt that participants were not willing to develop further on the questions proposed. Maybe because of their age group, they may have felt shy or embarrassed to elaborate on their thoughts and opinions, providing mostly short and direct answers. It seemed that they were feeling undisposed to talk much, possibly because of the end of the semester and the agitation concerning their grades and approbations were all around the school. Because of that, I did not feel that it was

[26] Motivation and emotional state have been considered important aspects emerging from digital games playing, since research has shown their positive contribution to learning processes (Medina, 2005; Shinkle, 2008; Admiraal et al., 2011).

appropriate to insist on the topics or questions raised, or to keep participants for too much time in the interview situation.

The second interview was semi-structured and was applied 6 months after the first (structured) interview. Its objective was to check participants' memory assessment in terms of their learning (as can be seen in Appendix 4). The decision to apply for a second interview was done to complement their first comments, and to be applied after their semester (of previous data collection) had finished. By the time of the second interview, participants were in the middle of the school semester and they seemed to be calmer and more focused. However, even though the second interview focused more on their test scores and memorization, again, participants seemed to be unwilling to expand on their answers and comments as well. Consequently, I decided to slightly repeat the entire pre-prepared questions to the participants. Nevertheless, both of the interviews made possible to comprehend deeper some participants perceptions regarding their vocabulary development during gameplaying *The Sims* as a classroom activity.

Finally, all qualitative data instruments - the written narrative and the interviews - focused on participants' perceptions regarding how *The Sims* can assist vocabulary development in English. Each instrument and procedure for this research will be further explained and detailed hereafter.

3.4 Procedures for Data Collection

For this research, the game sessions took place in regular English classes of the third semester of the technical courses of IFSC campus Florianópolis, as part of the students' curriculum for learning English as a foreign language. A week preceding the pre-test application, I explained to all participants the doctoral research being carried out and invited them all to participate. Without exceptions, all students agreed and took home a consent term or agreement term to be signed by their parents or guardians. All terms contained my contact forms to call, send e-mail or to be in touch in any steps of the research. They were handed back to me in time, prior to data collection.

Pre-test Application

Before the pre-test data collection started, all participants received the following steps: a) an oral explanation of the proposed task, its objectives and functioning, so that their doubts would be answered;

b) a printed paper sheet with instructions in Portuguese to find the game online and download it for free, guiding students in the installation of the digital game on their phones or tablets, so that they had the time and confidence to become familiar with the resource; c) a printed paper sheet with the pre-test activities (with a total of 25 alternatives divided in 6 activities to be chosen, matched, or answered in written form) to be done prior to the gaming session. In addition, I organized the classroom and all participants in a circle, in order to prioritize silence and concentration during the pre-test implementation, and to reduce conversation possibilities among participants.

During the application of the pre-test, participants were instructed to answer only the activities they knew, avoiding guesses, and were informed that leaving blank answers would not be a problem. I reminded the participants frequently that the test would not be part of their final grades; however, I emphasized its importance and seriousness. By the end of the pre-test application, all participants handed in the pre-tests with their names, date and their answers.

After the application of the pre-test, participants received the task to download the digital game *The Sims* as homework, and not to play it whatsoever. All participants agreed on that decision. Also, this instruction was given so that all participants would begin playing in the same day (in gaming session 1), guaranteeing that they would all follow instructions and be present in the gaming sessions altogether.

Gaming Sessions

During all the 8 gaming sessions, participants played the game *The Sims* organized in a circle in the classroom[27]. The game sessions usually lasted around 45 minutes for each participant and each gaming session. Since these sessions were applied as part of the school curricula, there were days that participants could play more, and there were days they had to play a little less. Either way, none of the gaming sessions lasted less than 35 minutes or more than 50 minutes. Participants were instructed not to use dictionaries and / or translators during the gaming sessions.

While the gaming sessions were applied, I did not interrupt participants in their gaming experiences. Some of the participants briefly commented with the near colleagues, showing and sharing their

[27] All participants were organized in a big circle in the classroom, in order to maximize silence and concentration during the gaming sessions.

gaming choices, sharing tips and talking about the game in general. In addition, I took the role of observer as well, walking around among participants to check and to observe their gaming skills, to answer possible doubts[28], to minimize too loud conversation interaction among participants. Intentionally, I did not answer possible questions asked regarding translation and/or meaning of words from the game, allowing participants to learn lexical items by association, memorization or other personal strategies or techniques. By the end of the last gaming session, participants were instructed to reset and delete the game *The Sims* from their cellphones / tablets. I helped participants in completing this task, which was intended to prevent participants from playing the game (neither in classroom periods nor in their own leisure time).

However, as this investigation's data was collected in real non-artificial settings prioritizing ecological validity, there were some uncontrolled variables, which are further explored and presented in the limitations of this study, in Chapter 6. The use of a dictionary by participants during gaming sessions is one of them. Thus, this investigation was applied and data were collected in authentic contexts. I understand that a study of this nature, even with all the limitations that emerged, can be achievable and applied in real settings, combining the use of digital resources for teaching and learning of English as a foreign language purposes.

Post-test Application

After 8 gaming sessions, I proposed the application of the post-test. The post-test application was done on the same day as the gaming session 8, which is the last one. This was intentionally done so that participants would assess the vocabulary asked from the game playing session. Previous research, as formerly cited in Chapter 2, showed that the higher the frequency and the time exposed to new lexical items, the higher the chances to be remembered (Nation, 2001, 2014; Yudintseva, 2015). Besides, as stated by Schuetze (2014), the timing point of testing may influence the retention of words for learning:

> if words are tested minutes after the encounter, the loop is still active. At that point, it is difficult to say if a record has been created yet. […]

[28] I did not answer any question or doubt related to wording in the game. The doubts taken during gaming sessions were related to homework, school activities, air-conditioning, etc.

> What is then tested is if the loop is still active, but not if words have been committed to long-term memory (Schuetze, 2014, p. 4).

This way, the intention was to allow participants to have lexical items learned "fresh" in their minds, active in their working memory.

Prior to the post-test application, participants received the following: a) an oral explanation of the proposed activities, its objectives and functioning, so that their doubts in regard to the activities would be answered prior to the post-test application; b) a paper sheet with the post-test activities (with a total of 25 alternatives divided in 6 activities to be chosen, matched, or answered in written form) to be done after the gaming session. Besides, I organized the classroom and all participants in a big circle, in order to minimize comments among participants, and to enhance opportunities for silence and concentration.

During the application of the post-test, participants were instructed to answer only the activities where they knew the answer, to avoid guesses, and to leave answers blank if they did not know their answers. I also reminded participants that the test would not be part of their final grades; however, I emphasized its importance so that participants would take the activity seriously. By the end of the pre-test application, all participants handed in the post-tests with their names and their answers.

Delayed Post-test Application

The delayed post-test[29] application was done three weeks after the application of the post-test. According to Laufer (2005), empirical evidence shows that delayed tests applied (in similar contexts and conditions) between 2 weeks and 2 months can benefit learning.

Prior to the delayed post-test application, participants received the following: a) an oral explanation of the proposed activities, its objectives and functioning, so that their doubts in regard to the activities would be all answered prior to the test application; b) a paper sheet with the delayed post-test activities (with a total of 25 alternatives divided in 6 activities to be chosen, matched, or answered in written form). In addition, I organized all participants in a circle in the classroom, in order to enhance opportunities for silence and concentration.

[29] During a period of 3 weeks between the post-test application and the delayed post-test application, participants were instructed to not play *The Sims* in their cellphones anymore, neither at the classroom nor in their own leisure time.

During the application of the delayed post-test, participants were instructed to respond only the test items of which they knew the answer (in order to avoid guesses), and to leave answers blank if they did not know their answers. This way, participants were instructed to provide only the answers that they were certain of. I also reminded participants that the test would not be part of their final grades; however, I emphasized its importance so that participants would take the activity seriously. By the end of the delayed post-test application, all participants handed in the activities paper sheet back to me.

Narrative Inquiry

According to Connelly and Clandinin (1990), narrative inquiries are increasingly used in educational research: the main claim is that humans are storytelling individuals who lead stories lived (Connelly and Clandinin, 1990). People share and tell stories all through their lives: from lullabies, to learning how to speak and how to write, reading books, writing in journals, sharing personal experiences and so on. As stated by Smith (2007), while narratives are personal, they are also social: "The context, setting, audience, the particular situated purpose of a story, tellability, and the narrative resources available to tellers frame what might be said and how it can be narrated" (Smith, 2007, p. 391). Therefore, sharing stories and narratives show unique and personal manners of dealing with dilemmas and challenges; they are the references to which we trust upon and reflect on our own life experiences.

According to Murray (2009), in the last decades, scientists from an array of areas have understood that human experiences could and should be documented and studied: as a result, narrative inquiries have emerged as a form of research. Narrative inquiries, then, go one step further and take into consideration cultural, political, religious and educational spheres, since "a language learning story is not easily separated from the individual's life story and its sociocultural contexts" (Murray, 2009, p. 47). This way, narrative inquiries may enable researchers to access participants' identity and valuable information about their learning processes.

In addition, according to Murray (2009), one of the most important steps for collecting narrative inquiry data is to establish a rapport with participants. By establishing a good relationship based on mutual respect and trust, participants would feel comfortable to share

their stories, most likely providing a more detailed text[30]. Narratives, thus, are closely linked to experiences; and they promote reflected learning: they help students to reflect on their own learning experiences and beliefs (Barcelos, 2006).

Considering data collected from the pre-test, post-test and delayed post-test, I decided to select a smaller part of all participants to write a narrative inquiry, procedure called 'purposeful sampling' (Palinkas, Horwitz, Green, Wisdom, Duan, & Hoagwood, 2015). This technique is used in the selection of the participants for qualitative data analysis, where individuals are selected based on the assumption that they possess knowledge and experience with the phenomenon of interest and, thus, will be able to provide information that is detailed (Palinkas et. al, 2015). This way, purposeful sampling aims at focusing on particular characteristics that are of interest and/or can best enable the answering of the research questions. As in the case of this research, the participants that were selected to write a narrative inquiry followed the same criteria: they had to play at least 5 or more gaming sessions; and they had to play the game in English at all times.

Bearing in mind that narratives are part of social experiences, and narrate real life stories and reflect learning experiences, this research proposed participants to write a narrative. Its inquiry proposed to them to relate their digital game playing *The Sims* in English to their learning processes of vocabulary. Hence, it was showed to the participants an example of narrative inquiry (Appendix 2) so that they could understand (prior to their writing) what was being asked to be written. Through observation, I could notice that, during the narrative inquiry writing, the majority of participants were feeling comfortable and at ease to write their perceptions, opinions and feelings regarding their gaming experiences in the classroom.

Structured Interview

The structured interview was applied on the same day as the narrative inquiry. It was the end of the semester and participants were worried about their grades. The structured interview had 5 questions and intended to know participants' perceptions on learning English via

[30] Therefore, it was arranged for this research data collection a safe and neutral space for the narrative inquiry in a classroom at IFSC campus Florianópolis, where all student-participants received the same treatment in terms of wi-fi signal, lighting, personal space, and ambiance.

playing *The Sims*, their motivation to play and their opinion on positive and negative aspects of playing a digital game in the classroom (as can be seen in Appendix 3). The structured interview was applied in participants' usual classroom; however, only the participant and the researcher were present in the classroom during interview time. The interviews were recorded and transcribed later by me and lasted an average of 5 minutes each. The excerpts presented in this research were translated from Portuguese to English, but the whole interview transcription from all participants can be read in Portuguese, in Appendix 5.

As previously mentioned, both interviews followed the purposeful sampling principles. According to Palinkas et al. (2015), purposeful sampling is a technique for the identification and selection of information-rich cases for the most effective use of limited resources. It is, in fact, highly used in qualitative research and involves identifying and selecting groups of people that are familiar about or experienced with a phenomenon of interest. As stated by Palinkas et al. (2015), there are numerous types of purposeful sampling designs, such as the selection of extreme or deviant cases for the purpose of learning, and the selection of cases with maximum variation and common patterns that cut across variations.

In the case of this doctoral research, 6 participants were selected and invited to participate in the interview from the larger group sample of participants because they met the same criteria: As in the case of this research, the participants that were selected to take part in the interviews followed the same criteria: they had to play 5 or more gaming sessions, and they had to play the game in English at all times. This way, these participants met a specific criterion, which was a greater contact and knowledge of the game functions, since they had played it for a higher number of sessions. According to Palinkas et. al. (2015), these participants were, therefore, considered a phenomenon of interest by virtue of their experience, making them information-rich cases.

Semi-structured Interview

The semi-structured interview was applied 5 months after the structured interview, in order to check participants' memorization in regard to the lexical items learned via playing *The Sims*. More specifically, the semi-structured interview had 5 questions from which I intended to understand participants' memory on the assessment of their

learning (as can be seen in Appendix 4) and on their choices in the tests' answers.

The semi-structured interview was applied individually, following the purposeful sampling technique following the same selection criteria, previously presented. The interviews were recorded and transcribed. The excerpts presented in this research were translated from Portuguese to English, and the whole interview transcription from all participants can be read in Portuguese in Appendix 6.

3.5 Procedures for Data Analysis

As previously stated, data collection for the present research were twofold: quantitative and qualitative. First, the quantitative data collection: the pre-test, post-test and delayed post-test were administered prior and posterior to the gaming sessions. Second, the qualitative data collection: the narrative inquiry, the structured interview and the semi-structured interview were administered.

All data was collected, compiled, recorded, transcribed, compared and analyzed individually for each participant that completed all the tests and tasks proposed. In addition, data collected from the participants who did not follow the criteria of not using dictionaries and of stopping to play *The Sims* after the post-test were analyzed. Participants' names were replaced for the present investigation in order to keep their confidentiality. To compute participants' results in the pre-, post-, and post-delayed tests, statistical mathematics was calculated in order to keep percentage track of their individual scores. Then, to interpret the scores, I used the criteria of measuring each test score to find whether digital gaming played a role in vocabulary English acquisition. Participants' scores ranged from 0 to 25 considering *correct* answer, *incorrect* answer and *no answer* - activities left blank. The activities used in the pre-, post- and delayed post-tests used words from the game.

In the correction of the tests activities for the purposes of this doctoral research, "redundant word, missing word, word disorder, and word selection" (Liu et al., 2014, p. 42) were considered wrong answers. Therefore, words with spelling errors, word order and missing word problems were not considered as properly answered in any of the test activities. Nonetheless, all test activities from the pre-, post- and delayed post-tests were the same and combined a set of either matching, checking or writing a possible meaning in the other language (translating) activities.

Data collected from the narratives and from the structured and semi-structured interviews were separated by participants for the analysis, identifying information that could reveal vocabulary development, or other information considered relevant on the game playing for the purposes of this research. Regarding these aforementioned instruments, participants' perceptions guided the analysis. In qualitative data analysis, participants mentioned relevant points such as motivation, emotional and feelings states, learning opportunities, interaction and collaboration that *The Sims* allowed or triggered in them.

3.6 Summary of the Chapter

Chapter 3 discussed methodological approaches of this doctoral research. First, the research design and objectives were presented. This investigation was reasoned as qualitative research. Also, this study was reasoned as quasi-experimental, since it considers data collection in real and natural settings for an authentic learning environment, and experimental since it investigates the use of a digital game for vocabulary learning, and this is under constant development and update. Then, the research questions and objectives were displayed.

Secondly, participants and data collection context were explored, followed by the research instruments, in terms of *The Sims* characteristics, and of quantitative and qualitative data instruments. Fourthly, the procedures of data collection were unveiled, discussing the pre-test application, the gaming sessions, the post-test application followed by the delayed post-test application, the narrative inquiry, the structured interview, and the semi-structured interview. Finally, procedures for data analysis were detailed. I shall now move to the next chapter, where the data collection analysis will be presented taking into consideration results from both quantitative and qualitative instruments for each participant.

CHAPTER 4 - DATA ANALYSIS

You cannot create experience. You must undergo it.
Albert Camus

In this chapter, data collection analysis regarding the participants' answers in the quantitative and qualitative research instruments are presented. This chapter is divided in three sections of analysis that follow the instruments applied for this investigation.

In section 4.1, 14 participants' scores collected in the pre-, post- and delayed post- tests are examined as part of the quantitative approach. In section 4.2, qualitative data are discussed by participant. Both narrative inquiries and interviews were applied only to a few number of participants in consonance with purposeful sampling (as already presented in Chapter 3 – Method). Still in section 4.2, the answers from the interviews carried out were analyzed. The 6 participants' transcription were translated (from Portuguese) to English and are presented whenever suitable for discussion (for a complete transcription of participants' both interviews, the reader may consult Appendix 5 and Appendix 6).

Participants' responses for the purposes of this research were retrieved from their interviews and their narratives in relation to their perceptions of vocabulary acquisition in English and of making use of the technological resource of the digital game *The Sims* in English as a foreign language as a classroom activity. Participants' responses and perceptions were selected and analyzed as an important aspect of this research in terms of qualitative data.

Finally, section 4.3 addressed both quantitative and qualitative data from 5 participants that did not follow one or more of the set of instructions established prior to the gaming sessions. Participants' scores in the tests, their narrative inquiries and interviews are analyzed. As formerly stated, in this investigation the names of the participants have been changed and they do not reflect the participants' real names. This has been done in order to follow the recommendations of the Ethics Committee to preserve their anonymity.

4.1 Quantitative Data Analysis

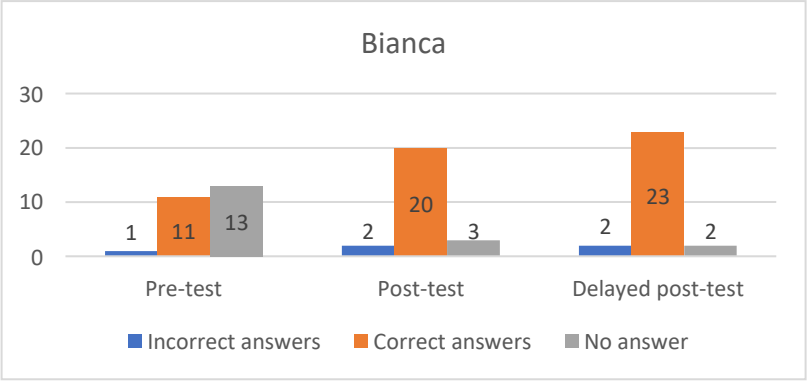
In this section, I present and discuss scores from quantitative data from a total of 14 participants. Analysis is divided by participants so

their data can be analyzed taking into consideration their individual differences, experiences and scores.

Bianca

Comparing the results of her tests, Bianca seems to have retained lexical items in an increasing manner. This can be seen in graph 4.1. If compared with the pre-test, in which she answered 11 correct activities prior to the gaming sessions, she had improvement of 12 lexical items in the delayed post-test, in which she answered 23 correct activities. While the number of incorrect answers in the tests appears to have stabilized between 1 and 2, the number of answers left blank diminished considerably and constantly, going from 13 in the pre-test to only 2 in the last test. Regarding her incorrect answers, as a matter of example, in the pre-test she signaled incorrectly the picture of a bedroom for "*bathroom*", and that same mistake was not repeated in her post- or delayed post-test. This may mean she learned that word.

Besides her constant growth in the correct answers score, also her motivation scale constantly improved in the tests: in the pre-test, she selected the 'okay' mood for that day, while in the other tests she checked the 'good' mood box. As presented in Chapter 2, emotional state is determinant for learning opportunities, allowing participants to engage and feel motivated.



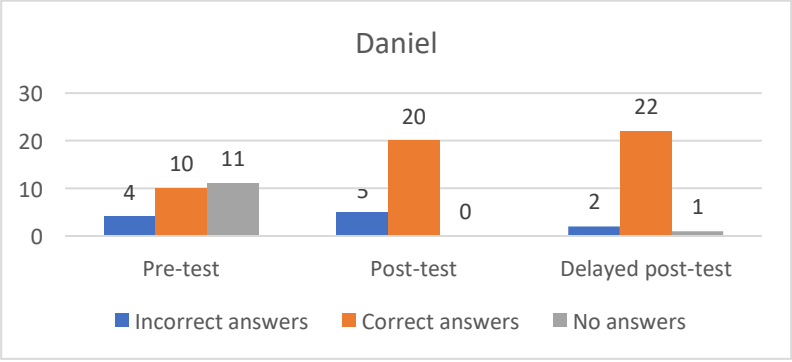
Graph 4.1: Bianca's pre-test, post-test and delayed post-test scores

As can be seen in the graph above, quantitative data show that Bianca seems to have acquired lexical items throughout the gaming sessions proposed for this research. As stated by Yudintseva (2015),

lexical items repetition and contextual clues, as happened in this data collection context, may be an effective strategy to practice and learn vocabulary. In addition, quite important to learning processes, her affective and positive emotions showed that she felt good most of times both to play the game *The Sims* and to answer the tests.

Daniel

Daniel's scores in the three tests might be considered satisfactory: he seems to have memorized a growing number of lexical items throughout the gaming sessions, as graph 4.2 shows. Regarding his correct answers, he managed to keep them in a continuously growing line: comparing the delayed post-test to the pre-test, he increased his score in 11 lexical items answered properly. Remarkably, after he answered a lexical item properly in the pre-test, he managed to keep answering the same word correctly in the following test, either the post and the delayed post-test. This is the case of words such as *eye*, *door*, and *bed*. Furthermore, his incorrect answers decreased in the same proportion. In the same way, he diminished considerably the answers left in blank, going from 11 in the pre-test to 0 in the post-test, then to only 1 in the delayed post-test. In the post-test, he managed to answer all activities, answering correctly 20 of them.



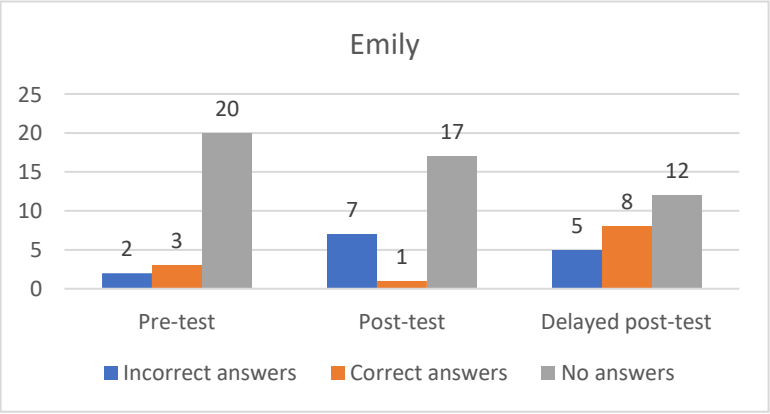
Graph 4.2: Daniel's pre-test, post-test and delayed post-test scores

His test scores, which went from 10 in the pre-test to 22 right answers in the delayed post-test, demonstrate that Daniel seems to have memorized words learned by playing *The Sims*, especially because he continually answered properly the same ones. His emotional scale,

applied at the end of each test, stated positive emotions – which is similar to his positive results: he stated that he felt between 'good' and 'great' in all tests.

Emily

Emily's scores show what seems to be lexical items memorization during gaming sessions, although did not change considerably among tests, as graph 4.3 illustrates. According to Cárcamo et al (2016), it is paramount to realize that acquiring lexical items is a connection between words and their reality, such as in the context of *The Sims*: without words in context, it would be impossible to understand other people's thoughts, expressions and ideas. This may have happened in Emily's case. Compared to her scores in the pre-test, it can be seen that the number of correct answers increased in the delayed post-test, going from 3 to 5. Interestingly, the number of correct answers grew continually even after the gaming sessions ended, which show a constant increase in her vocabulary development and intellectual adaptation. Cases such as Emily's, in which the number of activities answered properly continue to grow even after the last gaming session will be further discussed in Chapter 5 – Discussion of Data.



Graph 4.3: Emily's pre-test, post-test and delayed post-test scores

In the same way, the number of incorrect answers increased in the delayed post-test, in comparison to the pre-test, going from 2 to 5. One possible explanation is that Emily might tried to correctly guess the activities. Also, it is noticeable the decrease in the number of blank

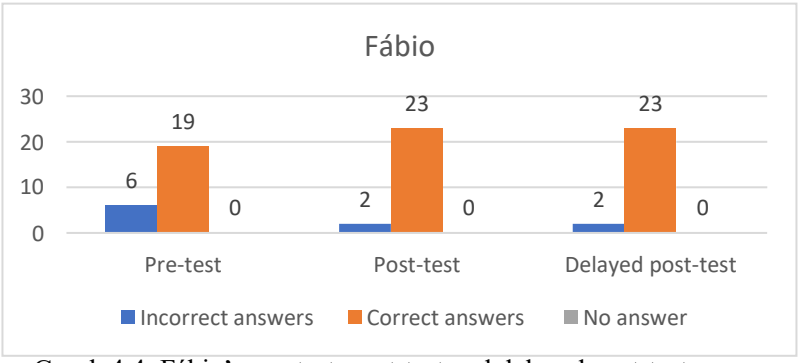
answers throughout the tests, which may indicate better learning of lexical items throughout the gaming sessions, showing that she might have tried to (properly) answer the activities from the tests.

Emily's emotional scale, according to the boxes checked by the end of all her tests, states she felt 'tired', which might correlate with her low results of correct answers presented in the graph above. As previously presented by research (e.g. Mahfud & Lumombo, 2017), emotions triggered by digital game playing might affect and influence learning.

Fábio

When analyzing Fábio's scores, illustrated below in graph 4.4, it was noticed that in none of the tests he left activities unanswered. One possible explanation for this is that he might have felt comfortable guessing some answers in the tests, although I had stated frequently and emphatically during the test application to avoid guessing. Another hypothesis for this is that he might have tried answering the activities because he believed he knew the answer, guessing them. Moreover, considering the number of his incorrect answers being really low and decreasing, I assume that Fábio merely tried to answer correctly as if he knew the answer to those activities: he really tried to answer correctly the activities where he answered incorrectly.

Besides that, Fábio increased the number of lexical items answered correctly in the post-test, going from 19 to 23, and the same score was achieved in the delayed post-test. His scores remained stable between post-test and delayed post-test, remaining in 23 correct answers. However, it is important to make clear that the lexical items remembered in the post-test were not the same in the delayed post-test. Somehow, some of the answers were remembered while others were not. It is possible that those words may have links to Fábio's personal interests, emotions or motivation, or they may have been remembered due to their frequency of appearance in the game. This can be explained due to previous research that has already stated that the more the input and the repetition frequency, the more likely lexical items will be memorized (Nation, 2014; Yudintseva, 2015).

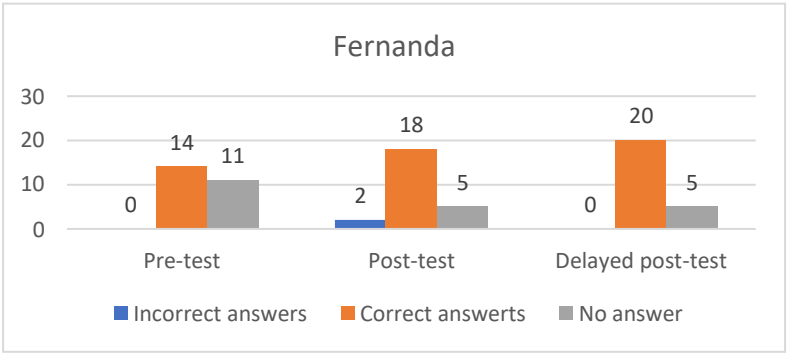


Graph 4.4: Fábio's pre-test, post-test and delayed post-test scores

In his emotional scale, he stated in the pre- and post-tests that he felt 'good' by completing those activities. In the delayed post-test, however, he checked the 'tired' box, indicating that maybe if he had felt better or more energized, his scores could have been even better by the end of all the tests.

Fernanda

Fernanda's test scores had improved continually during the gaming sessions and test applications. If we compare the correct answers, it is noticeable how she improved in the number of words from the beginning to the end. In the pre-test, she answered 14 activities correctly, while in the delayed post-test, this number increased in 6, going to 20 correct answers. This number represents 80% of the total of the test activities. Interestingly, the number of answers left in blank diminished in more than a 50% rate, going from 11 to 5 along with the application of pre-, post- and delayed post- tests. Additionally, the number of incorrect answers remained 0 comparing the pre-test and the delayed post-test.

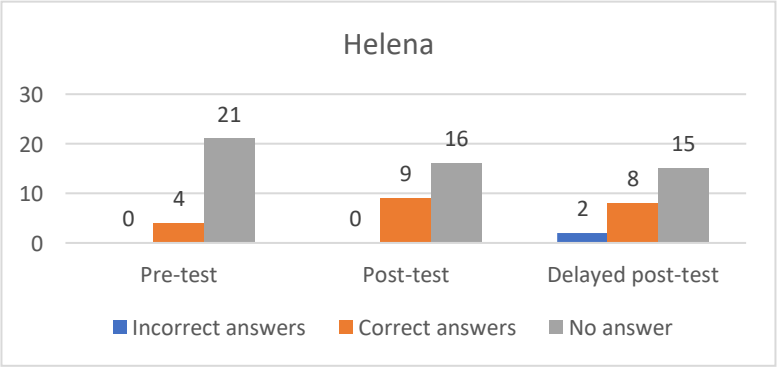


Graph 4.5: Fernanda's pre-test, post-test and delayed post-test scores

As the graph 4.5 shows, in consonance to her scores that showed an increase in lexical items acquired throughout the tests, in her emotional scale she checked 'okay' for all of them, stating that she felt good and motivated enough.

Helena

Helena's vocabulary knowledge of English based on the pre-test was quite lower if compared to her colleagues' scores. In the pre-test, Helena got 4 answers correctly, increasing to 9 in the post-test and decreasing to 8 in the delayed post-test. The number of the correct answers is just of 4 if comparing pre-test and delayed post-test, which can be considered good results for lexical items learning. However, the number of answers left blank in descending manner might indicate that Helena maybe felt more familiarized with the words, trying to answer them (properly) in the tests. In the pre-test, she left 21 answers in blank, then 16 in the post-test and finally 15 in the delayed post-test. This may mean that she felt more secure to try to answer those activities in the tests, especially because the number of incorrect answers increased in the delayed post-test. Helena might have been trying to answer or to guess the answers, although this was not according to the instructions given for this study.

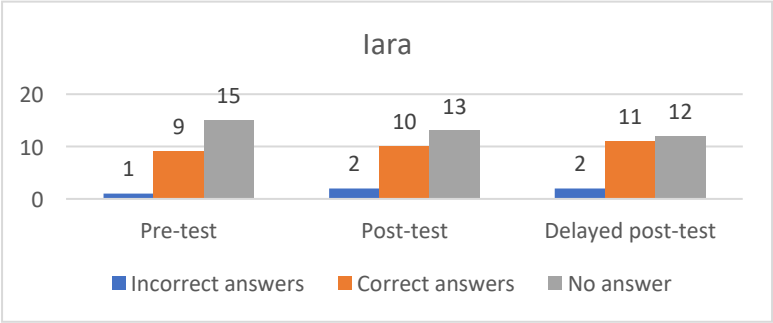


Graph 4.6: Helena's pre-test, post-test and delayed post-test scores

Besides the tests scores presented in Graph 4.6, while playing *The Sims*, I observed that Helena appeared to be really motivated and concentrated in the game environment, smiling and commenting with other participants on her actions when possible. In line with that, in her emotional scale she always selected 'good' or 'great'. Helena's scores may represent that, in fact, motivation can trigger learning for EFL environments (Yudintseva, 2015).

Iara

Iara's quantitative scores are interestingly complementary: while the number of correct answers increased, the number of left-blank answers decreased, and the number of incorrect answers stabilized among tests. Her scores are displayed in graph 4.7. In her pre-test, Iara answered 9 activities correctly, having increased this number to 11 in her final score in the delayed post-test. What changed more considerably in her results is the number of blank answers, that descended from 15 (in the pre-test) to 12 (in the delayed post-test). The words answered incorrectly in the tests, however, have remained the same in the last two tests. For instance, when asked to select the better translation for "*Trocar*", Iara had (incorrectly) answered constantly throughout the tests a correspondent in Portuguese to the option "*to drive*", instead of "*to change*", that would be the most suitable answer.

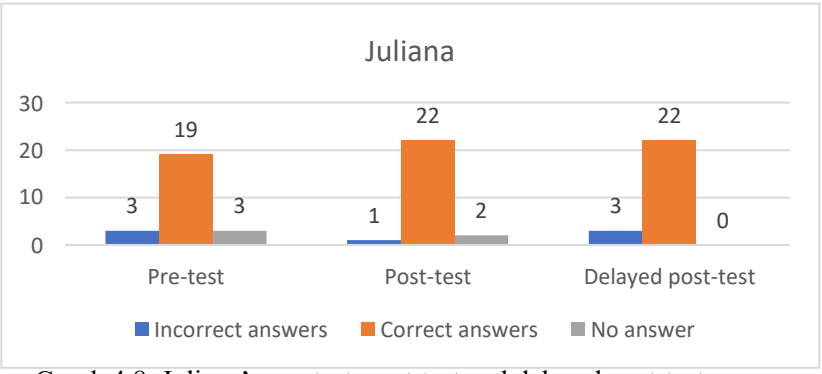


Graph 4.7: Iara's pre-test, post-test and delayed post-test scores

Iara seems to have felt motivated when playing *The Sims*, smiling, commenting and showing her game options and choices to other colleagues, when allowed. Because of the game, she may have felt more comfortable and joyful talking to her colleagues. In her emotional scale applied by the end of each test, she checked "good", "tired" and "okay" respectively for the pre, post and delayed post-test. While playing *The Sims*, Iara seemed to feel more at ease, enjoyable and communicative. In previous research (Liu et al, 2014; Gee, 2015), similar results showed that players tend to feel more motivated to learn vocabulary via digital resources in passionate affinity spaces, shared with colleagues or friends that comment and experience same interests, such as the ones created in *The Sims* gameplay sessions for this research.

Juliana

Juliana's scores showed that this participant already had some previous knowledge on the lexical items presented in the game *The Sims*. This conclusion can be made taking into consideration her scores in the pre-test, in which she got 19 correct answers (out of 25). This number, in fact, remained increasing to 22 in the post-test and remained stable in the delayed post-test. On one hand, Juliana's scores are high regarding correct answers in the tests; on the other hand, her scores shifted from zero to 3 considering both blank answers and incorrect answers. Juliana's scores in the number of correct answers, therefore, might be considered having a beneficial impact and increase on her learning development.

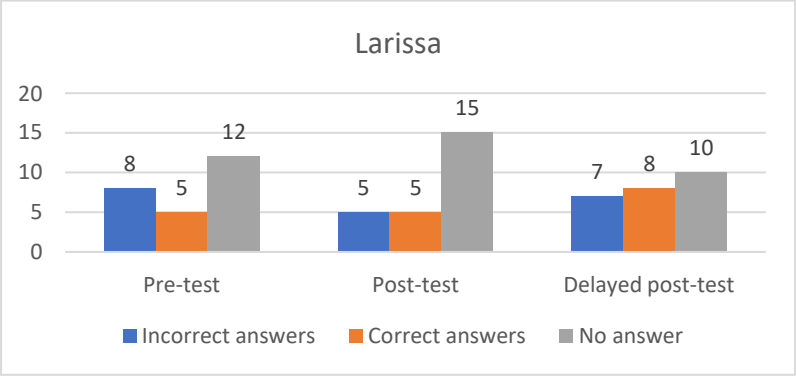


Graph 4.8: Juliana's pre-test, post-test and delayed post-test scores

Displayed in graph 4.8, her scores got higher between the pre-test and post-test, and then remained the same. This may indicate that lexical items might have been memorized in LTM (Baddeley, 2005). In consonance, her emotional scale applied during data collection by the end of each test have been marked as 'great' in all of them. She seems to have played *The Sims* as a fun and enjoyable activity, which guided Juliana's learning processes during gameplaying sessions.

Larissa

In Larissa's test scores analysis, it is noticeable that lexical items might have been learned and memorized during the gameplaying sessions. Her scores have kept ascending in terms of correct answers and they have been descending in terms of blank or incorrect answers, which might indicate learning of lexical items. In the pre-test, she answered 5 activities correctly, 8 incorrectly and 12 have been left blank. On the post-test, the incorrect answers diminished to 5, answers left in blank increased to the number of 15, and the correct answers remained the same with a number of 5. However, in the delayed post-test, the number of correct answers increased to 8, incorrect answers remained the same, and answers left blank diminished to 10. All things considered, Larissa's scores in the tests seem to have triggered development of lexical items - the more the participant answers correctly, the more the learning opportunities have place to happen.



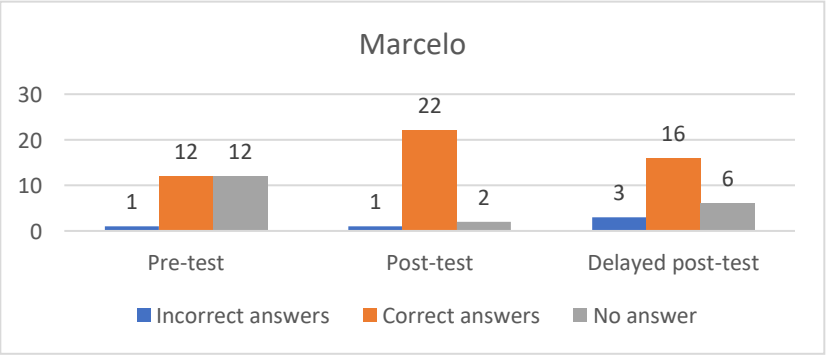
Graph 4.9: Larissa's pre-test, post-test and delayed post-test scores

Graph 4.9 above may, therefore, indicate her learning path increased and may have developed from the gaming sessions of *The Sims*. Besides that, Larissa's emotional scale demonstrated she felt pleased and joyful in the activities proposed for this research. Larissa checked 'great' for all tests, which can lead to the conclusion that she really enjoyed her time in the classroom during her learning processes.

Marcelo

Marcelo's quantitative scores, as showed in the following graph, portray complementary results: the number of correct answers and answers left in blank have grown in opposite directions. The more Marcelo answered correctly, the less he left blank the activities proposed in the tests. Thus, the number of incorrect answers has remained fairly the same throughout the tests, in a number of 2, going from one to another among the same words in his tests. As a matter of example, he marked incorrectly words such as *wall* and *lamp*.

As depicted in graph 4.10 below, Marcelo's highest scores were answered in the post-test, taken right after the 8 gaming sessions. In the post-test, this participant answered 22 activities correctly, 2 were left in blank, and one was answered incorrectly. The score in the delayed post-test, although it diminished reasonably (in comparison to the post-test scores), can still be considered as an ascending result in terms of lexical items acquired. In the delayed post-test, Marcelo answered 16 activities correctly, 6 remained left in blank, and 3 were answered incorrectly.

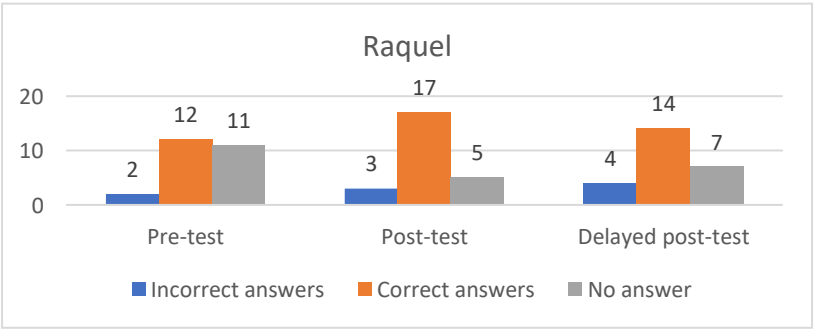


Graph 4.10: Marcelo's pre-test, post-test and delayed post-test scores

In the delayed post-test, a slight decrease in the number of correct answers was already expected. In this case, since the gaming sessions have already ended, this result is expected because the participant had not access anymore to the words from the game. Altogether, the results indicated that Marcelo may have learned lexical items in English by playing *The Sims* during his EFL classes.

Raquel

Concerning the tests scores, Raquel's results have had an increase peak regarding the correct answers in the post-test, with the number of 17 correct answers. Prior to that, in the pre-test, she answered correctly 12 activities, while in the delayed post-test she had a score of 14. Graph 4.11, below, displays Raquel's scores in all three tests applied. What is interesting to note is that the number of correct answers and answers left blank are quite complementary: when one would decrease, the other would increase. This has happened to other participants as well. However, the number of incorrect answers has ascended constantly from one test to the other. This may mean that Raquel may have tried to answer activities she felt more familiar or comfortable with, because she decided to try answering them - instead of leaving them blank (with no answers). It is paramount to remember that I, whenever possible, reminded the participants to leave blank all activities they did not know or were not sure how to answer properly.

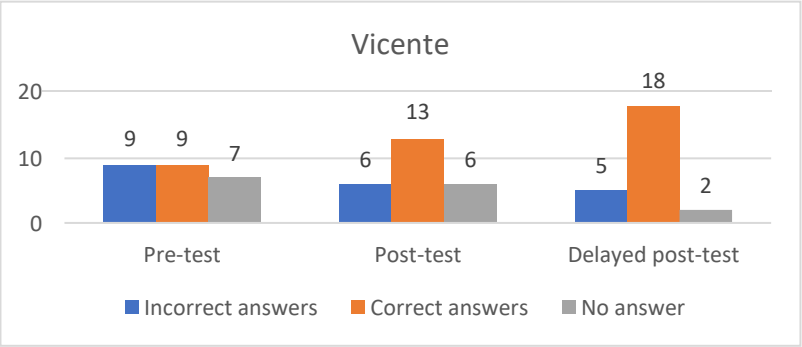


Graph 4.11: Raquel's pre-test, post-test and delayed post-test scores

Through my observations of Raquel in class during gaming sessions and her emotional scales (in the first two tests, Raquel checked "okay", while in the last one, she checked "good"), it seems possible to state that this participant learned English mostly guided by her motivation to play the game *The Sims* with her colleagues. She was really motivated, smiling, showing satisfaction through facial expressions. All in all, even though Raquel's scores have changed throughout the tests, she seems to have remained motivated to keep playing the game.

Vicente

With respect to Vicente' test results, it can be noticed that he had continual growth in terms of correct answers. In matters of comparison, taking the pre-test and delayed post-test scores, Vicente developed positively in terms of 50% throughout the gaming sessions, with 9 correct answers in the pre-test and 18 in the delayed post-test. Both the rates of incorrect answers and answers left in blank followed a decreasing shift, opposite to the number of correct answers.



Graph 4.12: Vicente's pre-test, post-test and delayed post-test scores

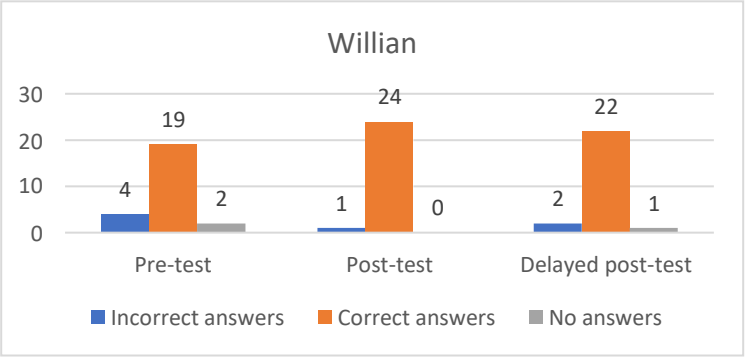
As the graph above illustrates, he managed to develop his learning (of lexical items) skills. Whenever possible, Vicente would comment on their game choices and options available with other colleagues-participants. The results demonstrated that this participant may have had a good time while learning lexical items present in the game context.

With regard to his emotional scale applied at the end of each test, Vicente checked the 'okay' box for the pre-test, while in both final tests, he checked the 'terrific' box. Maybe the participant was more willing to answer the post-test and delayed post-test questionnaire. These good emotions and mood of his are relatable to his increasing scores in memorization and acquisition of vocabulary items, as can be seen in graph 4.12.

Willian

Willian's scores in the tests had been one of the best if we compare the scores of all participants. While Willian managed to keep his scores of correct answers one of the highest for this research, he also managed to keep low the scores for answers that had been incorrect and left in blank. This shows that that he might have learned while gameplaying *The Sims*. In the pre-test, Willian answered properly 19 activities, and this states that he had already previous knowledge of the game environment and lexical items, as he later mentioned in his interview. Besides that, the number of incorrect answers dropped by half if we take the pre-test and the delayed post-test into comparison, going from 4 to 2 in the final test. Even with some small variation in the post-

test, the left in blank answers have remained the same in the first and last test applied to participants.



Graph 4.13: Willian's pre-test, post-test and delayed post-test scores

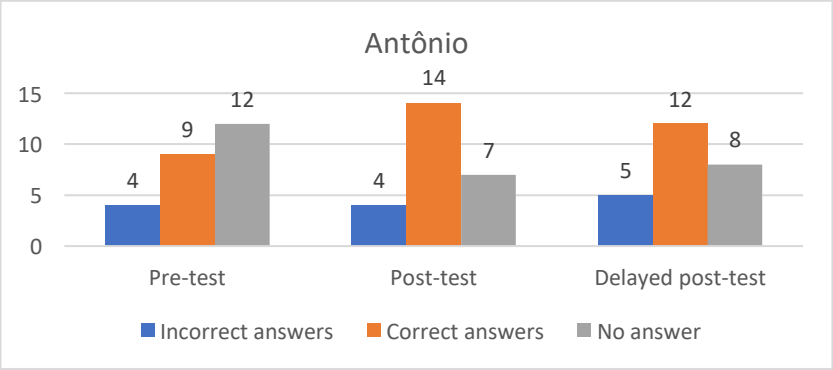
It seems plausible to state that Willian has retained lexical items in English throughout gaming sessions, although he had already previous knowledge concerning most of them. This can be seen in graph 4.13 above. Furthermore, as he later mentions in the qualitative data analysis, he stated that digital game playing, such as playing *The Sims* in an EFL classroom environment can be truly beneficial, especially if the associations among the images and the written tasks displayed in the game are explored.

Antônio

With respect to Antônio's scores for the pre, post and delayed post-test, as can be noticed in the Graph 4.14, even though he had a growing peak in the post-test results, his scores for both pre-test and delayed post-test developed and increased during the gaming sessions. Regarding the correct answers number, it started from 9, passing to 14 in the post-test, and ending in 12 in the delayed post-test. In contrast, the number of incorrect answers had been quite stable, shifting from 4 (in the first two tests applied) to 5 in the last test.

Nevertheless, it remains noticeable that the answers left blank diminished considerably from the pre-test in comparison with the post-test, going from 12 to 7. However, in the delayed post-test, this number had already increased again to 8. Some of his incorrect answers, moreover, have remained the same in all tests. For instance, in an activity that asked for the proper selection of the image for '*pants'*,

Antônio checked the image for '*t-shirt*'. Other times, however, his incorrect answers changed and were different in the tests, and he selected other incorrect image for that word. Regarding his emotional scale, Antonio checked "okay" for all test applications.

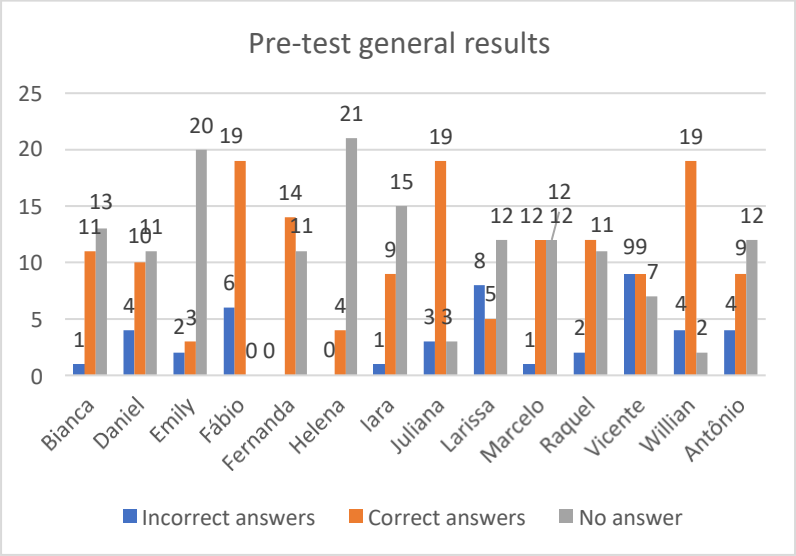


Graph 4.14: Antônio's pre-test, post-test and delayed post-test scores

In a nutshell, it is possible to state that Antônio's test results show that this participant had learned lexical items in EFL during the gaming sessions applied for the purposes of this research.

Concluding remarks of Quantitative Data

In this sub-section, the reader will find graphs that illustrate a general analysis of each quantitative test taken: pre-test, post-test and delayed post-test. This analysis may provide an overall understanding of participants' scores and variation among tests regarding their vocabulary development. In graph 4.15 below, the reader will find the general results of all participants' scores in the pre-test. Regarding the number of correct answers, for instance, Fábio, Juliana and Willian were the participants that scored the most, while Emily and Helena were the ones that scored the least.



Graph 4.15: Pre-test general results of all participants' scores

It is clear from the graph that not all participants shared the same knowledge of the words from the game in English in the pre-test. While there were participants that answered properly a high number of 19 activities (out of 25) – which are the highest scores from this first test applied, such as Fábio, Juliana and Willian, there was also a participant that just answered properly 3 or 4 activities, which is the case of Emily and Helena, respectively. Results from the pre-test data analysis are consonant with the reality of each participant's previous background, since they were beginner learners of English as a foreign language. There were participants that could not find opportunities to learn, use and practice their English knowledge outside IFSC's English classes, while there were others that have had already previous experiences (previous to data collection for the present research) that allowed them to be in contact with this foreign language, such as playing digital games or singing songs in English, for instance.

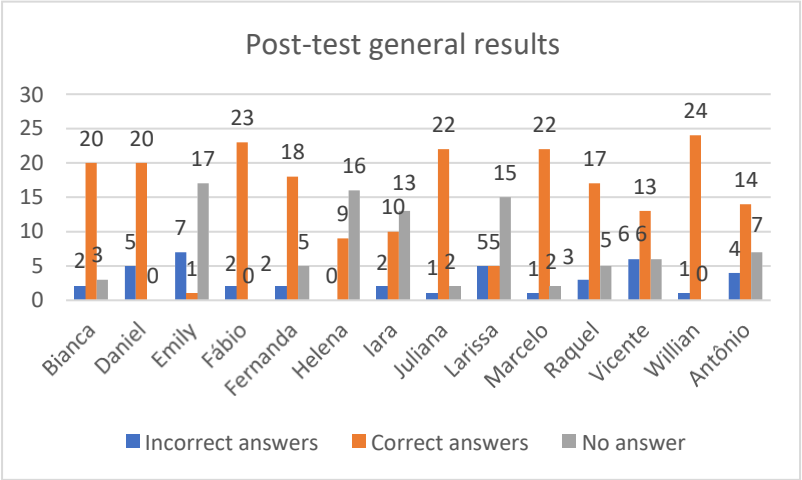
As a general instruction given by me prior and during pre-test implementation, participants were asked not to guess any activity answer or activity alternative that they did not know by any chance. This decision was taken so that participants would answer only the activities which they knew the answer for and were certain about that. Therefore, participants' tests scores would be a more transparent and real source of

comparison for the other tests. This instruction reflects in the test scores of participants such as Fernanda and Helena, that did not have any incorrect answers in the pre-test – either these participants knew and properly answered the activity, or they did not know the answer and left them in blank with no answer.

However, there were also participants that may not have understood the instructions given or that could have thought they have the knowledge of the words asked in the pre-test. This may have happened to cases such as Vicente's. Vicente answered incorrectly 9 activities, which can indicate that he thought he knew those lexical items, but he did not, since he did not manage to answer properly. These participants were mistaken or did not have knowledge of those words and tried to answer them anyways. Besides that, there were also cases where the answers left in blank represented more than 80% of the pre-test scores. This is the case for Emily and Helena, who left 20 and 21 answers in blank, correspondingly, which might indicate they followed the rules and instructions (for the gaming sessions and tests application) and understood them. However, it is important to state that this is consonant to their beginner levels of English.

In general, the pre-test scores indicated that participants' knowledge of English and their proficiency levels were different - there were students that answered correctly more than 80% of the test, and others that left blank the same amount of activities. All in all, the pre-test scores served as a basis for the quantitative data analysis for the next two quantitative instruments, post-test and delayed post-test, in matters of indication and illustration of participants individual learning processes that may (or not) have happened throughout the gaming sessions of *The Sims*.

In regard to the general scores of participant's post-test data, as can be seen in graph 4.16, the number of correct answers increased considerably in comparison to the pre-test. As a matter of example, take individual scores into comparison. In the pre-test, both Fábio and Willian answered correctly 19 activities, while in the post-test, both participants increased their scores to a number of 23 and 24 correct answers.



Graph 4.16: Post-test general results of all participants' scores

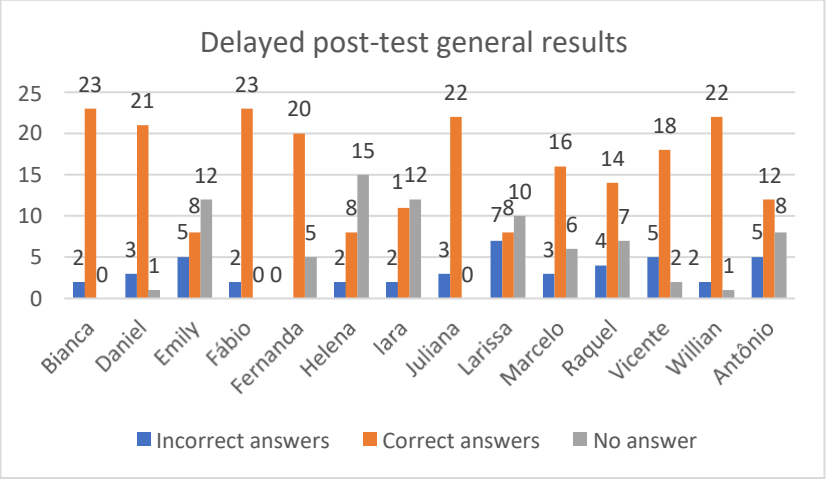
However, there were cases such as Larissa's, where individual scores remained the same. Larissa, for instance, answered properly 5 activities in the pre-test and in the post-test. Nevertheless, there were cases, such as Emily's, where the scores diminished in comparison to the pre-test. In the pre-test, Emily answered properly 3 activities, and in the post-test, this number diminished to 1. These cases will be further discussed based on previously theories and research in Chapter 5 – Discussion.

In general, as Graph 4.16 illustrated, there was an increase in the number of correct answers in the post-test scores. This increase can be interpreted as a positive and beneficial sign of learning lexical items through the use of the digital games *The Sims* as part of classroom activities. The post-test was administered right after the end of the 8 gaming sessions and it showed that the number of correct answers increased in the same way that the number of incorrect or blank answers decreased.

As presented in Graph 4.17, in the delayed post-test general results the number of correct answers reduced slightly in comparison to results of post-test. In consonance, the number of incorrect answered activities slightly increased. There were cases where the number of correct answers continued to increase in the delayed post-test – applied about a month after the last gaming session. This was the case of the participants Bianca, Daniel, Fernanda and Vicente. According to previous research, this later retention may indicate that either

participants learned through deferred imitation or that they may have guessed those answers (Hopper, 2010). Further discussion for their cases will be addressed in Chapter 5 – Discussion of Data.

However, according to some participants' interviews, they reported that they did not guess at any point in the tests applied. The hypothesis, therefore, remains that deferred imitation or later retention may have happened. According to Hopper (2010), deferred imitation is related to the ability to reproduce an action or sequence that were previously witnessed in the absence of current support for the action. In other words, in order for deferred imitation to happen, individuals have to be able to memorize the information and retrieve it later, allowing them to reproduce the behavior – which, in turn, is related to long-term memory.



Graph 4.17: Delayed post-test general results of all participants' scores

Besides, there were participants that maintained the same results for correct answers number. As a matter of example, Fábio answered properly 23 activities both in the post-test and delayed post-test; the same happened to Juliana's scores, which remained the same in the last two tests applied. Their cases will be further explored and discussed in consonance to previous research in Chapter 5.

To sum up, general results for delayed post-test data indicated that some participants learned lexical items more than others. This can be explained through the high number of repetitions and encounter with words allowed by the game, and also through participants' feelings,

flow state and motivation (since *The Sims* allowed different choices in the game that led players to access different levels of lexical items repetition in the game, this could also have played a role). While there were participants that managed to remember more words than in the post-test, there was also the case of participants that remembered the same number of words, while there were participants that remembered fewer words.

On the whole, quantitative results indicate that all tests applied served as a basis for comparison regarding participants individual scores, and that lexical items development happened throughout the gaming sessions, during the period of the research.

Next, the reader will find analysis for qualitative data, considering participants' narrative inquiries and oral interviews.

4.2 Qualitative Data Analysis

In this section, the reader will find analysis regarding 6 participants qualitative data individually taking into consideration each participant's perceptions shared in their narrative inquiries and oral interviews. The narratives were applied in the classroom in Portuguese and were written so that participants could feel comfortable stating their comments on digital gameplaying *The Sims*.

During the first (structured) interview (Appendix 3), it seemed that participants were feeling unwilling to develop further on the topics proposed. Possibly, because of their age group, they may have felt shy to elaborate their thoughts and perceptions, providing short and direct answers, as they were not disposed to talk much. Because of that, I did not feel that it was appropriate to insist on the topics or questions raised, or to keep participants for too much time in the interview situation. It was the end of the semester and they were concerned with other grades and subjects issues. Consequently, I decided to do a second (semi-structured) interview (Appendix 4) after their semester had finished. Even though the second interview focused more on their test scores and memorization, again, participants seemed to be unwilling to expand on their answers and comments as well. Nevertheless, both of the interviews made possible to comprehend deeper the participants' perceptions regarding their vocabulary development during gameplaying *The Sims*, as described and interpreted in this section.

The excerpts here presented have been translated to English. The narrative inquiries of all participants are transcribed here in this section, and for a full transcription of the interviews, the reader should consult

Appendix 5 and Appendix 6. Participants that took part in the qualitative data collection were purposefully chosen following the criteria: they had to play at least 5 or more gaming sessions; and they had to play the game in English at all times.

Bianca

According to her written narrative, Bianca used to play *The Sims* when younger, and she mentioned that she had not played the game for some years (at the time of data collection). Besides mentioning that she learned English through digital gaming, in her text she emphasizes the motivational aspect of playing *The Sims* in the classroom. In addition, her narrative inquiry complements her comments - she has, indeed, retained some vocabulary items throughout playing:

> I started to play The Sims again when this was proposed in class. In the beginning it was easy because I already knew the missions, so I almost didn't have to pay much attention to the words. But as I was advancing in the game, I did not know and then I, so I had…I learned, ….I was learning. I really liked this class activity because if it is something cool it motivates you to study and etc[31].

Quite similar to Bianca's narrative, her interview also mentioned that she felt good by playing the game *The Sims* in the classroom. As discussed in the theoretical background chapter, according to Medina (2005), digital games produce more confidence, motivation and a sense of competence in players because they are learning in context and this is an activity they can master. During her interview, Bianca mentioned that she learned English, mainly the routine and daily actions the game simulates:

> Some words can be learned, as you read [...] challenges or tasks, so, that I didn't have a clue of what to do and [...] so I was learning on my own, so something can be taken out of this, so it is really useful[32].

[31] Comecei a jogar *The Sims* novamente quando foi proposto em sala. A princípio foi fácil pois eu já conhecia as missões então quase não precisei prestar muita atenção nas palavras. Mas conforme fui avançando no jogo, eu não sabia e então eu, eu tive...eu aprendi... e aí fui aprendendo. Gostei bastante dessa dinâmica de aula, pois se for algo legal te motiva a estudar e tal. É isso.

[32] Alguma coisa dá pra aprender, tu vai ler, tipo, eu vi umas coisas que eu não fazia ideia do que era, tipo, desafios ou tarefas, assim, que eu não fazia ideia do

In her second interview, related to memory issues, Bianca appeared to be nervous and quite uncomfortable to answer most questions, constantly touching her hair and/or putting on and taking off her sweatshirt. Besides that, her face also blushed a lot when she would answer the questions. Whenever possible, I would gently smile at her, in an attempt to make her feel as comfortable as possible. When asked if she knew any reason or whether she had used some strategies to remember the words "*to change clothes*" in the delayed post-test, while in the post-test she had not answered that activity, Bianca seemed to be uncomfortable:

> Hum…I think that… When was this test? […] Yeah, I do not know… Because, like…now, I do not know. This has nothing to do with "trocar" [pointing to the test] and I do not, do not… [long pause][33].

Bianca seemed nervous to answer and to explain her reasons. She even appeared to be embarrassed to answer that she may have, eventually, forgotten those lexical items, if that was the case. When asked if she had forgotten those words in the post-test, Bianca remained in silence shaking her head (in 'no' movements) demonstrating embarrassment, blushing and constantly touching her hair and sweatshirt. In order to maintain a comfortable environment, I decided to move on with the questions of the interview, calming the participant down as much as possible, also smiling in an affectionate way at her.

Then I moved on to the next question, telling Bianca that in the post-test, she answered properly the word "*roof*", while in the delayed post-test she answered improperly. Bianca told, then, that she may have felt confused in the delayed post-test due to the time without playing, and also due to the section in the game that showed parts of the house altogether:

> …I do not know. I think I got confused. This is from the house, also, right? [pointing to the word "wall" in post-test] […] I do not know, I got confused. Because in the game there is a session with wall, floor, door,

---

que fazer e daí eu..., então eu fui aprendendo por conta própria, ...pra aprender, então alguma coisa dá pra tirar disso, então é bem útil.

[33] Hum… eu acho que tipo...foi quando esse? [...] É, não sei… porque, tipo agora, não sei. Isso não tem nada a ver com 'trocar' [apontando pro teste], e eu não, não... (participante sinalizava que 'não' com a cabeça).

> altogether, so I think I got confused. […] Like, here, [pointing to post-test, answered properly] I got right because it was fresher, hum...[34]

Besides, later in the interview, Bianca described that in the delayed post-test she may have answered properly due to exclusion of what she considered incorrect answers. All in all, this participant seemed to be really nervous in the second interview, even embarrassed, and could not express her memory skills or strategies, neither relate them to personal experiences or to frequency in the game.

All things considered, both quantitative and qualitative data show that Bianca seems to have acquired lexical items throughout the gaming sessions proposed in this research. As stated by Yudintseva (2015), lexical items repetition and contextual clues, as happened in this research data collection, is an effective strategy to practice and learn vocabulary. Quite important to learning, her affective attitudes showed that she seemed to feel good most of times and that she felt motivation while playing the game *The Sims.*

Daniel

According to his written narrative inquiry, Daniel stated that he had never played *The Sims* previously. Through the game display that inserted characters in context allowing association among images and text, Daniel stated that he learned especially some verbs and jobs, as he exemplifies:

> I already knew the game, but I had never played it, I did not find it cool and I started to play because teacher Carol brought this as an activity in classroom for her doctoral research. She had as objectives that we would learn English by playing the game, and it worked. I learned lots of verbs and several jobs. In the beginning I found it a little bit difficult, and it was, since my English is poor, but it was improving thanks to the images and actions that the characters performed, which were really good. I

[34] Eu não sei,... Acho que eu confundi. Isso é coisa de casa também, não é? [apontando para o teste 2, palavra wall] [...] ... não sei, confundi. Porque no jogo tem uma sessão de parede, chão, porta, tudo junto, então acho que confundi. [...] Tipo, aqui [apontando para uma alternativa assinalada corretamente no teste 2] normalmente eu acertei porque estava mais fresco, hum, sei lá…

> reached the conclusion that in spite of not knowing English it is possible to play digital games and learn with them[35].

In his interview, Daniel mentioned that a positive aspect of gameplaying *The Sims* was the relation image *versus* action, which facilitated acquisition of a foreign language:

> Ah, positive [aspect] is that it worked well with images. [...] Like… the text was in English and I did not understand, but the images helped a lot to see how it works[36].

However, Daniel also mentioned negative aspects of the game, such as the real (non-virtual) hours to get some actions done in the game[37]. For example, if one character is sent to work and his work hours are 8 per day, this character is going to take exactly 8 hours to complete that action[38]. In the game version *The Sims FreePlay*, there is no way to advance to the end of this action in the game, so the player has to wait for that mission to finish to select the next one. However, since data collection happened during class time, this was not a possible thing to do. Besides that, Daniel also mentioned the lack of stable internet connection in the classroom environment as a negative aspect:

---

[35] Já conhecia o jogo, mas nunca tinha jogado, não achava muito legal comecei a jogar porque a professora Carol trouxe como atividade de sala para fazer seu projeto de doutorado. Ela teve como intuito que a gente aprendesse inglês jogando o jogo, e deu certo. Aprendi muitos verbos e várias profissões. No começo eu achei um pouco difícil, e foi, já que meu inglês é muito fraco, mas foi melhorando graças às imagens e às ações que os bonecos faziam, que eram muito boas. Cheguei à conclusão que mesmo não sabendo inglês é possível jogar jogos e aprender com eles.

[36] Ah, positivo é que ele trabalhava bem com as imagens, tá ligado? Tipo, o texto tava em inglês e o cara não entende, mas as imagens ajudam bastante a ver como que é que se faz.

[37] This does not happen in the paid versions of the game *The Sims*. In these versions, the game virtual hours pass more quickly than the real (non-virtual) time.

[38] Since the participants had more than one character in the game, they could play and interact with the other characters while one of them was completing a task that took too much time. During the gaming sessions, I constantly guided participants to have characters do different tasks and different activities in the game, so that they would not remain without tasks to play in the game during the gaming sessions and data collection.

> And also the negative [aspect] is that it takes too long, like…going to work takes 12 hours, 20 hours... [...][39].

In general, besides negative aspects such as school's poor internet connection during some minutes in the gaming sessions, Daniel was one of the participants with best quantitative scores in comparison to other participants. He managed to improve continually the number of properly answered lexical items in the tests, as previously mentioned in this chapter. Regarding his continuous evolution even after the gaming sessions ended, Daniel attributed his good results to the game repetitive and frequency characteristics. In fact, as previous research (Nation, 2014; Laufer, 2017) shows, repeated and frequent exposure enhance learning opportunities.

Besides that, when asked to mention some words from the game in English, he was one of the participants that still remembered them to be mentioned:

> […] *bathroom*, *take a shower* (sic), as I told you, there was '*buy*' that meant buying things, there were…. furniture and home appliances I don't remember very well. There was *change clothes* (sic)[40].

In the second interview taken, Daniel described that through the gaming sessions, he could learn a lot and improve his communication skills in English as a foreign language:

> I learned…because my English now is good, it is better, much better than before. I did not know much and after I started to play I started to evolve, you know?[41]

Besides, Daniel reported that he still remembered lexical items from categories such as house appliances, furniture, and others. Daniel

[39] E também o negativo é que demora demais, tipo ir trabalhar demora 12 horas, 20 horas. Aham…Daí tem que parar de jogar, né, porque não tem mais o que fazer [no jogo]. E…A internet também às vezes era ruim né? Era impossível jogar.

[40] Sei lá, tipo, bathroom, take a shower, como eu falei, tinha buy que era comprar as coisinhas lá, tinha ah….do resto, dos móveis e eletrodomésticos eu não lembro muito bem. Tinha change clothes, trocar de roupa.

[41] Eu acho que aprendi, porque tipo, meu inglês agora tá bom, tá melhor, bem melhor do que era antes. Eu não sabia nada e depois que eu comecei a jogar eu comecei a tipo, dar uma evoluída, sabe?

also mentioned that his memorization of lexical items was better right after the gaming sessions, and that in the moment of the interview, he could no longer remember as much as right after playing *The Sims*. When asked about the increase of correct answers in the delayed post-test, he said he did not remember why or how he could do better in the delayed post-test. Either way, he mentioned he was sure to have not guessed the answers. According to Daniel, this is his natural learning process.

> I did not guess, really. As I told you, I was evolving, you know?[42]

Similar to other participants, Daniel got confused when checking the proper image correspondent for "hand washing", checking an image that contained feet instead of hands (in the test activity). According to him, this happened because of the similar spelling of those words. For him, these words have similar spelling and this is confusing. In addition, those actions – take a shower, wash hands, etc. – happened in the same room in the house: the bathroom. The same hygiene environment, in that case, could have hindered the proper association of the words with the proper characters actions, especially because the actions were always linked, appearing one after the other usually.

> Ah, like…Yes, because they are similar, right? Like, in the game I had to put the character to take a shower, *take a shower* [sic], and I did not remember…hum… [long pause][43].

Moreover, as a last question, I asked Daniel whether he could have learned the word "*bathroom*" by playing *The Sims*, since in the pre-test he checked the incorrect activity alternative, and in the last two tests he checked the proper answer for that word. Daniel then told me that he did not know this word previously to gameplaying *The Sims* and that now he had learned that word. In fact, he reported creating his own learning strategies to remember more easily:

> *Bathroom* [sic]…I remembered that bedroom is *bedroom* [sic], and it does not make sense because *bath* [sic], because *bed* [sic] is *cama* [sic], you

[42] Não, eu não acho que chutei, não mesmo. Como falei, fui evoluindo, sabe?
[43] ...ah, tipo, é, porque é parecido, né? Tipo, no jogo tinha que colocar o boneco pra tomar banho, take a shower, e tipo, eu não lembrava, e…. hum... (pausa longa)

> know? *Bath* [sic] I associated with bathroom, easier to remember, right? To separate *bedroom* [sic] and *bathroom* [sic][44].

To sum up, Daniel was one of the participants with better results for the purposes of this research in terms of higher correct answers scores. Still after months without playing *The Sims*, he managed to remember some words in English and reported them to me in the moment of the second interview.

Helena

In her narrative writing, Helena mentioned that she had learned some new words while playing *The Sims* in English, even though they are considered a small number by the participant.

> I started to play The Sims in the classes of English [...] In the beginning I didn't like it so much, but then over the time I was adapting myself to the game and to the instructions in English. I learned some new words, such as *bathroom* and *firefighter*. This learning method called my attention because I could connect learning and a present device to most people nowadays: the cellphone[45].

In her narrative text, Helena mentioned that her interest and adaptation to the game increased during gameplaying *The Sims*. The more she played, the more she felt motivated. Besides, although she mentioned she had learned just a few words throughout the gaming sessions, she managed to give examples in her text, which can be considered a positive aspect of her learning process, since producing or reproducing lexical items is one of the final stages of learning new words (Melka, 1997; Hatch & Brown, 1995). Helena mentioned that she enjoyed linking the learning of English to the use of cellphone in the

[44] Bathroom... eu lembrei que quarto é bedroom, e não faz sentido bath porque bed é cama, sabe? E bath eu associei com o banheiro, mais fácil pra gravar, sabe? Separar bedroom e bathroom.

[45] Eu comecei a jogar *The Sims* nas aulas de inglês, no qual a professora nos propôs participar de uma pesquisa do seu doutorado. No começo não gostava tanto, mas como eu passar do tempo fui me adaptando ao jogo e as suas instruções em inglês. Aprendi poucas palavras novas, entre elas estão bathroom e firefighter. Esse método de aprendizagem me chamou bastante atenção, pois consegui conectar o ensino e um objeto tão presente para a maioria das pessoas hoje em dia: o celular.

classroom environment, since, as she claimed, is so ubiquitous nowadays.

In her interview, Helena mentioned she found positive and negative aspects of playing *The Sims* in the English as a foreign language classroom. Regarding the negative aspects, she mentioned her own cellphone conditions. On the other hand, Helena mentioned that the game dynamics is considered a positive aspect, since all actions can be decided and modified in the game according to the players' taste - the houses, the characters, and the city as a whole:

> And a positive [aspect] is that the game is really dynamic, we can build houses, create characters and this is really nice[46].

As Helena stated by the end of her interview, it can be considered that the learning outcome of playing *The Sims* during class time was rewarding not only in terms of lexical items, but also on motivational skills:

> Ah, I think a suggestion is to continue these new methods to learn English because I think this is really cool, really nice, interesting[47].

In a second interview, focused to deal with memory issues, Helena mentioned that she still could remember some daily routine activities from the game, such as *wash hands, take a shower, sleep*. When asked about why she thought she remembered more those words rather than others, she went reflexive:

> … [pause] Ah, I do not know…like, maybe this was because I had more contact with those kinds of activities, I believe this is it[48].

According to Helena, therefore, she remembered more easily the words such as "to wash hands" than "to take a shower" because her

---

[46] Ah, negativo eu acho que é….porque meu celular trava muito. Ele trava muito e aí o jogo acabava travando e aí eu acabava me estressando porque eu tinha que desligar de novo o celular pra conseguir jogar. E um [aspecto] positivo é que o jogo é bem dinâmico, dá pra montar casinhas, criar personagens e isso é bem legal.

[47] Ah, eu acho que uma sugestão é que continue estes novos métodos de ensino pra aprender inglês, porque eu acho que é muito legal, bem bacana, interessante.

[48] Ah, eu não sei...tipo, talvez tenha sido por ter mais contato com esse tipo de atividade, acredito que tenha sido isso.

characters used to do those action frequently. Later in the interview, Helena reported that she learned and remembered the word "to eat" in the post-test; however, in the delayed post-test, she could no longer remember it because she had stopped playing. In this case, according to her, frequency was important to keep those words fresh in her memory.

In addition, Helena described that those activities (in the test) where she had to check or match words relating them to images were easier to her.

> Yeah, with the drawings and matching were easier to remember […] yeah, I think that having images or matching [activities] are easier to remember[49].

Therefore, the association between image and written text / action was beneficial not only during the gameplaying sessions, but also during the test application for her.

Besides motivation stated in Helena's narrative text and interview, in the classroom, while playing *The Sims*, I observed that Helena felt really motivated and concentrated in the game environment, smiling while playing. As previously mentioned in Chapter 2, motivation can trigger learning for EFL environments (Yudintseva, 2015). In sum, Helena was a motivated participant. She described and exemplified lexical items she learned due to playing *The Sims*, and how this was a fruitful experience for her.

Marcelo

As stated in his narrative writing, Marcelo had already played *The Sims* earlier in his life, but in Portuguese. Even though Marcelo really enjoyed playing *The Sims* in English for this research purposes, for him, it had been a challenge. In his narrative, Marcelo mentioned that acquiring the game knowledge in terms of jobs, missions and objectives triggered the will and motivation to learn new vocabulary items. Marcelo concluded that multimodality and associations among images and written text, such as in *The Sims*, can trigger and enhance language learning opportunities. As stated by Guichon and Cohen (2016), multimodality maximizes learning opportunities. Similarly, this was mentioned by the participant in relation to his experiences:

[49] É, com os desenhos e de assinalar é mais fácil de lembrar. [...] É, eu acho que ter figurinhas ou ser de assinalar lembra muito mais do que escrever.

> I started to play The Sims when the teacher presented the proposal and objectives to play. I had previous experience with the game because I used to play as a kid, but only in Portuguese, so playing it in English was a big challenge, but over the time I liked the idea. By playing the game, I got to enrich my vocabulary in English, besides understanding the game perspectives, either for creating several different characters, for getting jobs, doing characters perform daily activities, etc. I reach the conclusion that the game helped me in one of the most difficult things for me in my academic life, so I really liked the experience and I intend to keep playing in English, either The Sims or any other game, because the images and the entertainment helped me in understanding the language[50].

During his oral interview, Marcelo also mentioned that playing *The Sims* in the classroom was really motivational, since it is not a typical activity. Also, he mentioned positive and negative aspects of the game for him and his learning process of English. As a positive aspect he mentioned the associations among images and text; and as a negative one, he mentioned the time that the characters take to complete missions or activities. This has been a negative aspect mentioned by other participants as well, although nothing could be done about this issue. Below, the reader may find the interview excerpts with Marcelo's thoughts explaining his perceptions:

> [...] We are used to notebooks, texts, etc., but this different dynamic with the game I found it really interesting. [...] Positive [aspects] are mainly the images, the entertainment there that helps to see the characters performing actions. This really helps a lot, either in the language, in all of that. And negative [aspect]... mainly the time it takes to complete the

[50] Comecei a jogar *The Sims* quando a professora apresentou uma proposta e objetivos com o jogo. Eu já tinha alguma experiência com jogo, pois ele fez parte da minha infância. mas eu só tive ligações com o game quando estava em português, desta forma em inglês, foi um desafio e tanto, mas que com o tempo fui gostando da ideia. Com o jogo consegui enriquecer um pouco meu vocabulário em inglês, além de entender ainda mais as perspectivas do jogo, seja no criamento [sic] de vários personagens diferentes, obter profissões, fazer os personagens realizarem trabalhos do cotidiano etc. Chego à conclusão que o jogo me ajudou em uma das coisas que eu tenho mais dificuldade na minha vida escolar, portanto gostei muito da experiência e pretendo continuar jogando em inglês, seja The Sims ou qualquer outro jogo, pois as imagens e o entretenimento com o jogador ajudam no entendimento da língua.

> actions in the game; either in the jobs, or to do simple things like to plant and to go to the bathroom and this takes hours…[51]

Besides that, Marcelo mentioned that *The Sims* triggered his motivational skills, largely because it has helped him to learn English as a foreign language. In the second interview, Marcelo mentioned some words he had learned through digital gaming *The Sims* – even after some months without playing:

> Some examples of when we were going to build the houses, *bedroom* [sic], *door* [sic], door because we built parts of the house and doing those improvements, whatever, and I think that this change from the first to the second, of the second [test] being the better is because this was, like, really present in our lives…[52]

Moreover, as Marcelo mentioned in the excerpt above, he believed that he had answered properly more lexical items in the post-test because they were active in his memory in comparison to the delayed post-test, and this is why his quantitative data scores are higher. Right after the gaming sessions, lexical items were more easily accessed in his memory, so, it is more likely that he could manage to remember the words in order to complete the tests.

> In this part we were more focused on the game and I think this is the reason why there was an improvement[53].

---

[51] ...a gente sempre está acostumado com caderno, tal, textos...mas essa essa dinâmica diferente com jogo achei bastante interessante. [...] [Aspectos] Positivos...Principalmente as imagens, o entretenimento ali que te ajuda a ver os personagens fazendo aquilo. Isso tudo ajuda muito, seja na tua linguagem, seja em tudo isso. E [aspecto] negativo… principalmente o tempo das coisas que demora muito para fazer cada coisinha no jogo; seja na profissão, seja para simplesmente plantar e ir no banheiro e isso demora horas...

[52] Alguns exemplos, tipo, quando a gente ia construir a casa, e tal, *bedroom*, *door*, a porta, porque a gente ia construindo as partes da casa e fazendo aquelas melhoras, tipo, e tal, e eu acho que essa mudança do primeiro pro segundo, do segundo ser o melhor, é porque, porque isso tava, assim, bem vigente na nossa vida…

[53] Essa parte eu acho que a gente tava bem mais focado no jogo e eu acho que por isso teve essa melhora.

Furthermore, Marcelo described that there were some words he learned in the game due to their frequency and repetition of exposure. It is the case for the word "*to build*":

> The word *to build* [sic], that I do not know how to pronounce [participant laughs], it was there in the house construction, and so, and that helped when I answered the tests[54].

What can be inferred from his comment is that repetition and frequency of lexical items have helped him in his learning process. When asked to explain the reason why he remembered the word "*to buy*" in the post-test, and not in the delayed post-test, Marcelo described that he took advantage of lexical item repetition and frequency in the game, and he also related to his previous private experiences:

> To buy [sic] I could relate to games in English, and buy [sic] means to buy, right, and we used that word a lot […]. The game helped a lot with these basic needs, you know, these simpler words, because we even joked with each other in the street, about being able to do those simpler things, that the game helped. We also related at home, also, sometimes with other games or any movies, that first we could not understand a thing from the actors, and so, and we could relate more[55].

Therefore, according to Marcelo, he could relate the vocabulary from real-life to the ones displayed in the game. Also, the fact that there were repetition and frequency of lexical items have helped him learning English vocabulary. Altogether, Marcelo learned lexical items in English by playing *The Sims* during his EFL classes.

---

[54] A palavra to build, que eu não sei pronunciar (risos), ela tava presenta na hora de construir a casa e tal, e isso ajudou na hora de responder no segundo e terceiro teste.

[55] Olha, to buy eu consegui relacionar com os jogos em inglês e buy é comprar, sabe, e a gente escreve direto essa palavra [...]. Uma coisa que o jogo ajudou foi ajudar nessas coisas básicas, sabe, essas palavras mais simples, porque daí a gente até brincava um com o outro ali na rua e tal, sobre conseguir fazer essas coisas mais simples, que o jogo ajudou. E também a gente relacionava em casa também, às vezes com outros jogos ou com qualquer filme, por exemplo, que a gente não entendia simples palavras dos atores e tal, e a gente conseguia relacionar mais.

Raquel

In her narrative text, Raquel mentioned that she did not know for sure to state or assess her learning outcomes with gameplaying *The Sims*. This is similar to her test results that changed from test to test. However, Raquel mentioned that her interest in the game increased throughout the gaming sessions.

> In the beginning when the teacher talked about the game I thought it would be boring. I had already heard of it, and the idea to stay in the classroom playing The Sims in English (I really hated English) was not a thing that pleased me. However, I don't know if it is because I started to like the game, [...] I became addicted to keep playing it. I confess that I don't know how to assess if I learned more with the game, but I liked it a lot[56].

During the gaming sessions, Raquel had been one of the participants that had shown more interest to play the game and to comment on her choices with her colleagues and friends, whenever possible. According to Derakhshan and Khatir (2015), digital games are advantageous and effective in learning vocabulary largely because they are motivating. In her interview, Raquel mentioned that the best of playing *The Sims* had been the associations she could make between images and the characters' actions and tasks, such as building houses and buying house decoration materials. In the first interview, she even mentioned that this was an important and positive aspect of this research:

> Positive is that, for example, it allows that association between the action text and the image, because for example, if only the action text appeared… […] I would not be able to understand. And then the image...there are all those things of the images. For example, you will

[56] No começo quando a professora falou do jogo eu achei que seria chato, já sabia da existência dele, e a ideia de ficar na sala jogando The Sims em inglês (eu realmente detestava inglês) não era uma coisa que me agradava. Porém não sei porque comecei a gostar dele (talvez tenha sido por causa da professora incrível que estava dando a aula), e mais, fiquei viciada, sempre que tinha internet começava a jogar. Confesso que não sei avaliar se com o jogo aprendi mais, mas eu gostei tanto que tenho até agora The Sims no meu celular, e ainda jogo.

> build a house, and then you build it, and then you look for the door, etc., I really enjoyed that[57].

In the second interview, which was related to her memorization skills, when asked about a mistaken answer in the pre-test that was later answered correctly in the post-test and delayed post-test, Raquel claimed that *The Sims* had helped her in learning some words she interacted with the most:

> I think in the first test I tried to associate with *shorts* [sic], you know? I tried... but later [in the post-test] it was because of playing the game, because I had to change clothes, and then I answered correctly[58].

According to Laufer, (2017), the more input and the more repetition the learners are exposed to, the better it is for the learning process. This happened to Raquel, since the input she was exposed to by playing *The Sims* might have created learning opportunities for her to learn words such as "*t-shirt*", as previously mentioned by the participant. However, the same did not happen to words such as "*workplace*" and "*to watch*". In regard to the word "*workplace*", that Raquel left in blank in the first two tests and answered properly in the delayed post-test, she reflects and explains:

> Hum... wait [long pause]. I think that here [pointing to the delayed post-test] I, I.... got right [...] I tried to associate work and place, you know? Then I associated and I remembered. I think here [pointing to the post-test] my mind went blank, I did not remember[59].

---

[57] [Aspecto] positivo é que, por exemplo, ele faz aquela associação com o nome e a imagem, por que por exemplo, se fosse só o nomezinho não é…(pausa) [...] ...eu não conseguiria entender. E aí tipo a imagem...tem todo aquele negócio da imagem. Por exemplo, tu vai construir uma casa, aí tu constrói a casa, daí tu vai lá e procura o negócio da porta, e tal… aí eu gostei bastante disso.

[58] Eu acho que no primeiro eu tentei associar com short, sabe? Aí eu tentei... mas depois foi por causa do jogo mesmo, porque tinha que trocar de roupas, e tal, e aí eu acertei.

[59] Hum....Eu acho, então, que porque aqui [apontando pro teste 3] eu acertei...eu não, eu não lembrava mesmo e deu um branco [apontando pro teste 2] e aqui eu tentei associar o work com trabalho e place com lugar, sabe? Aí eu fiz essa associação e já consegui lembrar. Acho que aqui [apontando pro teste 2] deu um branco mesmo, e eu não, não lembrei.

As can be read in the interview excerpt above, Raquel explained that in the delayed post-test she remembered the word "*workplace*" by associating the isolated words to form the compound word. In that case, her memorization skills were used in terms of association memorization, where the participant associated the word in the test with her previous knowledge of English.

Besides that, another unexpected result from her scores and interview was the fact that Raquel learned the word "*to watch*" by making the incorrect association with the image in the game. In the pre-test, Raquel left in blank the activity that requested the corresponding word in Portuguese for "*to change*". However, in the post-test and delayed post-test, she incorrectly checked the option "*to watch*". When I asked if she had guessed the word, she answered:

> I…in fact I thought it was *trocar* [sic] really. Maybe I associated improperly at that time that… most things I learned it was from the game, ok, and maybe I associated wrong here. Because it had the words, right? To watch tv and to change clothes. But I thought it was to change! [participant laughs] Because I thought "to change" was *chance* [sic] or something like that[60].

Interestingly, Raquel also associated improperly the word "*roof*" with "*wall*". The participant, thus, recognized in the interview that she associated the words mentioned before incorrectly. However, it is important to mention that both the words "*to change*" and "*to watch*" happened inside the house created by the participant, in the characters' leisure time, sometimes one asked during missions that took place/were required right after the other. The same happens with the words "*roof*" and "*wall*", that appeared in the game in the same structural building options for the house, sharing many times the same color options for the participants to choose, making them quite similar to each other. A possible explanation, then, is that the participant associated improperly the word with the game option due to their similarities and proximity in the game tasks or options.

Besides that, during the interview, Raquel remembered other words in English that she had learned by playing *The Sims*:

[60] Eu…. na verdade, eu achava que era trocar mesmo (risos). Talvez eu tenha associado errado na hora que.a maioria das coisas que eu aprendi foi com o jogo, né, e talvez eu tenha associado errado aqui. Porque tinha né? Assistir tv e trocar de roupa. Mas eu achei mesmo que era trocar! (risos) Porque eu achei que to change era chance ou alguma coisa assim.

> Take a shower [sic] I really never forgot because my character always asked to take a shower [participant laughs]. […] like…he asked a lot to take a shower, and then I ended up learning this and now I know[61].

In that case, the participant reported that she remembered the words "*take a shower*" due to frequency and repetition. Previous studies (Gee, 2009; Nation, 2011; Yunditseva, 2015) have already mentioned that the higher the repetition and frequency rates, the higher the probabilities of learning lexical items.

Even though Raquel's scores have changed throughout the tests, she remained motivated to keep playing the game, especially because the more a learner has contact and frequency of encounters with the target language, the more likely the learning it is to take place (Laufer, 2017). Through my observations of Raquel in class during gaming sessions and her emotional scale, it seems possible to state that this participant learned English mostly guided by her motivation to play the game *The Sims*.

Willian

In his narrative writing, Willian mentioned that he had already played *The Sims* prior to this research gaming session, and that his experience in digital gaming had been positive in terms of learning English. In addition, he claimed that the associations between images and written text displayed in the game might increase learning opportunities not only for him, but for all players:

> I already knew the game The Sims, I used to play in my aunt's computer. [...] I believe that through the experience of playing digital games (as in the present experience) stimulates and allows the learning of English. Resources such as the action text described in English result in understanding related to the image, action and words. The content with this kind of experience allowed the expansion of my vocabulary. However, learning demands practice and repetition. The end of the

[61] [...] é tipo take a shower, acho que isso foi o que eu realmente não esqueci, porque pelo menos o meu boneco sempre pedia pra tomar banho (risos). [...] É, porque tomar banho, né… [...] É... tipo, é que ele pedia muito pra tomar banho, aí eu acabei, tipo, gravando isso e agora eu sei.

> gaming sessions resulted in my forgetting most words I saw, but there is a word […] "*claim*" that means *reivindicar* [sic][62].

In his oral interview, Willian mentioned again that the associations among images and written commands presented in the game may be beneficial for learning EFL and can be considered a positive aspect of the game playing. As a negative aspect, Willian mentioned the internet connection that would sometimes bother him while digital game playing:

> [...] we have always heard of people that play digital games and when they do so in English, they end up learning a little bit more, because there is the association of the images with the commands, and then this ends up facilitating the association of what the word means or the action that it is representing. [...] In the case, The Sims encourages reading in English so that we can go forward in the game, which has a non-academic objective, or getting through the year, I don't know. […] So, positive [aspect] is the learning through the image and game commands associations.[63]

---

[62] Eu já conhecia o jogo *The Sims*, eu jogava no computador da minha tia. Mas devido a proposta da professora que consiste em uma pesquisa para seu doutorado sobre aprendizado da língua inglesa através de jogos eletrônicos, voltei a jogar The Sims este ano. Acredito que a experiência com os jogos eletrônicos textualizadas em inglês (presente experiência) estimula e proporciona o aprendizado da língua inglesa. Recursos como associação de ações do game descritas em inglês resultam no compreendimento [sic] da ação relacionando imagem, ação e a palavra. O conteúdo com este tipo de experiência ocasionou na ampliação do meu vocabulário, entre tanto, aprendizado exige treino / repetições. Com a falta disso resultou no esquecimento de boa parte das palavras que vi, mas há uma palavra que acabei procurando no dicionário para saber sua tradução: "claim" que significa reivindicar.

[63] [...] a gente sempre ouviu falar das pessoas que jogam e que tem um contato com jogos eletrônicos e que quando tá em inglês, acabam aprendendo um pouco mais, porque tem a questão de associar as imagens aos comandos, e daí acaba facilitando a associação do que a palavra quer dizer com o significado dela ou com a ação que ela está representando. [...] No caso do *The Sims* estimula a leitura em inglês para poder avançar no jogo tem um objetivo a mais sem ser acadêmico, ou passar de ano, sei lá… [...] Então, [aspecto] positivo que eu acho é o aprendizado através da associação da imagem com os comandos do jogo. O aspecto negativo seria mais do ambiente onde a gente tá praticando essa atividade. Seria a internet.

In the second interview, Willian mentioned again that he already had good knowledge of the words from the game, mainly because he had already played *The Sims* previously.

> Yeah, I had some previous knowledge, and with the images it got clearer and easier[64].

In addition, most activities Willian answered correctly were the ones that he had options to be checked or matches to be done, while the activities with writing – translating or writing the correspondent words in English or Portuguese - were left in blank, in majority. The participant reported, thus, that writing is his major difficulty in regard to learning English, which is consonant with his scores in the quantitative tests: he answered properly more activities where words could be matched (among options available in the activity), for instance, than activities where participants had to produce language by writing.

Besides that, Willian left the words "*take a shower*" in blank in the delayed post-test, while in the first two tests he answered it properly. According to him, he remembered those words due to their frequency of appearance in the game:

> Ah, so, I probably had to send the character take a shower, *take a shower* [sic]. I think [in the delayed post-test] I did not remember the words, you know? *Shower*, *take* [sic], both. [...] It was a long time ago. The more you play and read the words, the easier it becomes to remember them[65].

William mentioned that frequency and repetition of words were beneficial to his learning process. This is consonant to the literature in the area, which stated that more encounters with words result in better learning outcomes (Laufer, 2005). In the delayed post-test, in which the participant could not remember the words that he answered properly in the previous two tests is consonant to the idea that recently acquired lexical items are easier to be remembered (Nation, 2011; Laufer & Rozovski-Roitblat, 2014) in tests such as this research. Also in the last interview, William described a word that he remembered due to its

[64] É, eu já tinha uma noção, e com as imagens ficou mais fácil saber qual que era.
[65] Ah, então provavelmente era porque tinha que mandar o bonequinho tomar banho, take a shower. Eu acho que é porque eu não lembrei do nome, tipo, shower. Ou do take. Ou dos dois. [...] Então fazia tempo mesmo…quanto mais joga e mais vê a palavra, mais fácil é de lembrar.

frequency of appearance: "*to claim*", similar to his narrative text. "*To claim*" appeared daily so that players could claim a prize in money to help characters to raise funds to buy more decorations items or to build their house rooms.

All in all, it seems possible to state that Willian has retained/learned lexical items in English, although he already had previous knowledge concerning most of them. Furthermore, he stated that digital game playing, such as playing *The Sims* in an EFL classroom environment, can be truly beneficial, especially if the associations between images and written commands displayed in the game are fully explored.

In this section, I presented qualitative data from 6 participants. The participants were purposefully sampled due to some criteria, previously presented. Qualitative data collection and analysis consisted of a a) narrative text, where participants could write their perceptions and opinions regarding the use of *The Sims* for learning vocabulary in the EFL classroom as part of curricula; b) a structured interview, taken right after the delayed post-test, so that participants could assess their learning opportunities of English through digital gameplaying; and c) a semi-structured interview where participants could assess, explain and/or comment on their memorization and learning regarding their individual data or any other thought of their gameplaying activity.

In general, qualitative data indicated that participants' knowledge of English progressed or developed with the aid of playing *The Sims*. Many participants could still remember some words they had learned in the game even 6 months later, mainly because of repetition frequency or due to their association with their personal lives. There were some positive aspects mentioned by participants, such as the game display that allowed associations between words and actions or images and motivation elicited by the *The Sims*.

Even though participants have mentioned some negative aspects[66], the positive aspects elicited from the game represent a majority in their comments. They mentioned the game have helped them learning new words because they could relate to those routine

[66] There were some participants that mentioned some negative aspects that may have influenced their gameplaying experience. For instance, internet connection was unstable during some minutes in some gaming sessions, or the actions in the game context that took many hours to be completed, and they had to wait a few minutes to continue playing and finish missions and tasks.

experiences, that is, they were really close to their own daily life. In addition, the association among the written text and images and actions in the game helped players to understand the meaning of lexical items in context. Also, the repetition of those actions, images and written text were mentioned by most participants as a game characteristic that was beneficial for their learning of lexical words. Besides, all these characteristics triggered motivation and emotional states that led to a flow state, allowing players to be immersed and enjoy the use of *The Sims* for learning and developing vocabulary items in the classes of English at IFSC.

Next, I present the analysis for quantitative and qualitative data of participants that did not follow one or more of the instructions stated by me. For each case, discussion and analysis were made taking into consideration participants' individual characteristics.

4.3 Data Analysis of Participants that did not Follow Instructions for Gameplaying

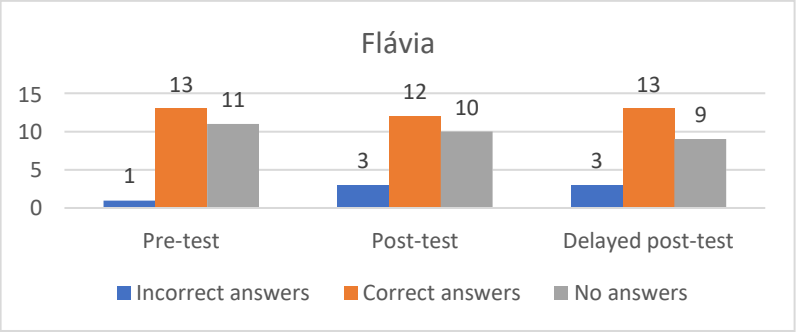
In this section, I present and discuss data analysis from a total of 5 participants that did not follow one (or more) of the instructions given for gameplaying sessions. Even though the instructions given, these participants did not follow one or more of them, and they are presented individually in this section. Before participants accepted participating in this research, they received (orally, in Portuguese) a set of instructions that included the following: they had to play the game in English at all times; they had to play *The Sims* without the use of dictionaries or translators; and they should stop playing *The Sims* after the last gaming session in class. At the time, all participants understood and agreed on the instructions, but some of them did not follow them, for different reasons.

Therefore, in this section quantitative and qualitative analysis are discussed taking into consideration pre-test, post-test and delayed post-test scores, narrative texts and structured and semi-structured interviews. Analysis is divided by each participant so that their data can be analyzed taking into consideration their individual differences, experiences and scores. Participants that attended the interview as part of qualitative data collection were purposefully chosen following the criteria previously discussed in Chapter 3 - Method.

Flávia

Flávia's data is analyzed in this section since she mentioned in her narrative inquiry that she used to look up any unknown words from the game in dictionaries and translators. Even though she did this, contrary to the instructions given by me, she did play more than 5 gaming sessions, so she was part of both quantitative and qualitative data collection and analysis.

Flávia's score is one of the most stable (with fewer changes) along with the tests results if compared to other participants of this research. The correct answers did not change in terms of the pre-test and the delayed post-test scores, with the number of 13 on both; her scores only slightly diminished in the post-test, going down to 12 correct answers. This may mean that she already knew the words from the game, since her scores remained the same in the pre and delayed post-test. As she states in her written narrative, she already knew some of the lexical items of the game - either by reading them before in the game or by learning them in previous learning experiences. On the other hand, the number of incorrect answers increased in 2 comparing the pre-test and the delayed post-test scores. In the same comparison, the very similar happened with the 'no answers' analysis, that decreased in number of 2 lexical items left blank. Her scores can be read in graph 4.18.



Graph 4.18: Flávia's pre-test, post-test and delayed post-test scores

However, comparing her post-test and her delayed post-test results, it can be noticed that Flávia, when completing the last one, might have tried answering some questions that were left unanswered in the post-test. Some answers were answered correctly, such as "*wall*:

parede", but others were answered incorrectly, such as "trocar: *to watch*". This attempt in trying to answer properly (instead of leaving them unanswered) may coincide with her emotional scale in those test applications dates, since she checked the 'good' and 'great' boxes. As stated by Chik (2014), motivation is one of the keys to develop autonomy, and in turn, autonomy is identified as one of the key elements to facilitate learning through digital gaming. In this case, Flávia might have felt confident and autonomous, so she tried to answer the activities, although this was not a recommendation.

In her narrative writing, Flávia mentioned that she had already played *The Sims*, but for this research gaming sessions she played the game in English for the first time. As a result, she encountered some difficulties, especially with the new words, and then she resourced herself going for a dictionary assistance. Al-Jifri and Elyas (2017) claimed that by referring to a dictionary or a translator, the player is completely involved with English and is improvising their own techniques in understanding and learning the language. Therefore, using dictionaries in digital games playing can be seen as an autonomous strategy for learning English (Al-Jifri and Elyas, 2017). However, it is paramount to remind the readers that dictionaries were not allowed during game play, in an attempt to have only *The Sims* as input for vocabulary learning for this research. Although participants were arranged in a big circle and I was constantly passing among them to check if the instructions were being followed, Flávia managed to use the dictionary anyways during the gaming sessions. In her narrative text, Flávia mentioned that she made use of a translator[67] whenever needed and that this strategy helped her:

> I had already played The Sims before teacher brought it to us in the classroom, I really liked it, but I have not played in English. In the beginning it was really complicated, I had to go to Google Translator many times, or in others I just knew where the options I wanted were. Looking up for the meaning of words helped me to learn English, I that

[67] Translator is seen as a tool used for the same reasons than dictionaries, mainly used online or in apps. Similar to dictionaries, it displays collections of words, their definitions, etymology, slangs, acronyms, etc., being a reference containing a vast number of words and information about them. Therefore, in this research, translators and dictionaries are considered the same in the sense that might hinder participants scores in the tests applied prior and after gaming sessions. Nevertheless, I recognize their features go beyond than those explored in this study.

> do not know absolutely anything of English. I have already practiced English in the app *Duolingo* but I believe that The Sims helped me more. I really liked the project[68].

When asked in her interview, Flávia stated that besides having a low-quality internet connection most of the time, by simply playing *The Sims* in English, she felt learning can happen by digital gaming.

> The negative [aspect] is the wi-fi that not always worked. And the positive [aspect] ... I do not know... I really liked the game, but I don't know a positive aspect that called my attention. Just the English there that helped a lot. [...] If the person makes efforts they can learn [...] So, my memory is really bad. And then I went there to play, searched the meaning of the words, but I don't remember, you know? Like, I know that there was a *bombeiro*, but I don't remember the translation. What it showed there I don't remember almost nothing. [...] I liked the game, but I think we should get more time[69].

Flávia did not enjoy the real time required to complete the game actions and missions present in this free game version as well. In addition, she claimed that she has faced forgetting issues, and that this may have hindered her learning processes, which, in turn, correlates with her test scores.

Furthermore, as one of the participants that played the game in the classroom for 5 or more gaming sessions, Flávia was purposefully chosen to participate in the interviews. In fact, in the first interview,

---

[68] Já tinha jogado *The Sims* antes da professora trazer com atividade para aula, gostava muito, mas nunca tinha jogado com o idioma em inglês, no início foi bem complicado, tive que várias vezes consultar o Google Tradutor, ou algumas apenas sabia o lugar onde era a opção que queria. Mas eu procurando o significado ajudou a aprender um pouco de inglês, eu que não sei absolutamente nada de inglês. Já pratiquei inglês pelo Duolingo mas acredito que o *The Sims* tem me ajudado mais. Gostei muito do projeto.

[69] O negativo é o wi-fi que nem sempre ela funcionava. Dependia do tempo. E o positivo...sei lá...eu gostava bastante do jogo, mas não sei um ponto positivo que chamou muito muito minha atenção assim. Só o inglês ali que ajudava muito (risos). [...] Se a pessoa...se a pessoa se esforçava muito dava pra aprender. Tudo que ela lia e ia no tradutor. [...] Assim, minha memória é muito ruim. E daí eu ia lá [jogava], pesquisava o que significava a palavras...mas eu não lembro, sabe? Tipo, eu sei que tinha bombeiro, mas eu não lembro a tradução de bombeiro. O que aparecia lá eu não lembro de quase nada. [...] Eu gostei do jogo, mas eu acho que precisava de um tempo maior.

Flávia reported that after a while (three weeks in this data collection) without playing, she could not remember some words:

> I think I cannot remember any [word], in fact. Like, if I read the word, from the game, I can remember and translate, but like this, to know by heart, I cannot remember! [participant laughs][70]

In addition, when asked about her correct answers in the post-test compared to delayed post-test, Flávia mentioned that, due to little time after playing *The Sims*, she was better in the first rather than in the latter. For instance, in the post-test, Flávia answered properly the correct description for "*to buy*" and "*to build*", while in the delayed post-test she left those in blank. This can be seen as a quite expected process to happen, since the lesser (or non-existent) the frequency and repetition of lexical items, the lesser and probability to keep them memorized (Nation, 2011; Laufer & Rozovski-Roitblat, 2014; Yudintseva, 2015). Regarding this issue of frequency, Flávia mentioned that the word "*roof*", for instance, was not learned because she did not change or build this part of her characters' house. Therefore, she had not seen that word in the game and could not have learn it.

> I did not even change the roof […].[71]

On the contrary, the lexical item "to eat" that she had learned in the game could be remembered because she read the lexical item frequently and constantly in *The Sims*, besides relating that word to her private life:

> I think it is like this… to eat is something is more common to what I do, I… as an underage, it is easier to eat…in games… to read 'to eat'[72].

All in all, the use of a translator dictionary during gameplay might have not favored Flávia's learning process. Although dictionaries and translators are helpful tools for learning languages, it seems that they did not help Flávia to memorize more lexical items than she

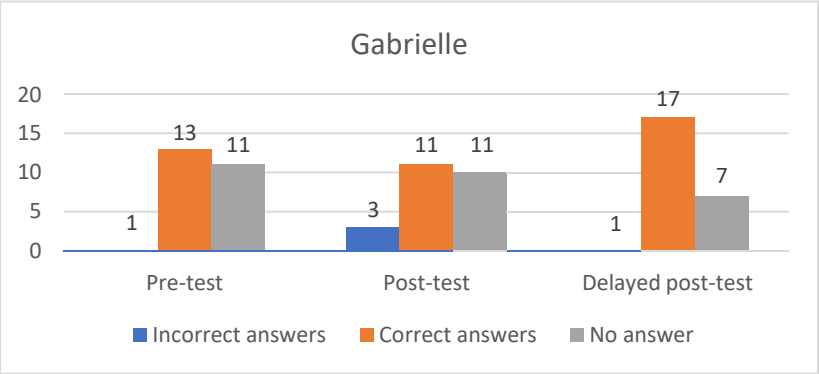
[70] [...] acho que não lembro de nenhuma [palavra], na verdade. É que assim, seu ver a palavra, do jogo, eu consigo lembrar e traduzir, mas assim, de cabeça, não consigo lembrar (risos).
[71] É que eu nem cheguei a mudar o telhado.
[72] É que eu acho que assim... comer é algo mais comum que eu faço, eu... menor de idade, é mais fácil comer..., em jogos online, ver 'comer'.

already would without them. Although the translator may have helped Flávia momentarily in her search for lexical items translation meanings during the gaming session, her test scores, however, were not outstandingly better than any other participant that did not use a dictionary or a translator.

Gabrielle

Gabrielle's data is analyzed in this section due to two reasons, because: she 1) made use of dictionaries / translators during gaming sessions, and 2) she kept on playing *The Sims* after the post-test. Even though she did not follow two of the instructions given, she did play more than 5 gaming sessions, so her quantitative and qualitative data were analyzed, considering she might have some contributions to be acknowledged.

In Gabrielle's tests scores, it is noticeable that the number of correct answers increased in the same way as the number of incorrect answers had decreased. These results are seen as complementary, since while one increases, the other decreases. This can be interpreted as beneficial and positive for learning processes since the number of correct answers increased in the number of 4 if we compare the pre-test and the delayed post-test. While the number of correct answers increased, the number of incorrect answers had its peak in the post-test, with a number of 3. Notwithstanding, the number of incorrect answers can be considered quite low if we compare her scores to other participants', between 1 and 3 throughout the pre, post and delayed post-tests. Besides, the number of answers left blank in the tests decreased continually, going from 11 in the pre-test to 7 in the delayed test. Graph 4.19 illustrates Gabrielle's scores below.



Graph 4.19: Gabrielle's pre-test, post-test and delayed post-test scores

If we compare Gabrielle's tests scores with her narrative writing, it is noticeable that the number of lexical items learned can be relatable and noticeable to her, since she mentioned she had learned some words in English by playing the game *The Sims*, exemplifying them:

> When teacher Caroline told us that we would play The Sims I was really excited because I already knew the game and liked it a lot. From the moment that we started to play in English, I felt a great difference and difficulties arose in understanding the options, but it was of great importance for my learning; little by little I could understand better with the help of images and dictionary use. I learned new words such as *workplace, firefighter, lamp, park* [sic], among others that I do not know how to spell but I know their meaning. I think it was really fun to include the game in the classroom, it is a way to learn by playing, it does not get exhausting and boring. Being motivated to do tasks or even to come to classes is difficult, but this dynamic helped a lot. I got very much

> interested in the game so I downloaded it on my computer and now I am playing in English to learn even more[73].

Even though she made use of dictionaries from time to time, Gabrielle felt that it was rewarding to keep learning and playing *The Sims* at the same time. As mentioned previously, dictionaries use can allow players to continue immersed in English while playing digital games (Al-Jifri and Elyas, 2017). In her interview, Gabrielle mentioned that she felt the need to look for some words in the dictionary because she had more time to read lexical items more carefully in the game, and this was considered by her a memorization strategy. Unfortunately, according to her average scores, it seems that making use of dictionaries did not help her as much as she thought it would.

In her interview, Gabrielle also claimed that the associations between images and words being displayed in the game have helped her learning process. Lastly, Gabrielle narrated that she had been motivated to keep playing *The Sims* in English even outside the classroom:

> I had already played it some years ago. [...] Yeah, but then I downloaded it on my computer because it is better. And it is in English. Yeah.[74]

Besides, she mentioned she preferred to create the characters always relating them to people she already knew – family and friends, for instance, and this was a highly motivating aspect for her.

All things considered, in Gabrielle's case it seems that the frequency of repetition helped as much as the use of dictionary, according to her test scores. In the delayed post-test she properly

---

[73] Quando a professora Caroline avisou que iríamos jogar *The Sims*, fiquei muito empolgada pois já conhecia o jogo e gostava muito. A partir do momento em que começamos a jogar The Sims em inglês já senti uma enorme diferença e dificuldade em entender as opções, mas foi de grande importância para o meu aprendizado, aos poucos eu fui conseguindo entender melhor com a ajuda de ilustrações e o auxílio do dicionário. Aprendi novas palavras como workplace, firefighter, lamp, park e entre outras que não lembro como se escreve mas sei o que significa. Achei muito divertido a professora trazer o jogo para sala de aula, é uma forma de aprender brincando, não fica gastante [sic] e chato. Ter motivação para fazer tarefas ou até mesmo vir para aula às vezes é difícil,mas com esta dinâmica de aula ajuda muito. Eu me interessei muito pelo jogo em inglês e baixei no meu computador e estou jogando em inglês para aprender mais.

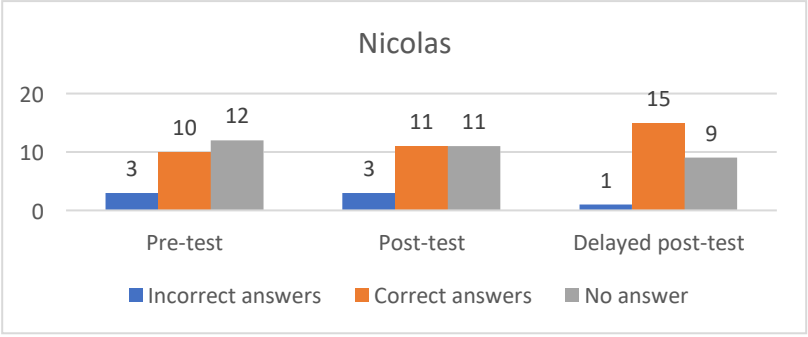
[74] Eu já joguei uns anos antes. [...] Aham, mas daí baixei no computador porque é melhor. E tá em inglês. Sim.

answered more activities than in any other previous test, which might indicate that dictionary use may have assisted during her learning process. This might, in turn, indicate that frequency of repetition and exposure to a lexical item can, indeed, contribute to learning and memorization, as in her particular situation.

Nicolas

Nicolas' data was analyzed in this section because he made use of dictionaries during gaming sessions. Regarding Nicolas's quantitative scores, the increase in the correct answers number if we compare the pre-test, post-test and delayed post-tests is noticeable. In the pre-test, Nicolas answered correctly 10 activities, while in the delayed post-test this number increased to 15. Associated to a growing number of correct answers, the number of both incorrect answers and answers left in blank decreased, going from 3 to 1 in the former, and 12 to 9 in the last. This might be considered a positive outcome from gaming sessions, since Nicolas's learning scores were continually increasing.

Associated with his learning outcomes, Nicolas varied his answers in the motivational scale between 'good' and 'great' in all tests applied. According to Ramos (2015), the frequent exposure to repeated lexical items seems to have great impact on vocabulary learning, consonant with the participant's scores, since repeated exposure in situated contexts is the key to form associations and, therefore, learning.



Graph 4.20: Nicolas's pre-test, post-test and delayed post-test scores

Illustrated in graph 4.20, Nicolas's positive tests scores can be easily linked to his narrative writing. In his narrative, Nicolas stated that although he had faced some software-based issues in his cellphone in

the last gaming sessions, he managed to learn lexical items in English. Moreover, Nicolas claimed that the experience of digital gameplaying during class time has transformed learning in a more fun and enjoyable process:

> With the game The Sims I got to acquire several different experiences and words in English, and also the class also was more pleasant and dynamic with the game, because it helps the students' learning. That way, students learned to identify daily activities in the game. I confess that I really liked, but unfortunately my cellphone memory system was full, and I had to exclude the game in the last week, but fortunately I got to associate daily activities in English […][75].

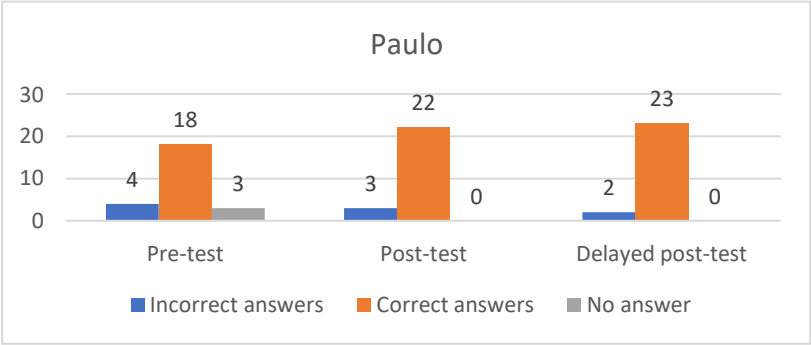
Nicolas also mentioned that he had made use of a translator / dictionary program when he felt the need or when the associations among images and written text were not enough for his complete understanding of a lexical item. According to previous research (Chik, 2014; Al-Jifri & Elyas, 2017), this can be seen as an autonomous learning strategy that some participants took while playing the game in English as a foreign language, even though they were instructed to not use dictionaries. Generally speaking, if we consider Nicolas' scores of correct answers, dictionary use seems to have greatly helped him memorizing lexical items during his learning process.

Paulo

Paulo's data is analyzed in this section because he made use of dictionaries during gaming sessions, and he kept playing *The Sims* after post-test application. Paulo has had a good outcome regarding the correct answers since the first test applied, which was the pre-test. This may mean that Paulo already had knowledge of some of those words retrieved from the game and used in the tests. If we compare the pre-test scores to the last test applied, delayed post-test, it can be noticeable that

[75] Com o jogo *The Sims* consegui adquirir diversas experiências e palavras em inglês, e também a aula ficou mais agradável e dinâmica com o jogo, pois auxilia no aprendizado dos alunos, sendo assim os alunos aprenderam a identificar ações do dia a dia em inglês. Confesso que gostei muito, mas infelizmente o armazenamento do celular encheu e tive que excluir o jogo na última semana do jogo e felizmente consegui associar funções do dia a dia em inglês, embora existam algumas frases difícil de traduzir mas quando acontecia algo desse tipo eu recorrer ao Google Tradutor.

his number of correct answers increased while the number of both his incorrect answers and answers left in blank decreased. Scores from all of his tests can be seen in Graph 4.18:



Graph 4.21: Paulo's pre-test, post-test and delayed post-test scores

In his motivational scale checkbox, Paulo answered his state as being 'good' in the pre-test, while in the last two tests, he chose the 'great' box. Therefore, it seems safe to state that their tests scores and his emotional state had been consistently together, revealing that he felt great while he managed to answer the highest number of activities in the last tests. In addition, the same analysis can be made from this narrative writing.

In his narrative, Paulo said that he had already played *The Sims* previously to the gaming sessions. In addition, he mentioned that he did not want to install *The Sims* at first[76]. However, during the initial gaming session, Paulo seemed to realize that playing in class would be profitable for his learning and downloaded *The Sims* in his cellphone later that same gaming session. After this initial resistance and during the first gaming session, Paulo had been one of the most active and communicative participants during the gaming sessions: he really enjoyed talking to colleagues about his gaming choices and showing them his city constructions.

[76] Paulo did not want to download the game at first (contrary to what his parents have signed and he had agreed), although he did (on his own) anyways in that same first class and data collection day, as previously accorded between us and consented by his guardians / parents.

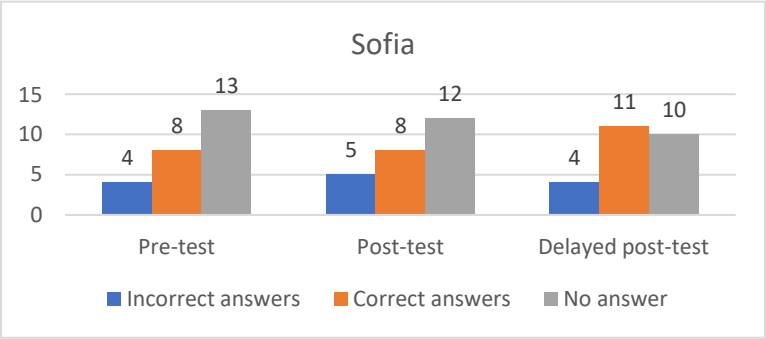
> I started to play The Sims in my cellphone due to the class activity, I had already played the PS2 version, so I already knew most words and the game helped me to remember them. I remember that in the start I did not want to install the game because it was too heavy, but then I installed it and it was worth it because I really liked playing it – I still play it nowadays. I have several characters, I am in level 25 (*twenty-five*) [sic] and I am also really rich. Nowadays in the game I am saving *money for build a car* [sic][77].

Besides a positive and fun experience for Paulo, playing *The Sims* for learning purposes have helped him, mainly because he tried to write some words in English in his narrative text, as he was stating his point that he had learned English after all. It seems that Paulo enjoyed playing *The Sims* on his own, especially because he used dictionary to help him when needed and he kept on playing the game even afterwards the gaming sessions have ended in class. Although this can be read as an autonomous learning strategy, it was not instructed by me. However, Paulo's constantly growth in the test scores seem to state that dictionary use may be involved in his learning process.

Sofia

Sofia's data is analyzed in this section because she made use of dictionaries / translators during gaming sessions. Also, she kept on playing *The Sims* even after the post-test application. Sofia's tests scores have shown stable results, with the number of correct, incorrect and answers left in blank showing slightly different scores taking into comparison the pre, post and delayed post-tests. In the pre and post-test, Sofia answered 8 correct answers, increasing her number by 2 in the last test, totaling 10 correct answers in the delayed post-test.

[77] Eu comecei a jogar *The Sims* no celular por causa da aula, eu já havia jogado a versão de PS2 então eu já sabia bastante de palavras e o jogo me ajudou a lembrar. Lembro que no começo não queria instalar o jogo pois era muito pesado, mas depois acabei instalando e valeu a pena pois gostei muito do jogo tanto que jogo até hoje, tenho vários personagens, tô no nível 25 (twenty-five) e sou rico também. Atualmente no jogo estou guardando money for build a car [sic].



Graph 4.22: Sofia's pre-test, post-test and delayed post-test scores

As can be seen in the graph above, the number of incorrect answers had remained quite similar for all tests, having its peak in the post-test. This is common since the post-test had been applied right after the gaming sessions have ended. According to the literature in the area (e.g. Nation, 2014; Laufer, 2017), 7, 8 or more repetitions of lexical items can lead to higher chances of vocabulary learning. Towards the answers left blank, they had been continually descending, which can be considered an aspect of the learning process, since, in this case, it shows a tentative process of getting the words correctly answered.

In addition, the answers left in blank remained pretty much the same throughout the tests, and they had been usually the activities that demanded written production of lexical items by the participants. For instance, participants had to write the corresponding words in English for "*plantar tomates*", which had been one of the earliest missions in the game after the characters have just bought their houses.

In her narrative writing, Sofia mentioned that she had really enjoyed playing *The Sims*, especially due to the game immersive context that allows the players to make associations among images and characters actions. As previously stated by Gee (2005; 2009), learning vocabulary in context is indeed more beneficial, motivational and insightful for learners. Also, Sofia stated that the characters that she created in the game had been all inspired by her family and friends, which can be motivational. As stated by Squire (2006), making correlations to real life experiences can motivate learners to keep playing a digital game such as *The Sims*. In addition to trying and making associations, Sofia claimed that she made use of dictionaries when necessary because, according to her, this would help in the memorization of words:

> I liked the experience of playing The Sims because the images helped to know in which context the word was in. My characters I did according to my family members. Sometimes it was difficult to understand the meaning of the words, so I looked them up in the dictionary, and this helped me in my memorization and to learn English. I really liked this experience because besides playing a cool game in English, I was learning English. So I will keep playing it! [...][78]

Altogether, Sofia's test results and narrative writing showed that she might have learned English lexical items throughout this research's gaming sessions. Although she was not instructed to do that, the use of dictionary was made with the primarily intention of helping her in the memorization of lexical items, and seems to have worked for her learning process. Besides that, her mood shifted from 'okay' to 'good' in the emotional scale, stating her enthusiasm in the activities and her interest in keep playing *The Sims* even after the gaming sessions proposed, as she stated above. Sofia was motivated enough that she kept on playing the game even after the post-test application, which, in long terms, can be even more beneficial for her learning of vocabulary.

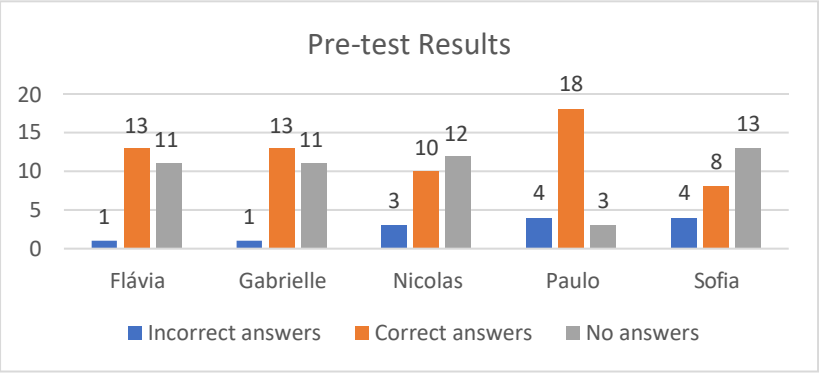
Concluding Remarks of this Section

In the previous section, I presented quantitative and qualitative data from 5 participants that did not follow the instructions given for gameplaying sessions. Similar to previous analysis in this chapter, analysis was divided by each participant so that their data could be analyzed taking into consideration their individual differences, experiences and scores. In the present section, a more generalized discussion will be held concerning participants scores for those that did not follow one or more instructions given.

To start the report of this section, participants' quantitative scores are displayed in the graphs below and discussed in the next paragraphs. In Graph 4.23, participants' scores in the pre-tests are

[78] Eu gostei da experiência de começar a jogar *The Sims*, pois as imagens ajudavam a saber o contexto de que a palavra se tratava. Meus personagens fiz de acordo com a minha família. Em certos momentos foi difícil entender o que significava a palavra, aí eu ia no dicionário, e essa parte de procurar o que se tratava ajuda na memória e principalmente a aprender o inglês. Gostei muito dessa experiência pois além de estar jogando um jogo legal estaria aprendendo em inglês. Portanto vou continuar a jogar!

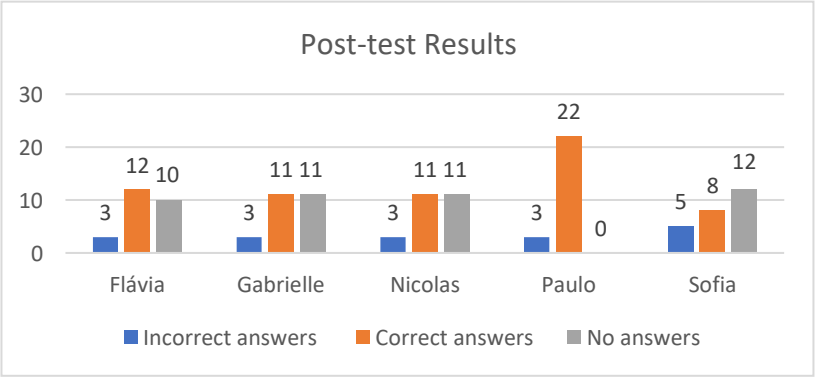
presented. As can be seen, participants' knowledge of English is different among participants.



Graph 4.23: Pre-test general results of participants' scores (for the ones that did not follow one or more instructions for gameplaying)

In the pre-test, for instance, Paulo answered properly much more words than Sofia: while he properly answered 18 activities, Sofia answered 8 (out of 25). Nicolas' scores in the pre-test show that he left more answers in blank in comparison to incorrect or correct answers. Gabrielle and Flávia, on the other hand, answered correctly the majority of the pre-test activities. As previously stated in this chapter, the pre-test scores served as a basis for comparison in relation to the other two tests applied after gaming session and will be further reported in the next paragraphs.

Post-test results for the participants that did not follow one or more instructions for gameplaying *The Sims* are displayed in Graph 4.24. What stands out from the graph below is a) the number of correct and blank answers that are, in general, evenly leveled, for most participants; and b) Paulo's scores, which remains the highest among participants considering his correct answers, and his zeroed score for 'no answer'.

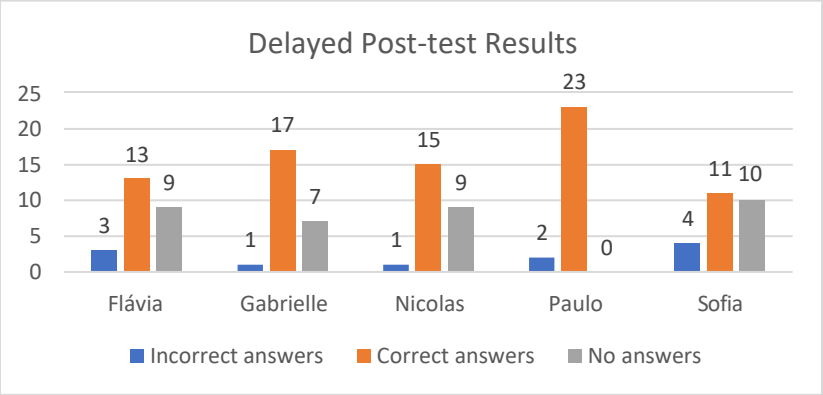


Graph 4.24: Post-test general results of participants' scores (for the ones that did not follow one or more instructions for gameplaying)

In comparison to their pre-test scores, both Flávia and Gabrielle diminished their correct answers number in the post-test, applied immediately after the last gaming session. Flávia diminished from 13 to 12, while Gabrielle diminished from 13 to 11 correctly answered activities. Considering that both participants made use of dictionary, this is quite unusual, since research indicates that the use of dictionary can be beneficial for learning foreign languages. Further discussion regarding dictionary use will be held in Chapter 5 – Discussion of Data, from the perspective of their use for learning purposes.

Paulo's and Nicolas' scores increased in comparison to their scores in the pre-test, while Sofia's scores have remained the same between the tests. For the case of the first-mentioned participants (Paulo and Nicolas), this situation was quite expected, since growth of vocabulary development was established by previous research due to frequency of repetition. The higher the number of repetition, frequency and exposure to the lexical items, the higher the learning rates become (Nation, 2014; Laufer, 2017).

Nevertheless, in comparison between post-test and delayed post-test, participants scores concerning correct answers number increased. All participants increased their scores in the delayed post-test, as can be seen in graph 4.25 below. Paulo was the participant who managed to score the highest number of correct answers, 23 out of 25. The greatest growth, however, was also achieved by Nicolas: in the pre-test, he scored correctly 10 correct answers, while in the delayed post-test, this number increased to 15.



Graph 4.25: Delayed post-test general results of participants' scores (for the ones that did not follow one or more instructions for gameplaying)

Concerning the number of blank answers, all participants maintained it in a decreasing line. This can be seen as a sign of learning attempts, since participants were instructed not to guess their answers, and to answer the test activities whenever they knew the answers. In general, all participants diminished the scores of blank answers, fluctuating between 3 and 4 the number of decrease. Flávia, for instance, in the pre-test left 11 blank answers, while in the delayed post-test diminished this number to 9 blank answers. This may mean that the participant learned more lexical items throughout the gaming sessions, which is shown in the test applications.

What stands out in the delayed post-test scores and in the quantitative data, however, is the fact that the number of correct answers continued growing even after the gaming sessions have ended. It is important to remind the reader that this section deals with participants that did not follow one or more of a set of instructions established prior to the gaming sessions. This way, their good scores are acknowledged and linked to dictionary / translator use. Besides that, both Gabrielle and Paulo also continued playing even after the last gaming session proposed by this investigation. Therefore, their scores have remained the highest among this section's participants, which hypothesizes that a continuous gameplaying situation would lead to more frequency of input that would lead to more memorization of lexical items.

At the same time, qualitative data indicated that, in general, participants' knowledge of English progressed or developed with the aid of playing *The Sims* in spite of their dictionary use or continuous

gameplaying. Many participants could still remember some words they had learned in the game, mainly because of repetition frequency and number of encounters with words, due to their association with their personal lives, or even due to their dictionary use. Although participants made use of dictionary, they did not mention if this resource helped them or not in their learning processes. Finally, it is assumed that the participants who continued to play *The Sims* after the post-test did that because of their motivation and willingness to keep playing a game they found joyful, fun and that allowed them for opportunities to learn English through images and action associations in context.

4.4 Summary of the Chapter

This chapter addressed data analysis in three main sections. The first section considered individual scores in quantitative tests applied for 14 participants. The second section approached 6 participants' qualitative data in terms of comments and highlights shared in their narrative inquiries and on both structed and semi-structured interviews. In the third section, an analysis was done considering participants who did not follow one or more instructions. As a general rule, all participants' data were analyzed separately so that their vocabulary development could be discussed contemplating their highlights, perceptions and individual characteristics.

In the next chapter, discussion of possible interpretation will be held regarding data analysis presented so far. Data discussion is divided in three sections: the first one attempts to answer the research questions; the second section presents concluding observations about data discussed; and the third section summarizes the chapter.

CHAPTER 5 – DATA DISCUSSION

That's really one of the things I love about video games.
It's a whole new world every time you start.
Jennifer Hale

This chapter discusses possible interpretations of the data analysis presented in Chapter 4 – Data Analysis. For organizational purposes, this chapter is divided in three sections. The first section attempts to answer the research questions of this investigation, highlighting the main analysis aspects to support the main ideas defended in this doctorate research; the second section presents concluding observations regarding data discussed; the third and final section summarizes the chapter discussions.

5. 1 Research Questions Answered and Commented

In this section, the research questions of this investigation are answered and discussed to assert the main findings proposed, which consisted in the argument that vocabulary development in EFL through digital gameplaying *The Sims* may happen within classroom settings. In order to guide this study, there were three research questions asked, and they are answered in this section, numbered as (1), (2) and (3) for textual organization purposes. However, this does not mean that the answers have clear-cut boundaries, since they might be intertwined with one another in certain aspects. All answers are based on participants' scores (in the tests) and on their comments, perceptions and thoughts (from the narrative inquiries and both interviews) regarding their experience while playing *The Sims* with the purposes of vocabulary development.

Firstly, this study investigated (1) whether and to what extent the digital game *The Sims* can assist vocabulary learning in English as indicated by the pre-, post- and delayed post-tests participants scores. Considering that participants were all beginner students of English, their scores showed continuous growth in the rate of correct answers. For most participants, the major growth happened between the pre-test and the post-test. This may indicate that, for those participants, learning may have happened via memorization of vocabulary items available in the game *The Sims*.

This is the case of the participant Bianca, for instance, who answered properly 20 activities in the post-test, and 23 in the delayed post-test, after the gaming sessions have ended. As mentioned in

Chapter 2 – Theoretical Background, digital games allow WM and LTM to work in association to make the acquisition of new lexical items easier and richer (through the WM and LTM phonological loops). After a learner has noticed new lexical items, they go through WM, and, if repetitive and meaningful for them, these lexical items will go through LTM. This memory association, therefore, would result in learning.

Besides the memorization processes aforementioned, another factor that might have led to her growth in answering activities properly is known as deferred imitation, an ability to reproduce a previous content or action in the absence of current perceptual support (Hopper, 2010). As presented in Chapter 2, through deferred imitation, individuals are able to retain information and recall it later (Hopper, 2010), such as in this research's case. In this case, Bianca's lexical items knowledge may have continually increased by deferred imitation in the absence of digital gameplaying *The Sims*.

Still another possibility or factor that might have led participants in this continuous vocabulary growth is the Piagetian[79] assimilation and accommodation. In accordance with Bodner's (1986) work, adaptation "or equilibration in Piaget's model has been described as an internal self-regulating mechanism that operates through two complementary biological processes: assimilation and accommodation" (p. 873), while assimilation may happen in the course of a lifetime: "We assimilate the world in the sense that we come to see it in our way" (Bodner, 1986, p. 3). This might be the case of Bianca, Daniel, Emily, Fernanda, Iara, Larissa and Vicente, who answered more activities properly in the delayed post-test than in the post-test, applied at the end of the gaming sessions.

As previously presented in this dissertation, assimilation occurs in the course of a lifetime, where new information merges with previous knowledge, while accommodation occurs when the learner realizes that the triggered activity does not give the expected result anymore (Bodner, 1986, p. 3), becoming 'accommodated' or adapted to that situation. In this sense, the participant Bianca, for instance, would assimilate and accommodate in a later period the new acquired lexical items from the gameplaying, although the trigger may not be clear (and was not an objective of this research to investigate that). This might be the case of Fernanda, Larissa, Nicolas, and Vicente, who acquired continuously

[79] Although Piaget did not study or investigate linguistic aspects of learning, the author has indicated that knowledge structures can take some time to assimilate and accommodate new knowledges or new information.

growing scores. Other than that, there is also the self-regulation processes (constructed from internal organization) that take a role in vocabulary development in EFL. Self-regulation would derive from an adaptation of problems and functions in the process of equilibration, as a sequence of active compensations that accompany external changes (Ferreira, 2003). There seems to be, therefore, more than one hypothesis that attempts to explain Bianca, Fernanda, Iara, Larissa, Nicolas, Sofia, Vicente, Gabrielle and Paulo that can be found in the literature. Their continuous growth in the number of lexical items retained even after the end of the gaming sessions can be explained either through memorization skills and attention to lexical items, deferred imitation or through assimilation and accommodation. However, it was not this research objective to state or measure which one of the previous hypotheses was decisive and conclusive for these participants' scores throughout data collection and analysis.

In addition, during data analysis, cases such as Emily, Flávia and Gabrielle appeared, where their scores diminished in the post-test in comparison to the pre-test. Taking Emily's case for analysis, in the pre-test, she answered properly 3 activities, while in the post-test, this number diminished to 1. Possible hypotheses for participants' cases such as these is that they a) may have guessed those lexical items in the pre-test and have not learned them or remembered their guesses in the post-test; or that they b) may have forgotten new words recently acquired in the game due to 1) lack of interest or lack of motivation (Medina, 2005), 2) lower (not to say inexistent) frequency and number of encounter with words from the game (Laufer, 2017), 3) lower (not to say inexistent) involvement with vocabulary available in *The Sims* (Laufer & Hulstijn, 2001; Laufer, 2017), 4) lower emotional involvement linking digital gameplaying with perceptions, cognition and emotions (Shinkle, 2008), among other 5) personal and memorization issues and reasons.

In regard to the general scores of participant's post-test data, the number of correct answers increased considerably in comparison to the pre-test data for the participants Fábio, Fernanda, Helena, Iara, Juliana, Marcelo, Nicolas, Raquel, Vicente, Willian and Antonio. As a matter of example, in the pre-test, Fábio and Willian could answer correctly 19 activities, while in the post-test, both participants increased their scores to a number of 23 and 24 proper answers. This increase can be interpreted as highly beneficial for learning lexical items through the use of the digital games *The Sims* as part of classroom activities, as previously stated in Chapter 4. With digital gameplaying, participants

had greater opportunities for learning incidentally vocabulary items available in the game. As previously stated in this dissertation, the more repetition and number of encounter with lexical items, the greater the chances of language learning (Laufer, 2001; 2005; 2017).

In addition, there were participants that maintained the same results for correct answers during pre and post-test scores, such as Larissa and Sofia. Their scores remained the same, as shown in the analysis of pre- and post-tests, without any increase or decrease (or fluctuation) among them. In the analysis of the post-test and delayed post-test, this has happened to Fábio, for example, who answered properly 23 activities in both tests. The same happened to Juliana's scores, which remained the same in the last two tests applied.

This permanence (and also the increase) of scores between pre and post-test, according to Franciosi (2017), can be explained due to digital games effectiveness in vocabulary learning. For the author, this has been already demonstrated and is settled nowadays by a variety of measurement protocols, such as vocabulary recognition, multiple choice, matching, cloze tests, among others. This was the case of this investigation, which implemented tests (with multiple choice, matching and translation activities) which correlate learning of English lexical items with digital game playing. Digital game multimodal associations (images to written text) and attention to lexical items in compelling scenarios such as *The Sims*' may evoke motivation and emotions, which can increase the number of interconnections and diversity of opportunities to learn by associating lexical items and, thus, improving LTM (Franciosi, 2017). Previous research (e.g. Sharma & Unger, 2016), demonstrate that digital technologies, such as playing a digital game in the classroom, may support LTM vocabulary learning.

Other than that, for those participants who evolved in qualitative scores, memory may have played a role in their learning processes. As stated by Baddeley (2010), working memory is the system necessary to keep items in mind while performing other tasks necessary for learning. Besides, working memory may emerge from different sources that interact with each other (Baddeley, 2015), such as visual, spatial and phonological. This, in turn, would evolve to memorization and learning opportunities.

Finally, there were some participants that made use of dictionaries during gameplaying sessions, and this may have changed or biased their test scores. It is important to keep in mind that all participants in this research were beginner-level students, and it was their first semester attending classes of English at IFSC. This, in turn,

may justify why some participants, whenever a new word or expression would appear in the game and the association with the image would not help, insisted in looking them up in dictionaries and carry on with the game. Participants such as Nicolas, Sofia, Vicente, Gabrielle and Paulo have made used of dictionaries / translators during gaming sessions, and their scores have remained continually growing. This may mean that dictionary or translator use during gameplaying sessions can be beneficial for learning and remembering of lexical items in comparison to only digital gameplaying. Dictionary use, although not allowed for this research intents, has been understood as an autonomy skill used by participants.

In their research, similar choices were made by Al-Jifri and Elyas (2017) participants. Besides gameplaying with the target language (lexical items) in context, participants decided to use dictionaries to help their learning processes. The authors, moreover, concluded that the use of dictionary can be viewed as a complementary tool to digital game playing. Dictionaries or guessing words from context through text and images associations, therefore, is also part of the learning process and should be treated as a beneficial strategy. Even though participants used dictionaries / translators, they have previously agreed on not using dictionaries during gameplaying.

According to Al-Jifri and Elyas (2017), the repetition and number of encounters with words allowed by digital games would result in an increase of input, which would, in turn, result in greater memorization and learning opportunities. However, just playing for learning would be more time demanding than playing and using dictionaries. Although it requires more repetition, time and effort than dictionaries (Ebrahimzadeh, 2017), digital games help gamers to understand the target vocabulary through different modes, in several contexts and with easy access, being beneficial for learning processes. In this investigation, the use of dictionaries / translators seemed to have enhanced learning opportunities, generally speaking, for the participants that made use of them.

Secondly, this study investigated (2) whether and how participants perceived (or not) the aid of gameplaying *The Sims* for vocabulary development in English, according to their narrative inquiries. For the narrative inquiry analysis, the qualitative data presented showed 6 participants text excerpts. Their excerpts mentioned participants' motivation and emotions, frequency of repetition of lexical items, multimodality, learning through agency and the use of a digital game for learning as the main topics.

Many participants related feeling really motivated to play a digital game for learning purposes in the classroom and school environment. For many of them, this was an enriching experience. During the gaming sessions, motivation and emotional experiences created by digital gaming *The Sims* allowed participants to feel more comfortable and joyful during class time. As claimed by Uzun (2009), digital games may create environments where learning happens taking students' needs and interests into consideration:

> [t]hese advantages of games can help teachers create a willing, ready to learn, active and energetic atmosphere in their classes. The fact that people feel better, get less tired, and are highly motivated when they do things they enjoy, such as playing games, is the main inspirational idea (p. 46).

Besides characteristics such as these, participants had the chance to play different types of activities and exercises in the game, which could have motivated them in doing different activities from their habitual tasks (including digital resources). However, Ebrahimzadeh (2017) emphasized that digital games, in general, should not be applied as a replacement for the traditional classroom activities and course books, but as complementary or supplementary activities that could scaffold and support existing curricula. In the case of this research, this was done during their classes in order to complement their usual school curricula of English at IFSC.

In addition, simulation entertainment games where vocabulary learning is a possibility, such as *The Sims*, bring real world contexts into the classroom (Squire, 2006) and may enhance students' use of English in a flexible and communicative way. In a similar vein, Aghlara and Tamjid (2011) stated that using digital games have positive effects on the learning process of vocabulary, since their use in the classroom results in "better motivation and facilitates the learning process" (p. 558) and in better students' cognitive achievement. By using digital games, the learning process becomes more enjoyable and engaging, while stress levels are drastically reduced (Aghlara & Tamjid, 2011).

In consonance with previous studies (Medina, 2005; Ebrahimzadeh & Alavi, 2017), this research's results indicated that playing digital games enhances motivation. During data collection phases for this investigation, I myself could observe (during gaming sessions) that most participants seemed to have felt motivated to keep playing, showing positive emotions and facial expressions. Participants used to

comment on their game options and choices, especially right after the gaming sessions. Their comments have been something that called my attention: there were moments when they could not hold comments on their own due to their excitement created by *The Sims*. They would, now and then, during gaming sessions, comment "Cool, I passed levels!", or "Look at the color of this sofa so funny!", or even "Yes, I got it![80]". Besides that, from the moment I told participants (prior to the first gaming sessions) they would play a digital game as part of classroom activities, they reacted really excited, happy and motivated. Albeit playing *The Sims* during class activities was part of this research, it became clear participants' will and enjoyment in playing it. According to Al-Jifri and Elyas (2017), participants' sense of free will in digital gaming, "without any kind of anxiety or lack of self- confidence taking place" (Al-Jifri & Elyas, 2017, p. 32), and the process of language learning can occur without obstructions, more easily and in a relaxed and natural way.

As mentioned in the participants' narrative inquiries, the frequency of lexical items repetition can also be seen as a benefit created by digital game playing for learning purposes. As discussed in Chapter 2, previous research (Nation, 2001; Laufer, 2005; 2017) established that the more repetition and number of exposure and encounters with words, the better and higher chances for learning.

In a similar vein, Yudintseva (2015) noted that while playing this game, players were immersed in an enjoyable setting, and that the verbal and written repetitions in *The Sims* facilitated vocabulary learning. Besides that, *The Sims* provided an environment that took into account learners' interests and needs, closely tying knowledge with a kind of active involvement - since the authentic language in the simulation is placed into a context in which it would actually be used. *The Sims*, this way, displays vocabulary that can be easily put into practice in real (non-virtual) communication settings, due to its resemblance to real life. Similar to real life, the characters in the game had to eat, to sleep, to cook and to take care of their hygiene habits, to study and to work, among many other actions that happen in people's daily routine.

Agency was also mentioned by some participants as a benefit from digital gameplaying. This was the case of Marcelo, for instance, who stated feeling good about choosing his characters' appearance and actions. Regarding agency, which has been elicited from digital gameplaying *The Sims*, Franciosi (2017) stated that it is an integral

[80] All these sentences the participants spoke in Portuguese during the gaming sessions applied.

component of games and gameplay. Agency allows players to consider how various aspects may influence future possible outcomes in the game, and this, in turn, might influence positively vocabulary learning and memorization (Franciosi, 2017). Besides that, agency has been found to facilitate memory and learning of vocabulary, since it does not overwhelm players and support sensory information retention.

Therefore, including digital technology in the foreign language classroom as part of curricula may have assisted learning opportunities for this research purposes. What differentiated and motivated participants, in this case, was the fact that *The Sims* offered opportunities where different interests, needs and personal choices could be unified and individualized by their own actions. In consonance with this finding, Uzun (2013) claimed that the relation between education and technology is not a distant phenomenon, and "gaming in education should be also installed as an additional concept for the sake of enjoyable foreign language education" (Uzun, 2013, p. 50). As demonstrated by many participants' comments, the use of digital resources such as a digital game can motivate and enhance learning opportunities, linking the school environment with their interests from outside the classroom.

As in the case of this research inquiry, where participants played *The Sims* for vocabulary development, language learning happened following exposure to lexical items from the game in the target language in a contextualized virtual environment. Once again, the results of this study suggest that digital resources used for educational purposes can be fruitful and motivational. Considering the context of investigation, this may mean that participants' progress in the game was exceptionally high and beneficial, according to their narratives, because *The Sims* allowed a whole new horizon of learning experiences in English for the beginner learners.

Thirdly, this research investigated (3) whether and how *The Sims* assisted vocabulary learning in English as indicated by participants' perceptions according to their oral interviews. Topics such as motivation, memorization, attention, repetition, and exposure to lexical items were mentioned by the participants as positive aspects elicited from the game. However, some negative aspects such as low internet connection and long hours[81] to complete actions were also mentioned.

[81] As previously stated in this dissertation, many tasks and actions in *The Sims FreePlay* version would take real (non-virtual) hours to get complete. For example, if the character is sent to work and his/her work hours are 8 per day, the

Motivation and personal interest, recurring topics regarding participants' comments in narrative inquiries, were salient in interviewees' perceptions as well. According to the participants, a characteristic that motivated them most was the agency the game allowed, and the game opportunities that allowed for their different interests and choices. As stated by Uzun (2013), "because every person likes playing games, taking advantage of this and letting people learn while enjoying themselves would be a good idea" (Uzun, 2013, p. 51), especially for learning purposes. Bearing this in mind, Gros (2007) claimed that digital games are useful for learning since they "develop the learning that is characteristic of the culture of the information society, and this learning is likely to have long-term consequences" (p. 28).

Another characteristic of *The Sims* and mentioned by participants was the association between images and written text in the game. Many of them stated that this helped them in understanding and memorizing the lexical word, since the actions and written text matched and they could see what was being asked by the game in a contextualized setting. This was the case of Willian and Bianca, for instance. As stated by them in their interviews, the association of images or actions in the game and written text or instructions played certainly a role contributing to learning opportunities. Multimodality, therefore, certainly helped them in understanding word meanings and in memorizing lexical items.

Another finding that participants have confirmed, as many interviews show, is that learning English via playing *The Sims* is a natural, easy-going and relaxed process due to the fact that motivation was present at all times. Most of participants mentioned how they felt motivated and willing to play *The Sims*. Also, all interviews substantiated that the gamers' level of English as a foreign language developed as a result of constant and repeated exposure. Participants mentioned repetition and number of encounter with words as a factor that benefited their learning processes, similar to the narrative inquiries excerpts. In consonance to this finding and as aforementioned in this dissertation, the higher the frequency of lexical items repetition, the higher are the possibilities that lexical items would be memorized (Nation, 2001; Schmidt, 2001; Laufer, 2005).

---

character is going to take exactly (real, non-virtual) 8 hours to complete that action. There is no way to anticipate the end of this action in the game, so the player has to wait for that mission to finish to select the next one. Paid versions, of the game, however, allow for anticipation of tasks completion.

However, despite the data analysis related learning processes to digital gameplaying, it cannot be guaranteed that whoever plays digital games is going to learn a language as an outcome. In this study, some participants could not achieve greater learning outcomes the way as other participants did. In a similar study where participants played music video games, DeHaan, Reed and Kuwada (2010) concluded that all players could not acquire the same rate of vocabulary, considering that, although participants managed to complete the video game, some players' vocabulary in foreign language did not develop. Similar results were displayed in this investigation. Although participants were immersed in the gameplay sessions and played *The Sims* in the same context as their colleagues, some have achieved different scores in different tests and related different experiences (regarding positive and negative aspects mentioned). Personal interest, motivation, personal experiences background, attention, memorization, strategies and skills, multimodality, technology, among other reasons…all may have played a role in development of vocabulary in English as a foreign language, although I cannot state – or it was not the objective of this research to state - which was determinant to each participant's learning process.

5.2 Concluding Observations

Numerous benefits and characteristics from digital gameplaying *The Sims* have been mentioned throughout data analysis and discussion. Some benefits that were mentioned by participants were the motivational aspect of playing a digital game during classroom time for learning vocabulary in English as a foreign language. Another benefit acknowledged was the opportunities to associate images to text or to game actions, that, in turn, created learning opportunities, since it allowed better understanding and better memorization. Third and fourth benefits would be the integration of digital technologies in the classroom and participants prospects to explore their agency skills. A fifth benefit mentioned by participants was the resemblance to real life actions and with real life vocabulary, since *The Sims* allowed them to experience in a virtual environment. Finally, there were also repetition, frequency and number of encounters with words.

Moreover, entertainment digital games played for learning purposes during class time, such as *The Sims* in this investigation context, allow different outcomes and impacts: knowledge and content understanding; perceptual and cognitive skills, motor skills, behavior

change, soft and social skills, affective and motivational outcomes, and physiological outcomes (Connolly et al, 2012), such as positive emotions.

EFL learning through digital games, furthermore, allows learning in multimodal domains, including textual and verbal language, images, symbols, pictures, sounds, music, graphs, etc. (Sørensen, 2009). According to the author, learning through digital technologies is beneficial since it "is understood as an individual and social construction and negotiation process in a context. In definitions of learning, change and difference are central concepts" (Sørensen, 2009, p. 280). In conformity with Sørensen (2009)'s findings, this research's participants acknowledged and emphasized several benefits that came along with digital game playing, such as action, challenge, creation and experimentation, identity and enjoyment.

Finally, this study recognized that *The Sims* may have had a transformational impact on vocabulary development in English in that particular context. *The Sims* and other several entertainment digital games are known to provide motivational activities, maturing as a medium technology for EFL learning. Benefits of digital game playing combined to EFL learning contexts are acknowledged by many scholars (Squire, 2006; Gee, 2009; Connolly et. al, 2012; Sykes, 2013; Yunditseva, 2015), although there is much more that can be investigated in the area, especially because digital technologies are updated constantly. What remains, therefore, is that there are surely profits from these designed experiences. It seems safe to state that digital games, and here I include *The Sims*, have a potential for being used in a teaching and learning EFL perspective: it is not an issue if they should be used in learning settings, because they should, but for whom, what purposes and in what contexts (Squire, 2006).

5.3 Summary of the Chapter

Chapter 5 was organized around discussion of possible interpretation of data previously analyzed in Chapter 4, and attempted to answer the research questions of this study, making relation to vocabulary development in EFL promoted by digital gameplaying *The Sims*. Generally speaking, The Sims allowed learning opportunities and vocabulary development due to motivational aspects, multimodality, repetition and the integration of digital technology in the classroom for educational purposes.

The next chapter, Chapter 6 - Concluding Remarks, addresses final comments on the study as a whole, presenting a summary of the

investigation, indicating its limitations and suggesting ideas for further research on the area.

CHAPTER 6 - CONCLUDING REMARKS

This final chapter presents some concluding remarks for this study. Firstly, it starts with a summary of the investigation to recapitulate and highlight its main ideas. Secondly, it addresses its pedagogical implications. Then, some limitations of the study are presented, and, finally, suggestions for further research in the area are made.

After extensive reading, rereading, reflecting, studying, and analysing theories and research results related to the area of language learning and teaching, the content in this concluding chapter consists of a reflection of years of dedication towards this doctoral research. I truly hope that this research's main objectives, methodological procedures, and interpreted results may shed light into the area of language pedagogy in what concerns the use of digital games for vocabulary development.

6.1 Summary of the Investigation

In this doctoral dissertation, the main investigation inquiry had been devoted to vocabulary development through gameplaying sessions of the digital game *The Sims* according to participants' scores and perceptions regarding their learning process. The introductory chapter addressed a background of the study, research questions and objectives, significance and motivation of the study, and the organization of the dissertation.

Theoretical background was presented in Chapter 2, and first addressed the concepts of teaching practices, followed by a discussion regarding vocabulary development in foreign language teaching and learning. Next, the role of memory in language learning, information processing model, as well as the degrees of attention and awareness were addressed. Then, digital games research concerning vocabulary and commitment to memory were presented. Fourthly, foreign language vocabulary development was discussed in terms of intentional and incidental vocabulary learning, frequency and number of encounters with words, and involvement. After that, CALL was discussed and presented in relation to multimodality aspects. Then, the chapter presented digital games characteristics and benefits, and sections discussed how digital games are characterized and how they can benefit as a digital resource for vocabulary development in terms of emotions, motivation and flow state. It also provided previous research contributions to the area of vocabulary acquisition through digital game

playing. In the end, *The Sims* was presented and characterized in terms of its contributions to vocabulary development.

In Chapter 3, the research design was presented first, in terms of qualitative and quantitative data characteristics. Then, participants and data collection context were described, followed by the research instruments, in terms of *The Sims* characteristics, which was the digital game chosen, and of quantitative and qualitative data instruments. Data collection occurred 1) quantitatively throughout 8 gaming sessions, in which participants played *The Sims* for around 40 minutes during classroom time; and 2) qualitatively through a narrative inquiry and two oral interviews. Specifically, in terms of quantitative methods, a pre-test was applied prior to the first gaming session. Besides, after the last gaming session of number 8, a post-test was applied, followed by a delayed post-test applied 3 weeks after the last gaming sessions. After that, the procedures of data collection were unveiled, discussing the pre-test application, the gaming sessions, the post-test application followed by the delayed post-test application, the narrative inquiry, the structured interview, and the semi-structured interview. At the end of the chapter, procedures for data analysis were detailed.

In Chapter 4, both quantitative and qualitative data analysis were carried out taking into consideration each participant's scores (in the pre-test, post-test and delayed post-test) and participants comments and perceptions taken from their narrative inquiries and interviews excerpts. Data analysis outcomes have showed that digital gameplaying *The Sims* may bring about benefits to learning of English as a foreign language, due to several factors, such as contextualized vocabulary development, imagery and written lexical items association, frequency of exposition and repetition, agency, use of digital technology, and motivation to keep participants playing and learning. Due to its resemblance to real life situations, *The Sims* has been beneficial for participants in their vocabulary development, especially because players encountered vocabulary items repeated. *The Sims* allowed repetitions designed to match participants' daily activities, such as waking up, eating and showering, socializing and buying items for their comfort. Finally, previous research in the area was presented and discussed regarding the game chosen.

In the fifth chapter, data analyzed was discussed following the research questions of this doctoral dissertation. Numerous benefits and characteristics from digital gameplaying *The Sims* have been mentioned in an attempt to answer the research questions. According to participants' scores, narrative inquiries and interviews, it seems safe to state that

participants enjoyed playing *The Sims* in the class and that they could learn lexical items from gameplaying. Some aspects that were highlighted from participants' comments were the a) motivational aspects of playing a digital game during classroom time for learning vocabulary in English as a foreign language; b) the association of images to written text or to game actions; c) the integration of digital technologies in the classroom; and d) the resemblance to real life actions *The Sims* allowed them to experience in a virtual environment.

As previously stated in this doctorate dissertation, digital games such as *The Sims* can create situated understanding of vocabulary by connecting game actions to players' personal experience, and, while playing, the written repetition of words facilitated lexicon learning (Gee, 2005; Yudintseva, 2015). As Ramos (2013) acknowledged, digital games are so realistic that are considered a test of real life, bringing interaction, risk-taking, problem-solving, meaning negotiation and community experiences, helping players to use and apply different learning strategies developed by the game into their lives. Furthermore, *The Sims* can foster vocabulary learning of a foreign language, such as English, by allowing players to learn through frequent repetition of words in contextualized a virtual environment. It seems safe to state the finding that vocabulary development in English as a foreign language may happen through digital game playing *The Sims*.

6.2 Pedagogical Implications

The findings of this doctoral study suggest pedagogical applications towards the encouragement of digital games use as a resource for vocabulary development in beginner learners of EFL. This doctoral dissertation has found manifold benefits for learning raised by digital game playing, such as motivation, vocabulary development, image and text association, repetition of lexical items, and contextualized learning. By making use of a technological resource that students are familiar with or enjoy dealing with, such as the simulation entertainment digital game *The Sims*, a more motivational and enjoyable language learning setting can be expected. Although it may require careful planning, technology resources in the classroom may be helpful for learning purposes, especially because they encourage players to be involved in a whole new world with new experiences (Squire, 2006) and language learning may ensue. By analyzing the use of *The Sims* for vocabulary development in English as a foreign language, this study may have added insightful discussions to the area of technology use for learning purposes, which, in

turn, may promote more opportunities for learners to practice and learn languages.

6.3 Limitations of the Study

There have been some limitations already recognized in this study. First, this study was designed to observe how and if the digital game *The Sims* helped in the vocabulary development of English as a foreign language. Hence, as showed in the data analysis and data discussion chapters, the features of the investigation did play a role on the characteristics identified, and its reflections and findings may not be generalized for all learning contexts or for all digital games played for learning purposes. Second, the fact that new digital resources, such as digital games, are always evolving and present different and specific features may impact differently language learning. Depending on the group of participants, the digital game chosen and the research context, results may differ from the ones found in this specific investigation. Third, the logistics of the gaming sessions might also be considered a limitation for this investigation. The poor internet connection available at the school setting may have played a role during gameplay for some participants. For some minutes during some of the gameplay sessions, there was mostly no internet connection, a prerequisite for a satisfactory gaming experience.

Another limitation found was that, although instructed to do the opposite, some participants made use of dictionary during gameplay sessions, and some of the participants, additionally, kept on playing *The Sims* even after they were instructed not to after the end of the gaming sessions (this happened after the last gaming session, of number 8). These participants had their data analyzed separately, as mentioned in Chapter 3. Even so, this dissertation understands that this may be part of the natural setting classroom where the data collection took place. As in all voluntary research settings in Brazil, there is a trust agreement between researchers and participants. In this research, this was not different and I trusted that participants would act as agreed collectively prior to the data collection context.

Finally, another limitation found is that it was impossible – and was not an objective of this investigation – to state or measure which hypothesis raised was decisive or conclusive regarding participants' continuous growth in their scores throughout data collection and analysis.

6.4 Suggestions for further research

This doctoral dissertation is expected to contribute to learning insights regarding the use of digital games in EFL settings in Brazil. However, both areas of digital technology and learning foreign languages are never-ending areas with constant updates, and there are countless manners to study language development through digital games. Overall, there is need for investigating different types of technological resources that may facilitate vocabulary development in the sense proposed in this study.

Having this in mind, a suggestion is to investigate a serious game and to compare it with *The Sims* in order to understand how planned vocabulary can be presented and be involved in digital games for learning purposes as a main objective. Furthermore, it seems that there is yet space for further research concerning beginner learners of vocabulary in EFL with the aid of technological resources. An interesting strand of actions that can promote vocabulary learning through the playing of digital games such as *The Sims* and help in the deepening of vocabulary understanding is based on teachers' involvement. Teacher's introduction and integration of digital games in classroom environments for learning purposes might raise students' engagement in activities, discussion, and vocabulary displayed in digital games (with learning objectives) to deepen understanding (Sharma & Unger, 2016), especially via motivational and interesting tasks for their needs. This would help and guide the use of digital games for vocabulary learning in the foreign language classroom. Finally, the present dissertation may be seen as an initial step towards the understanding of vocabulary development in EFL through the use of the digital game *The Sims*. The implementation of digital technologies for learning purposes is, in general, engaging and beneficial both for learners and teachers. Notwithstanding, as professionals of foreign language teaching, it is important to be updated regarding new research on this topic of inquiry.

REFERENCES

Aben, B., Stapert, S., and Blokland, A. (2012). About the distinction between working memory and short-term memory. *Frontiers in Psychology.* 3:301. Doi: 10.3389/fpsyg.2012.00301.

Admiraal, W., Huizenga, J. Akkerman, S., and Dam, G. (2011). The concept of flow in collaborative game-based behavior. *Computers in Human Behavior*, volume 27, pp. 1185-1194.

Aghlara, L. and Tamjid, N. H. (2011). The effect of digital games on Iranian children's vocabulary retention in foreign language acquisition. *Procedia – Social and Behavioral Sciences 29*, pp. 552–560.

Ahn, J. I. (2014). Attention, Awareness, and Noticing in SLA: A Methodological Review. *MSU Working Papers in SLS*, volume 5, pp. 56–64.

Al-Jifri, A. A. & Elyas, T. (2017). The Impact of Video Games in the Acquisition of English Language: The Case of Saudi Youths. Journal of Foreign Language Education and Technology, 2(2), pp. 15-35.

Aslanabadi, H. and Rasouli, G. (2013). The Effect of Games on Improvement of Iranian EFL Vocabulary Knowledge in Kindergartens. *International Review of Social Sciences and Humanities*, Vol. 6, No. 1 (2013), pp. 186-195.

Baddeley, A. D. (2003). Working Memory: looking back and looking forward. *Nature Reviews: Neuroscience*, volume 4, pp. 829-839.

Baddeley, A. D. (2010). Working Memory. *Current Biology*, volume 20, no. 4, pp. 136-140.

Baddeley, A. (2012). Working Memory Theories, Models, and Controversies. *Annual Review of Psychology*, v. 63, pp. 1-29.

Baddeley, A. D. (2015) Working Memory in Second Language Learning. Wen, Z. E., Mota, M. B., and McNeill, A. (Eds.) Working Memory in Second Language Acquisition and Processing. Great Britain: Short Run Press Ltd.

Baddeley, A. D., and Hitch, G. (1974). Working memory. G.H. Bower (Ed.), *The psychology of learning and motivation: Advances in research and theory* (Vol. 8, pp. 47–89). New York: Academic Press.

Bodner, G. M. 1986. Constructivism: A theory of knowledge. *Journal of Chemical Education*, 63, pp. 873-878.

Boyle, E. A., Hainey, T., Connolly, T. M., Gray, G., Earp, J., Ott, M., … Pereira, J. (2016). An update to the systematic literature review of empirical evidence of the impacts and outcomes of computer games and serious games. *Computers and Education*, 94, 178–192. https://doi.org/10.1016/j.compedu.2015.11.003

Brown, H. D. (2002). English Language Teaching in the "Post-Method" Era: Toward Better Diagnosis, Treatment, and Assessment. Richards, J. C. & Renandya, W. A. (Eds.). *Methodology in Language Teaching An Anthology of Current Practice*. Cambridge University Press, New York.

Bytheway, J. (2015). A taxonomy of vocabulary learning strategies used in massively multiplayer online role-playing games. *CALICO Journal*, 32 (3).

Calderón, M., Slavin, R., and Sánchez, M. (2011) Effective Instruction for English Learners. *The Future of Children*, vol. 21, no. 1, spring 2011.

Calvo-Ferrer, J. R. (2017). Educational games as stand-alone learning tools and their motivational effect on L2 vocabulary acquisition and perceived learning gains. *British Journal of Educational Technology*, volume 48, no. 2, pp. 264–278.

Carr, J. M. (2012). Does Math Achievement h'APP'em when iPads and Game-Based Learning are incorporated into Fifth-Grade Mathematics Instruction? *Journal of Information Technology Education: Research*, volume 11, pp. 269–286.

Chen, S. & Michael, D. (2005). Proof of Learning: Assessment in Serious Games. *Gamasutra*, October 19th, 2005. https://doi.org/10.1109/TLT.2010.21

Chik, A. (2011). Learner autonomy development through digital gameplay. *Journal of Digital Culture & Education*, 3(1), 30–45.

Chik, A. (2014). Digital Gaming and Language Learning: Autonomy and Community. *Language Learning & Technology*, volume 18, number 2, pp. 85–100.

Connelly, F. M. and Clandinin D. J. (1990). Stories of Experience and Narrative Inquiry. *Educational Researcher*, June/ July 1990. Pp. 2-14.

Connolly, T. M., Boyle, E. A., MacArthur, E., Hainey, T., Boyle, J. M. (2012). A systematic literature review of empirical evidence on computer games and serious games. *Computers & Education*, 59, pp. 661–686.

Cornillie, F., Thorne, S. L., and Desmet, P. (2012). ReCALL special issue: Digital games for language learning: challenges and opportunities. *ReCALL*, volume 24, issue 3, pp. 243-256.

Costa, A. R., Fialho, V. R., Beviláqua, A. F., Leffa, V. J. (2012). Contribuindo com o estado da arte sobre Recursos Educacionais Abertos para o ensino e a aprendizagem de línguas no Brasil. *Veredas - Revista de Estudos Linguísticos*, Belo Horizonte, v. 20, n. 1, pp. 209-230, jan. /jun. 2012.

Csikszentmihalyi, M. (1990) *Flow: The Psychology of Optimal Experience*. Harper Perennial.

deHaan, J., Reed, W.M. & Kuwada, K. (2010). The effect of interactivity with a music video game on second language vocabulary recall. *Language Learning & Technology*, 14(2), 74-94.

Dempsey, J. V., Lucassen B.A., Haynes L.L., Casey M.S. (1996) Instructional applications of computer games. *Annual Meeting of the American Educational Research Association (AERA).*

Derakhshan, A. & Khatir, E. D. (2015). The Effects of Using Games on English Vocabulary Learning. *Journal of Applied Linguistics and Language Research*, volume 2, issue 2, pp. 39-47.

Dörnyei, Z. (2007). *Research methods in applied linguistics.* New York: Oxford University
Press.

Dörnyei, Z. (2011) Researching complex dynamic systems: 'Retrodictive qualitative modelling' in the language classroom. *Language Teaching*, 47.1, pp. 80–91. Cambridge University Press.

Ebrahimi, F., & Zamanian, M. (2013). Computer game: implementing computer game on Iranian early EFL learners. *Brazilian English Language Teaching Journal (BELT),* vol. 4(2), pp. 152-162.

Ebrahimzadeh, M. & Alavi, S. (2017). The effect of digital video games on EFL students' language learning motivation. *Teaching English with Technology*, 17 (2), pp. 87-112.
Ebrahimzadeh, M. (2017). Readers, Players, and Watchers: EFL Students' Vocabulary Acquisition through Digital Video Games. *English Language Teaching*, vol. 10, no. 2, pp. 1-18.

Ellis, R. (2005). *Instructed Second Language Acquisition: A Literature Review*. Wellington: Ministry of Education, New Zealand.

Ferreira, H. da C. (2003). A teoria piagetiana da equilibração e as suas consequências educacionais. *Instituto Politécnico de Bragança*. Bragança: Portugal.

Franciosi, S. J. (2017). The Effect of Computer Game-Based Learning on FL Vocabulary Transferability. *Educational Technology & Society*, 20 (1), pp. 123-133.

Gee, J. P. (2005). Learning by Design: good video games as learning machines. *E–Learning and Digital Media*, Volume 2, Number 1, pp. 5-16.

Gee, J. P. (2009). Deep learning properties of good digital games: How far can they go? *In Serious Games: Mechanisms and Effects* (pp. 67-82). Routledge Taylor & Francis Group.

Gee, J. P. (2015). Accountable Talk and Learning in Popular Culture: The Game/affinity Paradigm. Resnick, L. B., Asterhan, C., & Clarke, S. N. (Eds.). *Socializing Intelligence through Academic Talk and*

Dialogue, pp. 191-198. Washington, DC: American Educational Research Association.

Gee, J. P. and Hayes, E. R. (2010). *Women and Gaming: The Sims and 21st Century Learning*. Palgrave Macmillan.

Gee, J. P. and Hayes, E. R. (2012a). Language and Learning in the Digital Age. *Language Learning & Technology*, Vol. 16, n. 1, pp. 30-22.

Gee, J. P. & Hayes, E. (2012a). Nurturing Affinity Spaces and Game-Based Learning. Steinkuehler, C., Squire, K, & Barab, S. (Eds.) *Games, Learning, and Society: Learning and Meaning in the Digital Age*. Cambridge: Cambridge University Press, 2012, pp. 129-155.

Godwin-Jones, R. (2014). Games in language learning: Opportunities and challenges. *Language Learning & Technology,* volume 18, number 2, pp. 9–19. Retrieved from http://llt.msu.edu/issues/june2014/emerging.pdf

Goh, S. L. (2016). Learning Strategies and learner attitudes in the massively multiplayer online role-playing game cube world. *Jalt CALL Journal*, vol. 12, no. 3, pp. 203-216.

Gramigna, M. R. (2007) *Jogos de Empresa*. Pearson Education: São Paulo.

Gros, B. (2003). The Impact of Digital Games in Education. *First Monday*, v. 8, n. 7, Jul.

Gros, B. (2007). Digital Games in Education: The Design of Games-Based Learning Environments. *Journal of Research on Technology in Education*, volume 40, issue 1, pp. 23–38.

Guerrero, H. (2011). Using Video Game-Based Instruction in an EFL Program: Understanding the Power of Video Games in Education. *Colombian Applied Linguistics Journal*, Vol. 13, Number 1. Bogotá, Colombia. Pp 54-70.

Guichon, N. and Cohen, C. (2016). Multimodality and CALL. Farr, F. & Murray, L. (eds.) *The Routledge Handbook of Language Learning and Technology*, Routledge, pp. 509-521.

Hansen, L., Umeda, Y., and McKinney, M. (2002). Savings in the Relearning of Second Language Vocabulary: The Effects of Time and Proficiency. *Language Learning*, 52:4, pp. 653-678.

Hatch, E. and Brown, C. (1995). *Vocabulary, Semantics, and Language Education*. Cambridge: Press Syndicate of the University of Cambridge.

Heberle, V. (2010). Multimodal literacy for teenage EFL students. *Cadernos de Letras* (UFRJ) n.27 – dez. Pp. 101 – 116.

Hirschel R. & Fritz E. (2013). Learning vocabulary: CALL program versus vocabulary notebook. *Science Direct 41*, pp. 639-653.

Hopper, L. (2010). Deferred imitation in children and apes. *The Psychologist*, volume 23, no. 4, pp. 294-297.

Huyen, N. T. T., & Nga, K. T. T. (2003). The effectiveness of learning vocabulary through games. *Asian EFL Journal*, 5, pp. 1-15.

Iwanaka, T. (2011). Roles of Noticing in English Language Learning: A Literature Review. *Journal of Higher Education and Research of Kagawa University*, vol. 8, pp. 53-67.

Javerlä, S., Ekman, I., Kivikangas, J. M., and Ravaja, N. (2014). Digital Games as an Experiment Stimulus. *Transactions of the Digital Games Research Association (DIGRA),* volume 1, number 2.

Jewitt, C. (2013) Multimodal methods for researching digital technologies. Sara Price, Carey Jewitt & Barry Brown (eds.) *The Sage Handbook of Digital Technology Research*, pp. 250-265. Los Angeles: Sage.

Kelley, J. G., Lesaux, N. K., Kieffer, M. J., Faller, S. E. (2010) Effective Academic Vocabulary Instruction in the Urban Middle School. *The Reading Teacher*, 64(1), pp. 5–14.

Kelly, C. (2013) Understanding Language Learning by Looking at Faulty Memory. *KOTESOL Proceedings 2013 - Exploring the Road Less Traveled: From Practice to Theory*. Proceedings of the 21st Annual KOTESOL International Conference Pp. 47 – 54.

Kirschner, P. A. and Bruyckere, P. (2017) The myths of the digital native and the multitasker. *Teaching and Teacher Education*, 67, pp. 135–142.

Kolb, A. Y. & Kolb, D. A. (2010). Learning to play, playing to learn: A case study of a ludic learning space. *Journal of Organizational Change Management*, Vol. 23, No. 1, pp. 26-50. Emerald Group Publishing Limited.

Kress, G., & Leeuwen, T. van (1996). *Reading images: a grammar of visual design*. London: Routledge.

Kronenberg, F. A. (2012). Selection criteria for commercial-off-the-shelf (COTS) video games for language learning. *International Association for Language Learning Technology Journal*, 42(2), 52–78.

Kuhl, P. & Gleitman, L. (2007). Final Workshop Report: Opportunities and Challenges for Language Learning and Education. National Science Foundation, September 5-7, 2007.

Laufer, B. (1997). What's in a word that makes it hard or easy: some intralexical factors that affect the learning of words. In: *Vocabulary: Description, Acquisition and Pedagogy*. Schmitt, N. and McCarty, M. (eds.). Pp. 140 – 155.

Laufer, B. (2001). Reading, word-focused activities and incidental vocabular acquisition in a second language. *Prospect*, volume 16, number 3, pp. 44–54.

Laufer, B. (2014). Vocabulary in a Second Language: Selection, Acquisition, and Testing: A Commentary on Four Studies for JALT Vocabulary SIG. *Vocabulary Learning and Instruction*, volume 3, issue 2, pp. 38–46.

Laufer, B. (2017). From word parts to full texts: Searching for effective methods of vocabulary learning. *Language Teaching Research*, volume 21, number 1, pp. 5–11.

Laufer, B. and Rozovski-Roitblat, B. (2011). Incidental vocabulary acquisition: The effects of task type, word occurrence and their

combination. *Language Teaching Research*, volume 15, number 4, pp. 391–411.

Laufer, B. & Rozovski-Roitblat, B. (2014). Retention of new words: Quantity of encounters, quality of task, and degree of knowledge. *Language Teaching Research*; Special Issue: Vocabulary research and pedagogy, pp. 1-25.

Leffa, V. J. & Pinto, C. M. (2014). Aprendizagem Como Vício: O Uso de Games na Sala de Aula. *(Con) textos Linguísticos*, v. 8, p. 358-378.

Liu, S. H. J.; Lan, Y; Jenkins, J. R. (2014). Technology-Enhanced Strategy Use for Second Language Vocabulary Acquisition. *English Teaching & Learning*, 38 (2), pp. 105-130.

Lorenset, C. C. (2010). *Visual and lexicogrammatical analysis of websites of women`s magazines.* Unpublished Masters Thesis. Universidade Federal de Santa Catarina, Centro de Comunicação e Expressão, Programa de Pós-Graduação em Letras/Inglês e Literatura Correspondente, Florianópolis.

Lotherington, H. and Jenson, J. (2011). Teaching Multimodal and Digital Literacy in L2 Settings: New Literacies, New Basics, New Pedagogies. *Annual Review of Applied Linguistics*, issue 31, pp. 226–246. Cambridge University Press.

Ma, Q. (2017). Technologies for Teaching and Learning L2 Vocabulary. Chapelle, C. A. and Sauro, S. (eds.). *The Handbook of Technology and Second Language Teaching and Learning*. John Wiley & Sons. Pp. 45–61.

Mahfud, R. N. and Lumombo, L. (2017). Comparative analysis of gameplay and players emotion in the most popular games from play store. *Journal of Physics: Conference Series 978*, pp. 1-6.

Martey, R. M. & Stromer-Galley, J. (2007). The Digital Dollhouse: Context and Social Norms in The Sims Online. *Games and Culture*, volume 2, number 4, pp. 314-334.

McDermott, K. B., and Roediger, H.L. (2018). Memory (Encoding, Storage, Retrieval). Pp. 117-153. In: Butler, A. (Ed.) *General Psychology FA2018*. Noba Project: Milwaukie, OR.

Medina, E. (2005). Digital Games: A Motivational Perspective. Proceedings of DIGRA 2005 Conference: Changing Views – Worlds in Play. Pp. 1 – 10.

Menezes, J. (2013). *Jogos sociais digitais como ambiente de aprendizagem da língua inglesa*. Dissertação de mestrado não publicada. UNISINOS: São Leopoldo.

Menezes, J., & Schlemmer, E (2014). Desenvolvendo a competência comunicativa através de Social Games nas aulas de Língua Inglesa. *Proceedings of SBGames 2014*, XIII SBGames – Porto Alegre, RS, Brazil, November 12th - 14th, pp. 543-549.

Miller, M. and Hegelheimer, V. (2006). The SIMs meet ESL: Incorporating authentic computer simulation games into the language classroom. *Interactive Technology & Smart Education*, volume 4, pp. 311– 328.

Min, Y. (2013) Vocabulary Acquisition: Practical Strategies for ESL Students. *Journal of International Students*. Volume 3, Issue 1, pp. 64-69.

Moran, J. (2013) *A integração das tecnologias na educação*. Retirado em 26/06/2015 de http://www.eca.usp.br/prof/moran/site/textos/tecnologias_eduacacao/integracao.pdf.

Moura, A. (2014). Jogos Eletrônicos para Aprendizagem Curricular em Língua Materna e Estrangeira. *Conference paper: 9ª Conferencia Ibérica de Sistemas y Tecnologias de Información*, At Barcelona, Spain, Vol. II.

Nation, I. S. P. (1990). The Goal of Vocabulary Learning. *Teaching and learning vocabulary*. New York: Newbury House, 1st Ed. (pp. 6-22).

Nation, I. S. P. (2001). *Learning Vocabulary in Another Language*. Cambridge University Press.

Nation, I. S. P. (2003). Vocabulary. D. Nunan (ed) *Practical English Language Teaching*. McGraw Hill: New York.

Nation, I. S. P. (2004). Vocabulary Learning and Intensive Reading. *English Australia*, volume 21, no. 2, pp. 20–29.

Nation, I.S.P. (2011). Vocabulary research into practice. *Language Teaching*, 44(4), 529-539.

Nation, I. S. P. (2014) How much input do you need to learn the most frequent 9,000 words? *Reading in a Foreign Language*, Volume 26, no. 2, pp. 1 – 16.

Nation, P. and Meara, P. (2002). Vocabulary. *An Introduction to Applied Linguistics*, chapter 3. N. Schmitt (ed.). Arnold: London. Pp. 37–54.

Nunan, D. (2008) *Research Methods in Language Learning*. New York: Cambridge University Press.

Oliveira, P. R. B. (2017). Pokémon, Go: Discutindo dispositivos e a pedagogia dos jogos eletrônicos. *Texto Livre Linguagem e Tecnologia*, volume 10, number 2, pp. 50–65.

Oxford, R., & Crookall, D. (1990). Vocabulary Learning: A Critical Analysis of Techniques. *TESL Canada Journal* 7.2, 9-30.

Palinkas, L. A., Horwitz, S., Green, C., Wisdom, J. P., Duan, N., and Hoagwood, K. (2015). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Administration and Policy in Mental Health*, 42 (5), pp. 533-544.

Prensky, M. (2001) Digital Natives, Digital Immigrants Part 1. *On the Horizon*, Vol. 9, Issue 5, pp. 1 – 6.

Prensky, M. (2005). Me or Enrage Me "What today's learners demand". EDUCAUSE Review, September/October, pp. 60-64.

Prensky, M. (2007) *Digital Game-Based Learning*. New York: Paragon House.

Prügl, R. & Schreier, M. (2006). Learning from leading-edge customers at The Sims: Opening up the innovation process using toolkits. *R & D Management*, 2006, 36 (3): 237-250.

Purushotma, R. (2005). Commentary: You're not studying, you're just… *Language Learning & Technology*, Volume 9, Number 1, pp. 80-96.

Ramos, D. K. (2013). Jogos cognitivos eletrônicos: contribuições à aprendizagem no contexto escolar. *Ciências & Cognição* (UFRJ), v. 18, p. 19-32.

Ramos, D. K., Lorenset, C. C., and Petri, G. (2016). Jogos Educacionais: Contribuições da Neurociência à Aprendizagem. *Revista X* (Universidade Federal do Paraná), Volume 2, pp. 1 – 17.

Ramos, F. D. R. (2015). Incidental Vocabulary Learning in Second Language Acquisition: A Literature Review. *Profile*, vol. 17, no. 1, pp. 157-166.

Ranalli, J. (2008). Learning English with The Sims: exploiting authentic computer simulation games for L2 learning. *Computer Assisted Language Learning*, volume 21, issue 5, pp. 441-455.

Reinking, D., Labbo, L., and McKenna, M. (2000). From assimilation to accommodation: a developmental framework for integrating digital technologies into literacy research and instruction. *Journal of Research in Reading*, volume 23, issue 2, pp. 110-122.

Richards, J. C. (2015). The Changing Face of Language Learning: Learning Beyond the Classroom. *RELC Journal*, vol. 46 (1), pp. 5-22.

Robinson, P. (1995). Attention, Memory, and the "Noticing" Hypothesis. *Language Learning*, volume 45, number 2, pp. 283– 31.

Rodrigues, D. F. (2006). Um olhar crítico sobre o ensino de vocabulário em contextos de inglês como língua estrangeira. *Trabalhos em Linguística Aplicada*, v, 45, n. 1, p. 55-73.

Ryan, R. M. and Deci, E. L. 2000. Self-Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well-Being. *American Psychologist*, vol. 55, no. 1, pp. 68-78.

Saffarian, R., & Gorjian, B. (2012) Effect of computer-based video games for vocabulary acquisition among young children: An experimental study. *Journal of Comparative Literature and Culture* (JCLC), 1(3), pp. 44-48.

Sahrir, M. S. & Yusri G. A. R. (2012). Online Vocabulary Games for Teaching and Learning Arabic. *GEMA Online® Journal of Language Studies*. Vol.12 (3), pp. 961-977.

Savi, R. & Ulbricht, V. R. (2008) Jogos Digitais Educacionais: benefícios e desafios. *Novas Tecnologias na Educação* - CINTED-UFRGS, Vol. 6, número 2.

Schmidt, R. W. (1990). The role of consciousness in second language learning. *Applied Linguistics*, 11, 129–158.

Schmidt, R. W. (1994). Deconstructing consciousness in search of useful definitions for applied linguistics. *AILA Review*, 11, 11–26.

Schmidt, R. W. (1995). Consciousness and foreign language learning: A tutorial on the role of attention and awareness in learning. In R. W. Schmidt (Ed.), *Attention and awareness in foreign language learning* (pp. 1–63). Honolulu, HI: University of Hawaii, National Foreign Language Resource Center.

Schmidt, R. W. (2001). Attention. In P. Robinson (Ed.), *Cognition and second language instruction* (pp. 3–32). Cambridge: Cambridge University Press.

Schmidt, R. (2010). Attention, awareness, and individual differences in language learning. In W. M. Chan, S. Chi, K. N. Cin, J. Istanto, M. Nagami, J. W. Sew, T. Suthiwan, & I. Walker, *Proceedings of CLaSIC 2010*, Singapore, December 2-4 (pp. 721-737). Singapore: National University of Singapore, Centre for Language Studies.

Schmitt, N. (1994). Vocabulary testing: Questions for test development with six examples of tests of vocabulary size and depth. *Thai TESOL Bulletin 6*, 2: 9-16.

Schmitt, N. (2000) *Vocabulary in Language Teaching*. Cambridge University Press, Cambridge.

Schmitt, N. (2010) *Researching Vocabulary: A Vocabulary Research Manual*. Palgrave Press.

Schuetze, U. (2014). Spacing techniques in second language vocabulary acquisition: Short-terms gains vs. long-term memory. *Language Teaching Research*, pp. 1-15.

Shahriarpour, N. and Kafi, Z. (2014) On the Effect of Playing Digital Games on Iranian Intermediate EFL Learners' Motivation toward Learning English Vocabularies. *Procedia-Social and Behavioral Sciences*, v. 98, pp. 1738-1743.

Shanahan, T. and Shanahan, C. (2012) What Is Disciplinary Literacy and Why Does It Matter? *Top Lang Disorders*, Vol. 32, No. 1, pp. 7–18.

Sharma, S. A. & Unger, S. (2016). Employing Web 2.0 Technologies to Support Students' Academic Vocabulary Acquisition. *Michigan Reading Journal*, vol. 48, no. 3a, pp. 17-29.

Shinkle, E. 2008. Video games, emotion and the six senses. *Media Culture Society*, vol. 30(6), pp. 907-915.

Silva, E. B., Corrêa, J. B, & Silva, L. M. (2012) Jogos eletrônicos em língua inglesa: aspectos quantitativos do conteúdo lexical. *Via Litterae*. Anápolis, v.4, n. 1, p. 53-62, jan. /jun. 2012.

Silva, R. L. (2014) Video Games as Opportunity for Informal English Language Learning: Theoretical Considerations. *The ESPecialist*, v. 35, p. 155-169.

Smith, B. (2007). Commentary: The state of the art in narrative inquiry: Some reflections. *Narrative Inquiry*, 17:2, pp. 391–398.

Sok, S. (2014). Deconstructing the Concept of 'Incidental' L2 Vocabulary Learning. *Working papers in TESOL & Applied Linguistics*, vol. 14, no. 2, pp. 21-37.

Sørensen, B. H., & Meyer, B. (2007). Serious games in language learning and teaching: A theoretical perspective. *Proceedings of the 2007 Digital Games Research Association,* pp. 559–566. Retrieved from http://www.digra.org/dl/db/07312.23426.pdf.

Squire, K. (2006). From Content to Context: Videogames as Designed Experience. *Educational Researcher*, 35(8), 19-29. Sage Publications.

Sykes, J. M. (2013). - "Just" Playing Games? A Look at the Use of Digital Games for Language Learning. *The Language Educator*. October Special Issue on Technology, 2013, pp. 32-35.

Sykes, J. M.; Reinhardt, J. (2013) *Language at play: digital games in second and foreign language teaching and learning*. Boston, MA: Pearson.

Tavakoli, P. and Jones, R. (2018). An overview of approaches to second language acquisition and instructional practices. *Cardiff: Welsh Government report number 12/2018*. Cardiff: Crown Copyright.

Tumolo, C. H. S. (1999). Vocabulary Instruction: The text as a source in the classroom. *Unpublished Masters Thesis*. Universidade Federal de Santa Catarina, UFSC, Brasil.

Tumolo, C. H. S. (2007). Vocabulary and Reading: teaching procedures in the ESP classroom. *Linguagem & Ensino*, v. 10, no. 2, pp. 477-502.

Tumolo, C. H. S. (2014) Recursos digitais e aprendizagem de inglês como língua estrangeira. *Revista Ilha do Desterro*, número 66, pp 203-238.

Turgut, Y. and Irgin, P. (2009) 'Young learners' language learning via computer games'. *Procedia Social and Behavioral Sciences*, vol. 1 (2009), pp. 760–764.

Ullman, M. T. and Lovelett, J. T. (2016). Implications of the declarative / procedural model for improving second language learning: The role of

memory enhancement techniques. *Second Language Research*, especial edition. Pp. 1–27.

Uzun, L. (2009). Na evaluative checklist for computer games used for foreign language vocabulary learning and practice: VocaWord sample. *Novitas – Royal*, vol. 3:1, pp. 45-59.

Uzun, L. et al (2013). Developing and Applying a Foreign Language Vocabulary Learning and Practicing Game: The effect of VocaWord. *Digital Culture & Education*, 5:1, pp. 48–70.

Vahdat, S. & Behbahani, A. R. (2013) The Effect of Video Games on Iranian EFL Learners' Vocabulary Learning. *Reading Matrix: An International Online Journal*, Vol. 13 Issue 1, p .61-71.

Walsh, C. (2010) Systems-based literacy practices: Digital games research, gameplay and design. *Australian Journal of Language and Literacy*, Vol. 33, No. 1, 2010, pp. 24–40.

Wang, C. K. J., Khoo, A., Liu, W. C., and Divaharan, S. (2008) Passion and Intrinsic Motivation in Digital Gaming. *Cyber Psychology and Behavior*, Volume 11, Number 1. Mary Ann Liebert, Inc.

Wangnheim, C. G. & Wangenheim, A. (2012). *Ensinando Computação com Jogos*. Florianópolis / SC: Bookes Editora.

Wen, Z. (2012) Working memory and second language learning. *International Journal of Applied Linguistics*, Vol. 22, No. 1, pp. 1 – 22.

Williams, J. N. (2013). Attention, awareness, and noticing in language processing and learning. In J. M. Bergsleithner, S. N. Frota, & J. K., Yoshioka (Eds.), *Noticing and second language acquisition: Studies in honor of Richard Schmidt* (pp. 39 – 57). Honolulu, HI: National Foreign Language Resource Center.

Williams, J. N. and Lovatt, P. (2003). *Phonological Memory and Rule Learning*. Language Learning, volume 53, number 1, pp. 67-121.

Yanguas, I. (2009). Multimedia glosses and their effect on L2 text comprehension and vocabular learning. *Language Learning & Technology*, volume 13, number 2, pp. 48–67.

Yilmaz, Y. Y. (2015). Learning vocabulary in a foreign language: A computer software based model attempt. *Journal of Language and Linguistic Studies*, vol. 11(2), pp. 23-38.

Yudintseva, A. (2015). Game-Enhanced Second Language Vocabulary Acquisition Strategies: A Systematic Review. *Open Journal of Social Sciences 2015*; vol. 03: 101-109.

Young, M., Schrader, P.G. & Zheng, D. (2006). MMOGs as Learning Environments: An Ecological Journey into "Quest Atlantis" and "The Sims Online". *Innovate: Journal of Online Education, 2*(4).

APPENDIX 1 – Pre-test, Post-test and Delayed Post-test

MINISTERIO DA EDUCAÇAO
SECRETARIA DE EDUCAÇÃO PROFISSIONAL E TECNOLÓGICA
INSTITUTO FEDERAL DE EDUCAÇÃO, CIÊNCIA E TECNOLOGIA DE SANTA CATARINA
PROFESSOR (A): Caroline Chioquetta Lorenset
ALUNO (A): (caroline.lorenset@ifsc.edu.br)

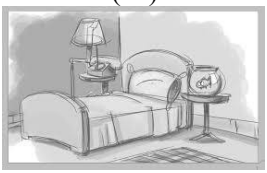
Nome completo: _____
Data: _____de_____de 2017.
Você já ouviu falar do jogo The Sims? _____
Você já jogou The Sims? _____

1. Assinale a imagem que mostre o que está sendo pedido:

a) dark hair:

( ) 	( ) 	( ) 

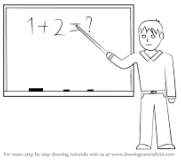
b) bathroom:

( ) 	( ) 	( ) 

c) hand washing:

( ) 	( ) 	( ) 

d) a firefighter:

( )	( )	( )
		

e) a t-shirt:

( )	( )	( )
		

2. Circule a palavra com significado similar àquela sublinhada nas frases abaixo:

Example: The horse was very <u>fast</u>: (quick) slow huge tiny

a) He likes to <u>create</u> new furniture. sell design order wash
b) My <u>mobile</u> is ringing. fax machine cellphone touchscreen phone number
c) To <u>color</u> is my favorite thing to do. draw cut glue paint
d) Let's go for a <u>coffee</u>? hot chocolate espresso green tea water
e) My favorite food is <u>apple cake</u>. apple pie apple juice red apple baked apple

3. Selecione a palavra em inglês correspondente à palavra em português. Se você não sabe, deixe-a em branco:

1. Olho:
a) Nose
b) Eye
c) Mouth
d) Lip

2. Telhado:
a) Roof
b) Floor
c) Wall
d) Mirror

3. Porta:
a) Window
b) Balcony
c) Garden
d) Door

4. Banheiro:
a) Bedroom
b) Kitchen
c) Bathroom
d) Living room

5. Plantar:
a) To plant
b) To change
c) To buy
d) To pet

6. Trocar:
a) To drive
b) To watch
c) To listen
d) To change

7. Comer:
a) To drink
b) To wash
c) To eat
d) To work

4. Selecione a melhor definição para cada palavra abaixo colocando um [X] no espaço adequado. Se você não sabe, deixe-a em branco:

a. to eat [ ] to study for a test
[ ] to put food in your mouth
[ ] to open suddenly
b. to buy [ ] to have a big surprising smile
[ ] to talk to someone in a store
[ ] to obtain something by paying

c. to build [ ] to laugh very loudly
[ ] to construct something
[ ] to do a very easy task

5. Escreva a palavra correspondente em português para as palavras abaixo. Se você não sabe, deixe em branco:

a. Mouth: _____
b. Wall: _____
c. Bed: _____
d. Lamp: _____
e. Workplace: _____

6. Escreva a versão em inglês das palavras abaixo. Se você não sabe, deixe em branco:

a. Plantar tomates: _____
b. Trocar de roupas: _____
c. Assar biscoitos: _____
d. Comprar uma geladeira: _____
e. Tomar banho: _____

7. Como você se sentiu hoje ao realizar esta atividade?

( ) Bored	( ) Tired	( ) Okay	( ) Good	( ) Great	( ) Terrific
					

APPENDIX 2 – Narrative Inquiry Template

Escreva em forma de narrativa suas observações e percepções sobre o jogo *The Sims* considerando aspectos como:
- aprendizagem de inglês
- aprendizagem de vocabulário em inglês
- interesse e motivação em continuar jogando

Exemplo de narrativa sobre o jogo *The Sims*:

"Eu comecei a jogar *The Sims* porque a professora trouxe pra aula como atividade. Eu já tinha ouvido falar dele porque minha prima joga e gosta, mas eu nunca me empolguei pra jogar porque eu nãos sabia muito como era. Depois que eu comecei a jogar sempre, senti que aprendi algumas palavras (vocabulário) em inglês, como "firefighter", "tiles" e "lamp". Desde o início eu me empolguei muito porque dava pra criar vários *Sims* (personagens) e eu via que tava aprendendo inglês também. Eu tentei fazer a primeira personagem bem parecida comigo, mas o segundo tentei fazer parecido com meu irmão mais velho. Eu achei que ia ser difícil porque era em inglês, mas quando comecei a jogar, vi que as imagens ajudavam bastante e consegui alterar as características físicas bem de boa. Em algumas tarefas eu demorei mais pra entender o que tava sendo pedido, mas aos poucos fui entendendo que era pra construir um lugar de trabalho pra que os personagens tivessem um lugar pra trabalhar na cidade. Senti que eu fui aprendendo inglês com o tempo. Gostei bastante, mas achei difícil. Vou tentar continuar jogando fora da aula porque minha prima joga e vou poder conversar com ela sobre as tarefas e desafios pra fazer no jogo."

Larissa

APPENDIX 3 – Structured Interview Script

Roteiro da Entrevista Estruturada

Perguntas:

1. O que você achou de jogar o jogo digital *The Sims* na realização das atividades propostas pela professora?

2. Você poderia apontar aspectos positivos e negativos do jogo *The Sims* no seu processo de aprendizagem em inglês?

3. Você sentiu-se motivado a jogar este jogo digital? Comente sua resposta fornecendo exemplos quando possível.

4. Você pensa que seu nível de Inglês teve algum impacto ao jogar *The Sims*? Ou seja, você acha que aprendeu alguma palavra em inglês? Se sim, de que forma?

5. Você gostaria de comentar algo extra (sugestão, percepção, opinião, pergunta)?

APPENDIX 4 – Semi-structured Interview Script

Roteiro da Entrevista Semiestruturada

A entrevista é de natureza semiestruturada. Estas são possíveis perguntas, podendo ser alteradas durante a entrevista.

1. *(nome),* eu verifiquei que o número de acertos nos testes foram aumentando e seus resultados foram continuamente melhorando. Você considera que houve memorização das palavras?

2. Por exemplo, você errou bathroom no pré-teste, mas no pós-teste e no teste postergado, você acertou esta palavra.

3. Você considera que memorizou esta palavra? Se sim, porque? Esta palavra se relaciona ou se associa a algo pessoal em sua vida (motivacional ou emocionalmente)?

4. Você ainda se lembra de algumas palavras que aprendeu jogando The Sims nas aulas de inglês do semestre passado? Se sim, quais?

5. Como você justifica a memorização destas palavras em detrimento de outras?

APPENDIX 5 – Structured Interview Transcriptions

BIANCA

O que você achou de jogar The Sims na realização das atividades durante a aula?

Ah…(pausa longa)

Assim, em vez de ter atividades de leitura ou de escrita, né...assim, comparando o jogo com alguma atividade assim…

Eu achei melhor por ser mais dinâmico e não tão maçante que nem as atividades que a gente geralmente tem, que é tipo...tu senta e tu lê e escreve, é uma parada que tu meio é obrigada a estar aprendendo. O jogo é uma parada mais dinâmica que tu tem um interesse maior e gosta de tá aprendendo.

Aham...

Não é nenhum esforço tá aprendendo, fazendo aquela atividade

E você poderia apontar alguns aspectos positivos e negativos do jogo em relação ao eu aprendizado de inglês?

Positivo...acho que é….[Aspecto] positivo é que o jogo passa, tipo, a vida real, então meio que tu consegue se ver, tipo, nas suas atitudes do cotidiano, só que em inglês, e daí meio que tu já liga "ah tô fazendo isso" e daí o bonequinho do jogo faz e isso e daí tu "ah, então é isso".

Aham. sem precisar traduzir, ele mostra…

É, isso, tipo lava a mão, se tu clicar ali, é...não sei como se fala, mas é…

Hand washing?

Isso, isso. Aí tipo tu vai clicar e vai ver "ah ele tá lavando a mão, ah, é isso". E [aspecto] negativo, não sei….ah, é porque os americanos tem umas paradas que eu não conheço, não faço ideia, ah, quando...gírias, não sei se é gírias, ditados ou coisa assim…

Algumas expressões?

É, expressões, expressões que eu não conheço então não entendo. Tipo, como é….tipo, catar [inaudível] no sofá, que é tipo [inaudível] e eu não sabia o que era, tipo, e aí eu tive que pesquisar.

Ah. E você já jogava [The Sims] antes, né?

[participante acena que sim com a cabeça]

E tu continua jogando?

Não, porque eu cansei quando acabou. [inaudível] Mas no começo foi mais fácil pra mim, foi meio no automático porque eu já sabia o que tinha que fazer, mas eu não cheguei assim, a aprender realmente.

Mas no geral você acha que aprendeu algo?

No geral acho que sim.

É...você se sentiu motivada a jogar este jogo, The Sims, durante a aula?

Sim. eu já gostava e sempre gostei do The Sims, né?

Aham...e o fato de poder criar os personagens do teu jeito, acho que dá motivação né?

Sim.

E você acha que seu nível de inglês teve algum impacto ao jogar The Sims, ou seja, você acha que aprendeu alguma coisa em inglês?

Acho que sim, mas não acho que seja coisa….não sei. Acho que não dá pra colocar numa conversa o que aprendi, tipo, eu consigo relacionar as coisas que eu faço no dia a dia com o que aprendi, mas tipo, não vou saber, tipo, numa conversa não sei se vai ser tão útil assim.

É, porque ele tem bastante verbo do que a gente faz no dia a dia, né?

É...(pausa longa)

Não tanto de comunicação.

É, isso [sorri e acena com a cabeça].

Tá, e você gostaria de comentar alguma outra coisa relacionada ao jogo durante as aulas, ou a aprender inglês, você acha que dá pra aprender inglês?

Acho que dá. Alguma coisa dá pra aprender, tu vai ler, tipo, eu vi umas coisas que eu não fazia ideia do que era, tipo, desafios ou tarefas, assim, que eu não fazia ideia do que fazer e daí eu tive que..., então eu fui aprendendo por conta própria, ...pra aprender, então alguma coisa dá pra tirar disso, então é bem útil.

Mas então tu achou legal a proposta de jogar um pouquinho em casa aula? Foi legal ou não?

Quando funcionava internet, sim. [risos]

É, porque tinha este problema. Então é isso. Você quer falar mais alguma coisa?

Não, acho que não.

Tá, então obrigada.

DANIEL

O que você achou de jogar The Sims nas atividades de sala de aula?

Eu achei legal, o jogo era bem….As imagens era legais e positivas. Tipo, foi interativo, tá ligado? Saiu um pouco do padrão das aulas que é tipo...ficar sentando, copiando do quadro… (pausa longa)

É...às vezes tem atividade só escrita, de leitura né?

Aham.

Você já tinha estudado inglês antes?

Já, mas no fundamental que é aquela coisa…(pausa)

Isso, aquela coisa parada, assim, né? A proposta [minha] era exatamente trazer uma coisa diferente. Tá, então vamos seguir. O que você pode apontar de aspectos positivos e negativos do jogo?
Ah, positivo é que ele trabalhava bem com as imagens, tá ligado? Tipo, o texto tava em inglês e o cara não entende, mas as imagens ajudam bastante a ver como que é que se faz.
Sem precisar traduzir, né?
Aham, sim.
Tipo, tu vê que é...
Que tem que fazer isso.
Isso.
Tipo, tomar banho lá, daí eu não sabia o que era…(pausa)
Mas depois que via [o texto] sabia, né? Fazia a associação.
E também o negativo é que demora demais, tipo ir trabalhar demora 12 horas, 20 horas.
Aham…Daí tem que parar de jogar, né, porque não tem mais o que fazer [no jogo]. E…
A internet também às vezes era ruim né? Era impossível jogar.
Tu conseguiu baixar no teu celular o jogo?
Consegui, consegui, eu jogava [inaudível].
Tá, aham. E a [pergunta] 3. Você se sentiu motivado a jogar The Sims? Você achou que era legal, tinha vontade de jogar?
Ah...sei lá. Tipo…[inaudível] eu já conhecia o jogo, tá ligado? Mas….
Você já tinha jogado antes?
Acho que no Playstation já. Eu achei legal, legal. Tipo, não o melhor, mas….eu achei divertido.
E você acha que seu nível de inglês teve algum impacto, ou seja, você aprendeu [inglês]?
Eu aprendi, tipo, algumas profissões, alguns verbos, tipo, eu não sabia colocar aquele "to" no início...da frase, sabe?
Aham. É, na verdade, você e outro colega tiveram um número maior...
Número de acertos?
Maior número de acertos. Vocês foram melhor [nos testes], então acho que você realmente aprendeu as palavras. Não sei se você conversava com os colegas na hora de fazer a atividade [teste]? Você copiou alguma coisa ou…?
Não, fiz sozinho.
É, então você conseguiu realmente aprender algumas palavras. Tem alguma que tu lembra?
Profissão, verbo, ou….?
Tanto faz.

Ah, tinha aquela *firefighter*, tinha aquela *build house*, tinha *window* na *house*, tinha *roof*, ah…
Legal. Beleza, então tá ótimo.
Acabou então?
Pra finalizar, a última. Você tem alguma coisa pra acrescentar, algo extra, alguma sugestão, alguma coisa no geral? Você acha que dá pra aprender [inglês] jogando?
…
Se você achou legal jogar na sala de aula?
Eu achei legal The Sims, e outros jogos também dá pra utilizar [na sala de aula].
Aham, e tu joga outros [jogos]?
Sim, mas agora não tem muito tempo [risos]
[risos] Tá, então tá, é isso. Valeu, muito obrigada.

FLÁVIA
O que você achou de jogar The Sims na realização das atividades na sala de aula...assim, comparando com uma atividade escrita, de leitura? Você achou que foi mais legal o jogo? E porquê?
Eu achei que foi mais legal o jogo. No início eu tava muito, muito animada com o jogo, mas depois fui desanimando assim...porque é um tempo muito curto para o jogo e daí eram as coisas pra fazer num tempo muito longo, e daí uma aula já ocupava sei lá um negócio que o personagem ia fazer.
Porque às vezes tinha que trabalhar, por exemplo, e daí contava horas. É verdade. Então você poderia apontar alguns aspectos positivos e negativos do The Sims?
O negativo é o wi-fi que nem sempre ela funcionava. Dependia do tempo.
Aham.
E o positivo...sei lá...eu gostava bastante do jogo, mas não sei um ponto positivo que chamou muito muito minha atenção assim. Só o inglês ali que ajudava muito. [risos]
Tá...e você então se sentiu motivada a jogar esse jogo? O The Sims?
Sim. Porque eu já tinha jogado antes e quando a professora falou que ia passar na aula eu fiquei bem feliz assim.
Tá. E tu achou que deu pra aprender assim...dava pra aprender?
Dava. Se a pessoa...se a pessoa se esforçava muito dava pra aprender. Tudo que ela lia e ia no tradutor.
Hum…. então tu acha que, assim, as imagens não ajudavam?
Ajudavam. Mas às vezes aparecia três opções pra uma imagem só, então daí precisava.

Daí tu ia e traduzia?
É...
Hum. Tá. E você pensa que seu nível de inglês teve algum impacto, ou seja, você aprendeu alguma coisa?
Assim, minha memória é muito ruim. E daí eu ia lá [jogava], pesquisava o que significava a palavras...mas eu não lembro, sabe? Tipo, eu sei que tinha bombeiro, mas eu não lembro a tradução de bombeiro. O que aparecia lá eu não lembro de quase nada.
Tá, aham. E, por último, você tem alguma outra sugestão, alguma coisa que foi legal do jogo….
Eu gostei do jogo, mas eu acho que precisava de um tempo maior. Eu acho que precisava de um jogo com esse tempo de trabalho menor, sabe?
Aham. Ou mais tempo na aula, tu diz?
É, tempo maior…
Ah tá. É que daí fica um tempo ocioso, né? Você coloca eles pra trabalhar e tem que, né, esperar….
É, não tem outra opção.
Tá, então é isso. Obrigada.

RAQUEL
O que você achou de jogar The Sims na realização das atividades na sala de aula?
No começo eu não...Assim quando a professora falou né "vamos jogar The Sims" eu fiquei meio assim... sabe? Eu achei que não ia gostar muito.
Então você não tinha jogado antes?
Não, eu só tinha... tipo, eu já tinha visto as pessoas jogar, então eu não tinha jogado, aí eu achei que eu não ia gostar... mas aí depois que a gente começou a jogar, eu comecei a gostar bastante!
Ah, que bom! Beleza. Mas você acha assim, que em relação ao invés de ter uma atividade com papel e texto e tal, você acha que é melhor?
É bem melhor…
Porque dá para aprender algumas palavras né?
Aham.
E você poderia apontar alguns aspectos positivos e negativos do jogo?
Hum...positivo é que, por exemplo, ele faz aquela associação com o nome e a imagem, por que por exemplo, se fosse só o nomezinho não é…(pausa)
É difícil né?
...eu não conseguiria entender. E aí tipo a imagem...tem todo aquele negócio da imagem. Por exemplo, tu vai construir uma casa, aí tu constrói a casa, daí tu vai lá e procura o negócio da porta, e tal….aí eu gostei

bastante disso. [Aspecto] negativo? Eu não consigo pensar em um ponto negativo… É mais em relação à internet da escola e não necessariamente no jogo.
E tu gostou mais de construir as pessoas ou as casas?
As casas. [risos]
É? E você se sentir motivada a jogar The Sims? Você acha que foi legal?
Nossa, eu amei! Sério, eu amei jogar The Sims! [risos / inaudível]
Então tá...e você acha que o seu livro de inglês teve algum impacto ao jogar The Sims?
Eu não sei avaliar muito bem isso…. mas se for parar para pensar nas coisas que eu aprendi antes, que eu sabia antes….se aprendi…. eu acho que sim! Porque eu aprendi algumas palavras novas que eu não sabia enquanto eu jogava - de partes de casa: tipo *door*, *windows*, *lamp* que é abajur. Essas coisas...
Hum... tá legal. E por último, você quer comentar alguma coisa, alguma percepção, opinião do jogo se você acha que é legal, se dá para aprender?
Eu acho que esse jogo é incrível e que a professora deveria continuar jogando com seus alunos porque ele é muito legal mesmo!
Tá bom, obrigada!

MARCELO
O que que você achou de jogar The Sims no período da aula?
Eu achei bem diferente assim tu vir com essa proposta porque a gente nunca tá acostumado a isso; a gente sempre está acostumado com caderno, tal, textos...mas essa essa dinâmica diferente com jogo achei bastante interessante.
E você pode apontar alguns aspectos positivos e negativos do jogo?
Positivos...Principalmente as imagens, o entretenimento ali que te ajuda a ver os personagens fazendo aquilo. Isso tudo ajuda muito, seja na tua linguagem, seja em tudo isso. E negativo… principalmente o tempo das coisas que demora muito para fazer cada coisinha no jogo; seja na profissão, seja para simplesmente plantar e ir no banheiro e isso demora horas...
Ah sim, no contexto de que ações demoram horas infinitas e daí a gente tem que parar de jogar. Tá...E você se sentiu motivado a jogar o The Sims?
Sim, motivado. Agora principalmente porque a gente vê que o inglês vai usufruindo mais na sua mente com cada coisa; e não só o The Sims. Agora já estou me sentindo mais motivado pra jogar outros jogos em inglês para ver se ajuda mais…

Aham.
Porque essa experiência já tá fazendo parte da minha vida e tá demonstrando estar ajudando eu…(pausa)
Ah legal, e então você acha que o teu nível de inglês teve algum impacto, ou seja, você aprendeu algumas palavras?
Algumas palavras com certeza eu aprendi, porque olha, uma coisa muito falha da minha vida - que era meu nível de inglês, e isso me ajudou e vai me ajudar daqui para frente na minha vida escolar ou no nosso cotidiano
Sim, é bastante coisa relacionada ao dia a dia né? Coisa que a gente faz de verdade na vida real a gente fazia no jogo também. Beleza! E por último, você gostaria de comentar alguma coisa extra?
Achei bastante válido o que a professora fez que foi trazer esse dinamismo pra aula, essa coisa diferente que a gente não tá acostumado. Isso ajudou muito no entendimento das coisas.
Então tá beleza. Você lembra aquela primeira atividade depois da segunda que foi igual? Você foi o que mais acertou entre um e outro, sabe? Então realmente tu aprendeu bastante!
Sim, eu sei lá...eu tentava me concentrar mais...
Aham...beleza. E agora sim, a última. Alguma opinião sobre jogo na sala de aula?
Opinião não sei, mas eu só queria dizer que ele foi interessante. Isso de alguma forma é uma coisa que eu nunca tinha conhecido assim, e tudo isso aconteceu na escola. Aproveito também tá aprendendo.
Então tu aprendeu? Tu acha que tu aprendeu?
Aham
Então tá, pronto.

HELENA
O que você achou de jogar The Sims nas atividades na sala de aula?
Eu achei bem interessante, porque ele juntou a forma de querer ensinar em inglês com uma coisa que tá tão ligado hoje que é o celular. E eu achei isso uma forma muito interessante, bem atual.
E você poderia apontar alguns aspectos positivos e negativos do The Sims?
Ah, negativo eu acho que é….porque meu celular trava muito. Ele trava muito e aí o jogo acabava travando e aí eu acabava me estressando porque eu tinha que desligar de novo o celular pra conseguir jogar. E um [aspecto] positivo é que o jogo é bem dinâmico, dá pra montar casinhas, criar personagens e isso é bem legal.
E você chegou a que nível?
Eu cheguei...eu tava no seis e acho que já ia pro sétimo.

Ah, então você não tava atrasada, tipo….não demorava muito tempo para recomeçar o jogo?
Não….
É, tá. E você falou alguma coisa de ponto positivo….Hum...você acha que, assim, dava para entender o que estava sendo pedido em inglês sem traduzir...só com as imagens?
Era, mas eu também acabei não prestando atenção. Às vezes, eu ia passando assim, olhar só a imagem e não a palavra, não aprendendo tanto quanto eu poderia ter…
É, até porque tem bastante coisa da vida real, né... de estudar, quer dizer, trabalhar, tomar banho, comer,...coisas que a gente acaba utilizando na vida real também.
Aham!
Tá, e você se sentiu motivada a jogar esse jogo?
Bom, no início eu não gostei muito. Eu nunca tinha jogado The Sims e eu não gostava tanto. Depois eu fui me adaptando e fui gostando de jogar.
E tu acha que jogar com todo mundo ajudou a você querer ficar jogando?
Ah, eu acho que sim, porque daí ao meu redor estavam jogando também não era uma coisa assim individual assim só eu jogando. E era legal, porque a gente via o personagem do amigo, via como que estavam, às vezes a gente brincava...criava irmãos um do outro [risos]. Bem legal.
E você pensa que o seu nível de inglês teve algum impacto para jogar The Sims?
Acho que...é...muito pouco, porque às vezes eu deixava passar despercebido a palavra, acabava não entendendo o que pedia anteriormente. Eu acho que eu deveria prestar mais atenção nas palavras e não consegui...
Mas tu acha que dá para aprender inglês? Assim, pelo menos algumas palavras como era o objetivo de aprender algumas palavras no nível básico?
Acho que sim.
Ok, então você tem algum comentário extra, alguma sugestão, opinião…?
Ah, eu acho que uma sugestão é que continue estes novos métodos de ensino pra aprender inglês, porque eu acho que é muito legal, bem bacana, interessante.
Então tá, prontinho. Obrigada!

GABRIELLE
O que que você achou de jogar o jogo The Sims aqui nas atividades na sala de aula?

Achei bem legal, ajuda bastante no aprendizado (pausa).
E em comparação às atividades de texto, de leitura, de papel mesmo... tu acha que foi mais... tu gostou mais ou tu prefere aquelas mais tradicionais?
Ah, eu gostei mais porque dá pra entender melhor e tem a ajuda das imagens.
E você poderia contar com os aspectos positivos e negativos do The Sims?
Ah, ajuda bastante a gente ler os textos e atribuições e tal. O ruim é que o local não colaborava muito, tipo, a internet, essas coisas...mas é bem legal.
Às vezes não funcionava, né? Mas tu conseguiu baixar [o jogo] no teu celular né?
Sim.
Tu já jogava antes ou não?
Eu já joguei uns anos antes.
Então você se sentiu motivada a jogar este jogo, né? Você gostou e quis continuar...
Sim. Aham, mas daí baixei no computador porque é melhor.
Hum, baixou...
E tá em inglês.
Em inglês?
Sim.
E você pensa que o teu nível de inglês teve algum impacto? Porque assim, a gente começando no [nível] básico, na teoria dá pra aprender um pouco mais palavras pois a gente sabe um pouco menos de inglês. Você acha que realmente conseguiu aprender algumas palavras?
Sim (pausa).
E de que forma isso te ajudou a aprender?
Eu consigo ler melhor, eu consigo gravar a palavra para poder escrever depois. Eu consigo entender os textos, ler e saber o que tem que fazer.
E tu precisava traduzir a palavra ou tu ia na tentativa de fazer associação com as imagens?
Às vezes eu associava, tentava, mas às vezes eu pesquisava no dicionário.
Mas você acha que aprendeu alguma coisa?
Sim (pausa, olha para o relógio).
E você acha que aprenderia melhor como estava no jogo ou se estivesse numa atividade tradicional, de papel, com texto?
Ah, o jogo é melhor pra aprender. O fato de ter todo mundo jogando ajudava né?
Por último, você quer comentar alguma coisa? Alguma sugestão, alguma opinião? Assim, se você acha que dá pra aprender, se você gostou…?

Ah, eu gostei e dá pra aprender bastante.
Tu tem algum exemplo de palavra que tu lembra?
Ah, eu não sei falar, mas eu sabia, tipo, quando eu lia eu sabia o que é bombeiro, lâmpada, banheiro, boca...
E tu gostava mais de construir as casas ou os personagens?
Os personagens. Eu tentava fazer alguém que eu conhecia.
Então é isso, legal, prontinho. Já acabou. Obrigada.

WILLIAN
O que você acha de jogar The Sims aqui na sala de aula?
Eu achei bem interessante, porque é um método bem diferente de aprender inglês, e a gente sempre ouviu falar das pessoas que jogam e que tem um contato com jogos eletrônicos e que quando tá em inglês, acabam aprendendo um pouco mais, porque tem a questão de associar as imagens aos comandos, e daí acaba facilitando a associação do que a palavra quer dizer com o significado dela ou com a ação que ela está representando. Então eu acho que foi uma dinâmica diferente e que talvez seja bem importante para nível académico, principalmente nos níveis mais iniciais...o aprendizado através de jogos e experiências digitais com a língua inglesa.
Porque daí também não fica só naquilo de tradução né? Como ali [no jogo] tem a imagem, acaba aprendendo por associação e não pela tradução né?
Sim! A escrita por exemplo... a gente já tá de saco cheio, muita gente não consegue nem o português, imagina o inglês que está pouco habituado. Então fica um pouco complicado e tira um pouco do interesse. No caso do The Sims estimula a leitura em inglês para poder avançar no jogo tem um objetivo a mais sem ser acadêmico, ou passar de ano, sei lá….
Entendo. E você poderia apontar alguns aspectos positivos e negativos do jogo?
Então, positivo que eu acho é o aprendizado através da associação da imagem com os comandos do jogo. O aspecto negativo seria mais do ambiente onde a gente tá praticando essa atividade. Seria a internet. Ou o celular, que foi o instrumento que a gente utilizou para jogar o jogo. Ele é um objeto pessoal e não é fornecido pela escola, então nem todo mundo teve a mesma experiência com o jogo...ou o celular tinha problema de memória, ou o celular tinha problema em conectar na internet da escola, que é boa mas também não é aqueeela internet potente e….e eu acredito que seja isso. É mais pelo fato de ser uma atividade que exige da pessoa ter o instrumento pra realizar ela. Se fosse fornecido pela escola seria mais….seria um sonho, né?

Realmente. A terceira pergunta. Você se sentiu motivado a jogar ou meio que depois foi ficando meio cansado?

Olha, no começo eu fiquei bem motivado! Eu peguei qual era a intenção da professora. Pô, The Sims é um jogo que simula a vida real e tu tem que fazer os bonequinhos, realizar as atividades do dia a dia, e é um jogo que tem muito texto, e em inglês né? Então tu vai ter que ler pra tentar fazer os objetivos. Então sempre quando tinha as mensagens com as ações ou a missão ou o que te bloqueou, eu tentava ler. É….eu tenho um conhecimento prévio, assim, de inglês, então eu consigo ler e entender pelo contexto, entender boa parte das frases. No começo então tava super legal, meu Deus! Eu tenho que ler e depois eu não entendia, daí dava aquela preguiça de procurar no dicionário, que já ia ser um empenho a mais, pra uma coisa que talvez eu ia entender ou talvez não, mas….(pausa)

Mas em algum momento você ia assim por tentativa "vou tentar isso, ou isso" ou você sempre procurava traduzir?

Eu procurava traduzir quando... principalmente quando eu não sabia o que fazer. Teve uma missão que eu empaquei ali e mesmo lendo a tradução das palavras, eu não tava entendendo o que o jogo tava querendo que eu fizesse, daí aconteceu alguma coisa que eu passei, e até hoje eu não sei o que fiz.

Tá, e você acha que o seu nível de inglês teve algum impacto, ou seja, você aprendeu inglês, algumas palavras, ao jogar The Sims?

No começo eu tinha aprendido. No começo eu via as palavras e pensava "ah, essa palavra quer dizer esse objeto", mas como eu disse no meu texto ali, professora, o aprendizado exige treino e prática, daí como eu não jogava durante a semana, e depois eu parei de ler um pouco porque no início eu conseguia comprar os móveis e no início desbloqueava bastante móveis, daí eu ficava passando pra ler. Só que daí sempre que eu passava de nível, desbloqueava outros móveis, então eu passei direto, eu não tava mais associando o nome com a imagem do objeto. Então eu parei de ler. Então o exemplo da geladeira. A professora botou lá [na atividade] "comprei uma geladeira" na atividade...*to buy*, sei lá, *to buy a*….daí….eu esqueci. Eu acho que botei na primeira só que depois eu esqueci o que era geladeira. Esse é um exemplo. Mas, tem uma palavra que procurei no dicionário, inclusive, e que tá na minha cabeça até hoje, que é *claim*, que eu procurei no dicionário e é reivindicar. Tá na minha mente, gravou.

Então que bom, alguma coisa aprendeu né?

Sim, entre outras várias coisas.

Aham, ótimo. E por último, você quer comentar alguma coisa extra , ou você tem alguma sugestão ou alguma opinião do jogo? Você acha que dá para aprender [inglês] ou não?

Cara, eu acho que a proposta é excelente, só que vai também um pouco de cada pessoa porque, por exemplo, eu no começo tava super motivado e tava tentando seguir a proposta à risca de ler os textos e, através da tradução, eu buscar os objetivos do jogo. Só que eu tenho certeza, eu posso tá errado, que a maioria foi só jogando e apertando por aí no celular...essa imagem tá pedindo isso, nem lê e vai lá e clica. Não leu o texto que se refere àquela imagem ou ação, e daí isso pesa um pouco. Daí talvez isso tenha influenciado no não-aprendizado. Mas quem se esforçar e tentar mesmo buscar entender o que está fazendo, eu creio que seja uma ótima ferramenta pro aprendizado.

Ok, hum... então está ótimo. Acabou. Muito obrigada

APPENDIX 6 – Semi-structured Interview Transcriptions

BIANCA

Então a gente fez três testes, estes daqui, e eu vou compará-los, tá? O segundo foi aquele que a gente fez logo quando acabaram as sessões de jogos na aula, e o terceiro é aquele que a gente fez lá no final do semestre, tá? Então aqui, olha, nesta atividade, no teste 2, você errou a palavra 'trocar', 'trocar de roupa', e no terceiro teste, você acertou. Você lembra porque você memorizou esta palavra depois de um tempo sem jogar?

Hum ...(pausa)

Ou se você chutou nessa, o que você…?

Hum… eu acho que tipo. foi quando esse?

Foi logo depois do jogo, este.

Depois do jogo?

Sim.

É, não sei….porque, tipo agora, não sei. Isso não tem nada a ver com 'trocar' [apontando pro teste], e eu não, não… (participante sinalizava que não com a cabeça)

Talvez foi falta de atenção ou alguma coisa assim?

É, não sei….talvez eu tenha visto em algum...é porque, tipo. depois eu, eu acho que eu vi em algum lugar.

Hum, depois?

... (acena com a cabeça em dúvida, demonstrando embaraço)

Hum beleza. Aqui, olha, tem outra palavra. Deixa eu achar. No teste, logo depois do jogo, você acertou 'telhado' [apontando para a atividade no teste 2], mas depois de umas duas ou três semanas, você errou. Você esqueceu desta palavra, ou. lembrou do que estava mais fresquinho? O que você acha? Ou você acha que você esqueceu aquilo?

….não sei. Acho que eu confundi. Isso é coisa de casa também, não é? [apontando para o teste 2, palavra *wall*]

Aham.

O que que é? Não sei.

Wall?

É.

Wall seria parede.

É, não sei, confundi. Porque no jogo tem uma sessão de parede, chão, porta, tudo junto, então acho que confundi.

E…

Tipo, aqui [apontando para uma alternativa assinalada corretamente no teste 2] normalmente eu acertei porque estava mais fresco, hum, sei lá….

Aham. e como aqui [apontando para o teste 3, 'trocar de roupa'] ficou mais tempo sem o jogo, esqueceu?
Eu acho.
Hum, é o normal, né? Tipo assim, a gente estuda e...passa um tempo, a gente não lembra de tudo, tudo.
O que eu lembro é de já ter visto a palavra, entendeu? (participante demonstra preocupação)
Aham. Tá tudo bem. Daí, nesta última atividade, 'trocar de roupas', você tentou, né, talvez, colocar, tem duas palavras e você tentou fazer só uma…
Sim…
Que ficou incorreta, mas essa daqui, [no teste] 3, 'trocar de roupa', você acertou e foi a mesma coisa, depois de um tempo sem jogar na sala. Você gravou, ou talvez aqui no teste 2 você tentou chutar? O que você acha: porque você memorizou essa depois de tanto tempo sem jogar?
(participante em silêncio, pensativa)
É alguma coisa que você gosta, que você associa com alguma memória?
Não, eu acho que é só por…. (pausa). Não sei te dizer, assim. Não sei como que eu sei.
Mas hoje se eu pedir como é 'trocar de roupa', você ia lembrar?
Não.
Não? É porque faz muito tempo? Você continuou jogando?
Hum. Não, depois daquele semestre não. Eu queria [ter] continuado, mas depois parei. Talvez tenha sido por isso.
Tá, talvez você conseguiu ainda aprender essa mesmo depois que acabaram as sessões de jogos?
Sim... (participante demonstra preocupação, fica vermelha e veste a blusa).
Tá, tudo bem. E a última pergunta é que aqui….
...ou nas aulas mesmo, porque nas aulas tinha algumas coisas sobre isso.
Hum. Tudo bem. E nessa atividade aqui [apontando para o teste] que a gente tinha que assinalar a descrição, né? Tipo, to build seria 'construir', mas aqui não tinha a tradução, tinha a descrição, e no teste 2, você deixou em branco. Essa era uma instrução minha, né? Não lembra, deixa em branco, não chuta. E aqui [apontando para o teste 3] você acertou. Porque você acha que depois de um tempo sem jogar pra minha pesquisa, você lembrou dessa? Você aprendeu, ou você lembrou?
Eu acho que aprendi na aula, eu vi isso. É um verbo, né? Ou por…(pausa) ou por não ter achado que as outras [apontando para o teste], hum….(pausa)
Por exclusão?

É, porque eu lembro de ver no jogo nas aulas, no jogo principalmente tinha a ver com isso, com construção...mas eu não lembro de tudo, hum... [inaudível] desse jeito.
Tá, aham, tá ótimo. É isso.

DANIEL
Olha só, do primeiro teste que foi feito em agosto até o último que foi feito no finalzinho de novembro, dia 29, você foi de 10 acertos pra 22, então tu memorizou 12 palavras. Você sente que você aprendeu algumas palavras? Olhando hoje, depois de um tempo, você lembra de algumas palavras por causa do jogo?
Eu acho que aprendi, porque tipo, meu inglês agora tá bom, tá melhor, bem melhor do que era antes. Eu não sabia nada e depois que eu comecei a jogar eu comecei a tipo, dar uma evoluída, sabe?
E você, se fosse hoje, se a gente aplicasse este teste, ou pegando na tua memória, você lembra de alguma palavra que tinha no jogo? Você saberia me dar alguns exemplos de palavras que você aprendeu lá no jogo The Sims?
Eu acho que deu pra evoluir, tipo, eletrodomésticos, freezer, tem também os móveis, peraí, não lembro muito bem agora…. (silêncio, pensativo)
Tinha as partes da casa…
É, tinha parede, janela. Na época que eu tava jogando eu aprendi, sabe, mas agora eu esqueci. Por isso que eu fui bem no segundo teste, mas agora que eu parei de jogar eu dei uma esquecida.
Então você acha que você acertou tanto porque você continuava jogando? A frequência te ajudou, né?
Sim (acenou com a cabeça positivamente).
Olha só [apontando para o teste 2], no teste 2 você errou, quer dizer, assinalou errado a descrição da palavra to buy, que é comprar, e no teste 3 [apontando para o teste 3], que era depois de duas ou três semanas sem jogar, você acertou a palavra comprar. Você acha que você aprendeu essa palavra depois ou que você chutou essa palavra aqui?
Não, eu não acho que chutei, não mesmo. Como falei, fui evoluindo, sabe?
Hum...é. No teste 2, aqui [apontando para o teste 2] você acertou tomar banho, olha, take a shower, e neste daqui [apontando pro teste 3], você já colocou take a wash, e wash era uma palavra pra lavar as mãos, até tá aqui [apontando pra atividade 1]. Porque você acha que você se confundiu? Lembra que aqui [apontando para o teste 2] foi logo depois de jogar, e aqui [apontando pro teste 3] foi um tempo depois sem jogar. Você acha que….

...ah, tipo, é, porque é parecido, né? Tipo, no jogo tinha que colocar o boneco pra tomar banho, *take a shower*, e tipo, eu não lembrava, e…. hum... (pausa longa)
E aqui você se confundiu, ou esqueceu?
É, eu...confundi.
Ok, tá. É, a mesma coisa aconteceu com 'assar biscoitos'. Aqui [apontando pro teste 2] tu colocou errado, e até acertou cookies, mas assar tu não conseguiu [apontando pra resposta do aluno: ass]
(fica envergonhado / risos)
E isso daqui você sabe, né, que não é certo, é um palavrão, na verdade.
É…(risos)
E aqui você deixou em branco, tu nem tentou. Você tinha esquecido, ou….?
...Eu nem sabia nada, nem como era assar.
Hum, tá. Porque eu tinha dado a instrução, né, deixa em branco se não lembrar, então aqui você não lembrava. Tu lembra hoje como é assar biscoitos?
Assar biscoitos? Não, só sei como é biscoitos…
Só cookies?
É, só *cookies*.
É, assar biscoitos seria 'to bake cookies'.
Bake não é cozinhar?
É assar, fazer coisas no forno. Cozinhar mesmo é' to cook'.
Ah tá.
Ok, então deixa eu fazer a última pergunta pra ti. Neste primeiro teste, você não…. você assinalou bathroom, que é banheiro, você colocou como se fosse quarto. E nos outros dois testes, você acertou, né? Você assinalou banheiro bem certinho. Eu queria te perguntar se você já sabia o que era banheiro antes de jogar?
Não.
Então você aprendeu com o jogo essa palavra?
(participante acena com a cabeça positivamente)
Ótimo. E como você justifica você lembrar desta palavra?
É, tipo, nem é lembrar. *Bathroom*... eu lembrei que quarto é *bedroom*, e não faz sentido *bath* porque *bed* é cama, sabe? E *bath* eu associei com o banheiro, mais fácil pra gravar, sabe? Separar *bedroom* e *bathroom*.
Então no geral você aprendeu, né? Como te falei, você foi de 10 pra 20 e pra 22, ou seja, mesmo depois sem jogar, você ainda memorizou mais palavras, de acordo com o teste, então teu resultado foi bem legal. Isso quer dizer que você aprendeu alguma coisa com o jogo! Você lembra de alguma palavra pra me falar do jogo?

Do jogo?
Uma palavra que você se lembra do The Sims.
Sei lá, tipo, *bathroom*, *take a shower*, como eu falei, tinha *buy* que era comprar as coisinhas lá, tinha ah….do resto, dos móveis e eletrodomésticos eu não lembro muito bem. Tinha *change clothes*, trocar de roupa.
Isso! Ah, então tá ótimo. Você tem mais alguma coisa pra falar?
Não, não.
Então vou encerrar. Obrigada.

FLÁVIA
No primeiro teste, você deixou 11 atividades, 11 em branco, e no terceiro teste você deixou só 9; reduziu. Porque você acha que reduziu? Você conseguiu ir... aprendendo [menos questões em branco, neste caso, significaram mais tentativas de acerto e/ou acerto efetivamente]?
Sim, porque o primeiro a gente fez bem no início das aulas, antes do jogo até, e o último foi depois e eu consegui aprender algumas palavras.
Hum... Se eu fosse te perguntar hoje alguma palavra que você lembra do jogo, você consegue lembrar algumas palavras?
Ah, bem poucas….tipo, ai, acho que não lembro de nenhuma, na verdade. É que assim, seu ver a palavra, do jogo, eu consigo lembrar e traduzir, mas assim, de cabeça, não consigo lembrar (risos).
Aham, aham. Tá ótimo. Agora vamos para as perguntas mais pontuais. Neste primeiro teste, você acertou essa palavra aqui, t-shirt, que é camiseta, você assinalou correto, e depois, aqui no teste 2 e no 3 eu acho, é, isso, você associou com calça. Ou seja, estaria incorreto.
Hum...Aham.
Você talvez aqui [apontando para o teste 1] você chutou e nessas você não sabia [apontando para os testes 2 e 3], ou você esqueceu ao longo do jogo?
Na verdade, eu acho que é porque eu tenho uma calça com esta marca, e acho que associei com esta marca da calça, que no caso a marca da roupa inteira, mas eu tenho a calça.
Sim, entendi. Acontece. Relacionar. Deixa eu ver outra pergunta. No teste 2, você conseguiu acertar aqui na atividade 4, to buy e to build, que é comprar e construir. Mas aqui no terceiro teste, depois de parar de jogar, você deixou em branco. E era uma instrução minha: não sabe, deixa em branco. Aqui [apontando para o teste 3] você já tinha esquecido?
Eu acho que eu já tinha esquecido. E depois deste teste a gente continuou a jogar, na sala?

Neste? No teste 2...foi logo depois da sessão de jogo. Porque a gente jogou 8 sessões, e na última eu fiz este [apontando para o teste 2].
Ah, então deve ser por isso que eu lembrei.
Porque estava mais fresquinho né?
É... (pausa)
E aqui no teste 3 [apontando para o teste 3], você acertou workplace, que é local de trabalho. Mas aqui, no teste 2, que foi logo depois de jogar, tu deixou em branco.
Esse daqui...eu acho que eu, hum...eu lembrei, lembrei da área da polícia, alguma coisa assim, por isso que eu lembrei que era local de trabalho.
É, a mesma coisa acontece com 'parede', 'lâmpada', porque na verdade lamp é abajur [apontando para a palavra escrita incorretamente no teste 2].
Hum… (pausa)
E na verdade, essas atividades de escrever são as mais difíceis porque você tem que realmente memorizar, é diferentes dessas daqui….
….aham, é...de assinalar, que já tem as respostas.
E aqui, no caso, telhado, tu não conseguiu lembrar, em nenhum [apontando para os testes].
É que ... eu nem cheguei a mudar o telhado, tipo, se eu mudei, foi bem no início das configurações, então foi bem no início e depois eu não lembrava.
É, hum...porque depois foi esquecendo. Porque no primeiro teste você acertou [apontando para o teste 1], e depois ficou em branco e depois você tinha assinalado certo, mas depois colocou que era essa [apontando para a alternativa no teste 3]. Errou. Tá, mas tá ótimo. Só me diz como….tem algumas palavras que você memorizou mais, por exemplo, comer.
Sim. É, memorizei bastante essa.
Porque você acha que você memorizou comer, e não comprar ou construir, por exemplo?
É que eu acho que assim... comer é algo mais comum que eu faço, eu... menor de idade, é mais fácil comer..., em jogos online, ver 'comer' do que 'comprar'.
Então você associou com….com uma realidade...tua.
É, sim.
Ok, então é isso. Você quer contribuir com mais alguma coisa?
Não.
Obrigada.

RAQUEL

Então, olha só [com os testes em mãos]. Ao longo dos testes, o teu número de acertos foi aumentando: foi de 12 no primeiro, pra 17 logo depois de jogar, e no último foi 14. É normal isso acontecer, porque no teste 2, logo depois de jogar, tá tudo mais fresquinho e aqui no último acho que era 2 ou 3 semanas então é normal, sabe, diminuir um pouco, por causa da frequência. Mas eu vou te fazer algumas perguntas pontuais, tá? Então, por exemplo, no primeiro teste, você, antes de jogar, havia assinalado t-shirt como sendo uma calça. Mas depois de jogar, você assinalou na verdade correto, t-shirt é uma camiseta. Porque aqui [mostrando o teste 2] você assinalou assim? Você aprendeu ou você chutou no primeiro…?

Eu acho que no primeiro eu tentei associar com *short*, sabe? Aí eu tentei mas depois foi por causa do jogo mesmo, porque tinha que trocar de roupas, e tal, e aí eu acertei.

Aham, então é uma palavra que você aprendeu no jogo?

Sim.

Ótimo, que bom. Porque esse era o objetivo, né, que você aprendesse algumas palavras. Tá, no teste 2, deixa eu achar aqui. No teste 2, nesta palavra workplace, você deixou em branco. Era uma instrução minha, né, se não lembra, não chuta. Deixa em branco.

Sim.

Mas no último teste, você acertou workplace, você colocou local de trabalho, que era quando o bombeiro ia trabalhar no workplace.Porque você lembrou dessa palavra depois de um tempo sem jogar? Como você associou? Ou você associa esta palavra com alguma coisa na tua vida?

Olha….na verdade, eu não sei. Esse daqui foi bem depois de ter jogado?

Isso.

Ah, então espera… [pausa silenciosa]

Ou talvez aqui [teste 2] você deixou em branco porque não tinha certeza?

Eu acho, então, que porque aqui [apontando pro teste 3] eu acertei eu não, eu não lembrava mesmo e deu um branco, e aqui [apontando pro teste 2] eu tentei associar o *work* com trabalho e *place* com lugar, sabe? Aí eu fiz essa associação e já consegui lembrar. Acho que aqui [apontando pro teste 2] deu um branco mesmo, e eu não, não lembrei.

Hum…é….é engraçado porque logo depois de jogar você não colocou nada, mas depois… ficou, né? Foi uma palavra que você lembrou. Deixa eu ver a próxima. Trocar. No primeiro teste, você deixou em branco trocar, que seria trocar de roupa no jogo, mas no teste 2 e no teste 3 você assinalou to watch. Mas to watch não significa trocar, significa assistir alguma coisa. O correto aqui seria a letra d, to change, mas você errou

nos dois. Eu queria saber se você chutou aqui ou se realmente você achou que to watch é trocar.
Eu…. na verdade, eu achava que era trocar mesmo (risos). Talvez eu tenha associado errado na hora que….a maioria das coisas que eu aprendi foi com o jogo, né, e talvez eu tenha associado errado aqui. Porque tinha né? Assistir tv e trocar de roupa. Mas eu achei mesmo que era trocar! (risos) Porque eu achei que *to change* era chance ou alguma coisa assim.
Aham….hum. No teste 1, nesta atividade também, tem aqui telhado, que você deixou em branco, e depois aconteceu a mesma coisa, você assinalou, mas assinalou a alternativa que diz 'parede', porque wall é parede. Também, mesma coisa…
É, eu associei errado.
Hum. Tá, deixa eu ver se tem mais alguma coisa. Workplace, trocar, t-shirt….eu acho que era mais ou menos isso. É, deixa eu ver alguma coisa aqui. As atividades...também [deixadas] em branco, porque no primeiro teste você deixou 11 em branco, depois você passou pra 5 e pra 7, então algumas palavras você foi aprendendo, né?
Aham.
Você conseguiria lembrar alguma palavra hoje pra me falar? Do jogo?
Eu acredito….do jogo?
É, se você lembra pra me dar um exemplo?
Hum….[pausa longa] eu vou ter que pensar um pouquinho.
Pode pensar.
[pausa longa]. Eu acho que seria mais, tipo, algo como tomar banho, que depois eu nunca mais esqueci. Que é tipo *take a shower*, acho que isso foi o que eu realmente não esqueci, porque pelo menos o meu boneco sempre pedia pra tomar banho (risos).
Sim (risos), eles pedem todo dia pra tomar banho. (ambas riem) É...Mas, você lembrou dessa palavra porque, tipo, você associou com alguma coisa na tua vida?
É, porque tomar banho, né….
Ou era porque ele pedia várias vezes pra….
É...tipo, é que ele pedia muito pra tomar banho, aí eu acabei, tipo, gravando isso e agora eu sei, sabe?
Que bom! Porque, tipo, como apareceu bastante você gravou. A frequência te ajudou.
É.
Então tá ótimo. Você quer falar mais alguma coisa?
Não.
Não. Então eu vou desligar.

MARCELO

Bom, olha só, nos três testes, você foi melhorando. Por exemplo, no primeiro, você acertou 12, no segundo, você acertou 22, e no terceiro você acertou 16. É normal ter esse pico, porque esse aqui [apontando pro teste 2] foi logo depois de jogar. E o terceiro teste foi acho que duas ou três semanas depois, sem jogar.

Hum…

Mas mesmo assim, se a gente comparar o primeiro com 12 e o terceiro com 16, você aprendeu 4 palavras ao longo. Então isso é coisa…. é resultado positivo.

É.

Se eu perguntasse hoje alguma palavra pra você me dizer em inglês, alguma palavra que você lembre que você aprendeu com o jogo, você consegue me dar um exemplo?

Alguns exemplos, tipo, quando a gente ia construir a casa, e tal, *bedroom*, *door*, a porta, porque a gente ia construindo as partes da casa e fazendo aquelas melhoras, tipo, e tal, e eu acho que essa mudança do primeiro pro segundo, do segundo ser o melhor, é porque, porque isso tava, assim, bem vigente na nossa vida…

Aham. É, foram 8 sessões uma aula atrás da outra, e daí então…

Aham. Isso. Essa parte eu acho que a gente tava bem mais focado no jogo e eu acho que por isso teve essa melhora.

Aham. Mas por exemplo, neste, no primeiro teste, você acertou aqui [apontando para o pré-teste], comer, você acertou. E nesse aqui você acertou e no terceiro você também acertou. Você já sabia essa palavra antes ou você…

Ah, essa era mais básica, assim, do inglês, daí nessa me facilitou bastante o entendimento.

Aham. E então tu chutou no primeiro? Ou tu já sabia?

Não, no primeiro eu já sabia.

Já sabia e depois você continuou com aquela...memorização.

Isso.

Tá. Mas olha só, essa palavra, [um professor entra na sala e interrompe. Pergunta de outro professor e retira-se]. Hum, deixa eu ver o que eu ia falar. No primeiro teste você deixou a palavra to build, que é construir, em branco. Essa foi uma orientação minha: deixa em branco se não sabe, não chuta.

Aham, sim.

Mas, olha só, aqui você acertou, no teste 2, e no teste 3 você também acertou. Esta foi uma palavra que você aprendeu no jogo?

Sim, com certeza. A palavra *to build*, que eu não sei pronunciar (risos), ela tava presenta na hora de construir a casa e tal, e isso ajudou na hora de responder no segundo e terceiro teste.

Tá, só que, nessa mesma atividade, você acertou a palavra to buy, que é comprar, mas no terceiro teste você não assinalou nada, talvez porque você não lembrou, ou talvez porque você não quis chutar. Por que você acha que você lembrou to build e não lembrou to buy?

Olha, *to buy* eu consegui relacionar com os jogos em inglês e *buy* é comprar, sabe, e a gente escreve direto essa palavra, só que eu não consegui relacionar no terceiro, aqui, com essa parte [apontando para as alternativas]. No segundo, olha, no segundo, não sei se foi intuição, e tal, mas no segundo fez sentido e aqui [apontando para o teste 3] eu resolvi não arriscar. Porque se eu não me engano, você não tinha entregado isso aqui ainda, o segundo teste.

Não, eu não entreguei. Eu não fui entregando as correções.

É, daí eu não sabia se eu tinha acertado. Aí resolvi não arriscar.

É, isso, na verdade, foi intencional, de não passar a correção pra vocês.

Aham, eu sei.

Deixa eu ver se tem mais alguma pergunta. Foram todas. Beleza. Só assim, porque você acha, ou como você justifica como você lembrou de algumas palavras e outras não? Você falou que jogava outros jogos, que já conhecia. Você fez relação com alguma parte da tua vida, ou, por exemplo, lavar as mãos e banheiro [apontando para os acertos do participante], você relacionou com alguma parte da casa?

Uma coisa que o jogo ajudou foi ajudar nessas coisas básicas, sabe, essas palavras mais simples, porque daí a gente até brincava um com o outro ali na rua e tal, sobre conseguir fazer essas coisas mais simples, que o jogo ajudou. E também a gente relacionava em casa também, às vezes com outros jogos ou com qualquer filme, por exemplo, que a gente não entendia simples palavras dos atores e tal, e a gente conseguia relacionar mais.

Ok, tá ótimo então. Mais alguma coisa?

(acena que não com a cabeça)

Ok. Vou encerrar aqui.

HELENA

Ok, olha só. No primeiro teste... o que mais me chamou a atenção... você deixou 21 de 25, 21 em branco, depois foi reduzindo pra 16 e depois foi pra 15.

Aham.

É, eu tinha dado essa instrução: deixa em branco se não lembra, não chuta. Ou seja, foi uma coisa boa que você foi reduzindo, porque ou você tentou assinalar, ou você sabia, você aprendeu. Você acha que você aprendeu algo, assim, hoje, depois de tanto tempo sem jogar, você acha que você conseguiu memorizar algumas palavras?
Sim, tipo, eu consegui algumas atividades diárias. Lavar mãos, tomar banho, dormir….eu acho que eu aprendi com o jogo.
E tu lembra alguma palavra em inglês? Você saberia me dar alguns exemplos de palavras que você aprendeu no jogo?
(risos) não, mas se eu ver, eu sei o que é. Mas assim, de lembrar pra falar, não.
Tá, tudo bem. Assim, as respostas que você assinalou corretamente foram aumentando. Foi de 4 antes do jogo, pra 9 logo depois do jogo, e depois desceu um pouquinho pra 8. Mas mesmo assim, se a gente comparar do primeiro pro último teste, é um aumento de 4 certas, 50%.
Aham.
É….então isso é um resultado bom. Você conseguiu, assim, olhando hoje, você acha que você conseguiu memorizar algumas palavras? Se sim, porque?
(silêncio, pausa)
Por exemplo, por que você conseguiu, hum… [apontando pros testes] memorizar lavar mãos e não memorizou tomar banho, por exemplo?
Ah, eu não sei...tipo, talvez tenha sido por ter mais contato com esse tipo de atividade, acredito que tenha sido isso.
Talvez pois no joguinho você fazia mais?
É, isso.
[professora abre a porta, olha para nós, faz sinal e retira-se] É, pode ser. Tá ótimo. Agora a próxima pergunta é que no teste 2, no teste 2 você acertou aqui comer, [apontando pro teste 2], to eat, você assinalou certinho a descrição.
Aham.
Mas neste daqui você deixou em branco. Você acha que você tinha esquecido, mesmo?
(silêncio, balançou a cabeça em dúvida)
….Porque ficou um tempo sem jogar?
Sim, acho que sim.
Mas estas aqui você nem tentou no teste 2 [apontando para o teste 2], comprar e construir, to buy e to build, você deixou sempre em branco. [Professora entra na sala novamente e me chama, pede para utilizar a sala. Retira-se] Tá, hum...eu acho que era isso. Deixa eu ver se tem mais alguma coisa. Você tinha deixado em branco aqui e aqui também

[apontando para as atividades 5 e 6 nos testes]. Você nem lembrou dessas?
Não, essas eu não consegui.
É que na verdade, como começa com figurinhas, depois vem com assinalar, e atividades de escrever, escrever é mais difícil, então são as que você mais deixou em branco, porque é mais difícil de produzir, né?
É, com os desenhos e de assinalar é mais fácil de lembrar.
Hum...é, então eu acho que era isso, porque eu já perguntei do hand washing.
É, eu acho que ter figurinhas ou ser de assinalar lembra muito mais do que escrever.
Tá certo. Você tem algumas palavras que você lembra mais, né? Acho que eram palavras que você já falou, de tipo, que é porque você….
….fazia mais no jogo, é.
Isso, fazia mais no joguinho. Então é isso. Obrigada.

WILLIAN
Beleza, olha só [com os testes em mãos]. Desde o primeiro teste até o último, você teve um aumento nos acertos: no primeiro teste, antes de começar a jogar, você já tinha 19, então você já sabia 19 palavras; no segundo teste você acertou 24, então teve um acréscimo de 5, mas no último, que foi depois de parar de jogar, você decaiu um pouquinho e foi para 22 acertos. Essas 19 palavras você já sabia, né? Você já tinha conhecimento?
Acredito que sim.
Sim. por exemplo: dark hair, bathroom,...
É, eu já tinha uma noção, e com as imagens ficou mais fácil saber qual que era.
É, exatamente, as que você mais acertou são as que tinham de assinalar. As que você mais errou são aquelas que tinham que escrever, porque realmente produzir em inglês é mais difícil do que receber, do que só ler, assim, como assinalar ou associar com a imagem….
Sim, inclusive é minha maior dificuldade.
Escrever?
Isso.
Ok, então vamos lá [no teste 2]. Tomar banho. Tomar banho é uma palavra que você acertou aqui no teste 2. Take a shower. Acertou. E no terceiro, você deixou em branco. Ficou em branco. Essa era uma instrução minha: se não lembra, não chuta, deixa em branco, porque eu vou utilizar esses dados também. Então a minha pergunta é: você

esqueceu aqui neste último teste, ou você resolveu não chutar? O que aconteceu?
… (pausa silencionsa)
Por que no teste 2 você acertou take a shower.
Hum. Por acaso tem algum outro *take* na atividade que eu acertei?
Não. Eu utilizei tudo os mesmos...
Ah, então provavelmente era porque tinha que mandar o bonequinho tomar banho, *take a shower*. Eu acho que é porque eu não lembrei do nome, tipo, *shower*. Ou do *take*. Ou dos dois.
Aham. porque este teste é igual aos outros, tá?
Sim.
Todos são iguais pra realmente verificar se houve aprendizagem ou não. Então aqui você decidiu, hum... não escrever porque ficou em dúvida, porque talvez...
Sim.
...O que é normal, porque você já tinha parado de jogar.
Então fazia tempo mesmo…quanto mais joga e mais vê a palavra, mais fácil é de lembrar.
Sim! É...E aqui, olha só [mostrando a atividade]. Comprar uma geladeira. Você só lembrou de uma parte, que é comprar. Você não sabe o que é geladeira [em inglês]?
Hum...
Aqui [mostrando o teste 3] também é a mesma coisa. Você só escreveu to buy.
É…. Eu não lembrava o que era geladeira. É *refrigerator*, né?
Isso!
Então, mas eu não lembrava….
E hoje você lembra dessa palavra porquê? Você aprendeu na aula?
Eu vi em algum lugar….eu vi em algum lugar. Em alguma aula, porque agora eu faço aula de inglês.
Em cursinho?
Sim, daí eu...ah, a gente tinha que escrever as coisas da cozinha. Foi na sexta-feira, e tipo, tinha uma *refrigerator* lá. Então….
Então está bem fresquinho na tua memória.
Sim!
Que é o caso também de take a shower, que estava fresquinho, você lembrou e passou um tempo e depois você esqueceu. Porque é normal a nossa memória….
Sim.
...a gente vai perdendo, sabe?
Ok.

Ok, então deixa eu ver mais alguma coisa [do teste]. O restante você acertou tudo. Não tem o que perguntar. É... A minha pergunta na verdade, é assim: você começou com 19 acertos e foi pra 22 no teste final. Porque que você acha que você memorizou estas 3 novas palavras durante o jogo, assim, as sessões de jogo?

Assim, porque antes de começar a jogar eu tinha bem pouco contato com inglês, sabe? Até porque foi o primeiro semestre de inglês do IFSC, e junto com o semestre de inglês, assim, as atividades do jogo, eu tinha uma vontade de aprender inglês. Então eu tentava jogar o jogo tentando prestar o máximo de atenção nas palavras, e eu tenho, no geral, eu tenho uma facilidade de memorizar palavras, memória de aprendizado. Então que acredito que o contato com o inglês através do jogo, e eu me esforçar a entender as frases e etc., me ajudaram a lembrar ou a gravar, a aprender, hum…. estas 3 novas palavras e….e fizeram diferença.

E na verdade você já tinha conhecimento antes, né? Porque acertar 19 de 25, antes de jogar, é bastante, acho que se não for o melhor, é um dos melhores resultados antes do jogo da nossa turma, antiga turma. É…. Deixa eu te fazer a última pergunta. Se fosse pra eu te pergunta hoje alguma palavra que você lembra em inglês do jogo, que você aprendeu lá no jogo, você me lembraria alguma pra me dar de exemplo?

Claim.

Ah, sim, eu lembro que até tu escreveu essa [na narrativa].

Sim, porque eu queria saber o que que era e eu fui lá e pesquisei e...reivindicar.

Aham.

Porque tinha que pegar o prêmio diário e tinha *claim* e eu pensava tipo o que é isso? E daí eu lembro dessa que eu associei.

Ah que bom. Porque era o objetivo principal. Aprender. E você gostaria de falar mais alguma coisa?

Ah, sobre os 19 acertos, se eu não me engano, é...se eu não me engano, foi nessa época, nas férias, eu tava jogando *Duolingo*, daí eu acho que eu tava um pouquinho mais em contato com o inglês. Se eu não me engano, porque eu não tenho muita certeza.

Deve ter sido em julho do ano passado.

É, ou talvez nas férias do final do ano agora.

Tá. mas igual, o app te ajudou...

Sim.

Legal. Porque a tecnologia nos ajuda em alguma coisa...

Sim.

Tá ótimo.