

Vocabulary Learning Perceptions and Willingness to Communicate: A Comparison of Two Video Game Genres

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This MA thesis examined the differences in vocabulary learning perceptions and willingness to communicate (WTC) of players of two video game genres: the players of First Person Shooter (FPS) games, and the players of Massively Multiplayer Online Role-Playing (MMORPG) games. The aim of this thesis was to ascertain which target group of video game-players perceived their genre to be more useful or conducive to incidentally learning vocabulary and how their genre affected their WTC.

The data for the comparison were gathered using an anonymous online questionnaire created on the Webropol website. The questionnaire consisted of three sections: the background information section, the WTC section, and the vocabulary section. A total number of 43 participants took part in the questionnaire. This number of participants was adequate to apply quantitative methods to the results of the questionnaire. Questionnaire answers were given simple scores and compared using Microsoft Excel and the IBM SPSS statistics program. In both sections of the questionnaire, the MMORPG group outscored the FPS participant group.

An Independent Samples T-test found there to be significant differences ($p=.027$) in the WTC section, but no significant differences ($p=.245$) were found in the vocabulary section. Nonetheless, the vocabulary section did provide results that skewed in favour of the MMORPG participants in a similar manner to the WTC section. The results of this thesis indicate that MMORPGs are better suited for these two facets of language learning. While previous research has highlighted the benefits of MMORPGs for language learning, no direct comparison has been made with other video game genres. Future research could focus on comparing additional genres to MMORPGs or different genres.

Key words: second language acquisition, vocabulary, willingness to communicate, digital video games, MMORPG, FPS, quantitative study.

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List of Abbreviations

L2	Second Language
FPS	First Person Shooter (game)
MMORPG	Massively Multiplayer Online Role-Playing Game
L2TL	Second Language Teaching and Learning
CALL	Computer Assisted Language Learning
WTC	Willingness to Communicate
PVP	Player Versus Player
PVE	Player Versus Environment
NPC	Non-Playable Character
WoW	World of Warcraft
VoIP	Voiceover Internet Protocol

1. Introduction

Digital video games have been an ever-growing pastime in the past decades since becoming a mainstream form of entertainment in the 1970s (Reinhardt 2019, 5). Many people have since then spent hours of their childhoods entertaining themselves with this interactive form of digital media, but even before that video games were used in teaching and learning. Among the first video games were educational games like *Logo*, released in 1967, which was used to teach coding by way of turtles (ibid.). The potential of video games for use in the second and foreign language (L2) classroom and for L2 learning in general was quickly noticed by language teachers and Computer Assisted Language Learning (CALL) researchers (Reinhardt 2019, 6). As for the definition of a game that will be used in this thesis, Sykes and Reinhardt (2013, 3) characterise a *game* as follows:”

- A player voluntarily plays a game knowing that he or she is bound by a set of rules (these can be followed or flouted).
- Games require effort to reach a goal (this goal can be open ended or clearly defined, yet it is always ultimately authenticated by the player).
- Games will often result in a variety of differing outcomes, some better than others.
- Games create an internally rewarding system.”

This definition for (digital) games will be used for the remainder of the study. A crucial distinction made by Reinhardt (2019, 4) is the distinction between educational games and vernacular games. As the name implies, educational games have an additional objective of educating the player in addition to being entertaining, whereas vernacular games are nearly always used for entertainment purposes only (ibid.). Both vernacular games and educational games have been the subject of multiple studies ever since digital games have become mainstream.

The present study focuses on vernacular games as a source of informal learning for learners of English, comparing two genres of digital games and their players’ perceptions of vocabulary learning while playing the games and the effects of the games on the players’ willingness to communicate (WTC). The two genres being compared are First Person Shooter

(FPS) games and Massively Multiplayer Online Role-Playing games (MMORPGs). These two genres were chosen to be studied due to their wide popularity in the gaming space, my own interest in both genres, and the lack of comparative research on informal language learning and video game genres. The perceptions of the players of the two separate genres are first acquired via a questionnaire based on Rasti and Vahdat 2013 and Hussein 2019 for the vocabulary section, and Mystkowska-Wiertelak and Pawlak 2017 and MacIntyre et al. 2001 for the WTC section, and then compared with each other using Microsoft Excel and statistically analysed using the SPSS program. The goal of this study is to compare the perceived usefulness of two widely popular video game genres in terms of incidental vocabulary acquisition perception and the possible effects on WTC of players of video games. It is my hypothesis, that MMORPGs are more suitable for the development and acquisition of vocabulary, but FPS games will have more effect on the WTC of its player, whether that effect be negative or positive. The research question is phrased as follows: “How do FPS players and MMORPG players differ from each other when discussing incidental vocabulary learning perceptions and willingness to communicate?”

As the name implies, MMORPGs are played almost exclusively online and with other people, creating potential for second language (L2) input, output, and interaction (Sylvén and Sundqvist 2012, 308). FPS games on the other hand are played both offline in single-player game modes such as story and survival modes, and online in multiplayer cooperative or competitive player versus player (PvP) modes. Positive effects on L2 acquisition (especially the acquisition of vocabulary) are well recorded in previous studies (e.g., Sylvén and Sundqvist 2012, DeWilde and Eyckmans 2017, and Rankin, Gold, and Gooch 2006), but FPS games have seen little research in the context of language learning. FPS games provide similar opportunities to MMORPGs for language use, with more opportunity for oral production during gameplay than MMORPGs generally allow. This is due to the fact that MMORPGs are, more often than not, slower paced video games than FPS games, wherein the text chat provided by the game itself is often an adequate form of communication. In FPS games, communication is regularly required to be near instantaneous when sharing acquired information on, for example, the positions of opposing players or strategies to execute during gameplay thus making text-based chatting (asynchronous communication) too slow to be used effectively. Additionally, FPS-games are most commonly played through a matchmaking-system through which the game finds a new group of players to play with and against that are

(usually) on a similar skill level. If a player is playing alone, they might encounter a large number of other players that they have never met before. Familiarity is an aspect important to WTC (MacIntyre et al. 2001, 379), with some individuals having an easier time interacting and speaking with strangers, while others are completely unable to converse with strangers, in the fears of appearing somehow embarrassing or “losing face”.

This study begins with the theoretical background behind the study, looking at video games and language learning in general, followed by a look at the learning of L2 vocabulary (focusing on informal learning strategies). This is then followed the final subsection of the theory section: explaining WTC theories relevant to the study. Then the materials and methods of the study are presented. First is presented the questionnaire containing two different sections used for the study, a questionnaire for the perceptions of L2 vocabulary acquisition in the respective genres, and a questionnaire for the effects of the games on the WTC of their players. I then present the methods of analysis and comparison using Excel and SPSS. Following the methods is the results section in which the results of the questionnaire are looked at in detail. The second to last chapter is for the discussion of the results and its statistical analysis, followed by the last section in the conclusions part where the conclusions, possible shortcomings and implications of this study as well as potential future topics of research are discussed.

2. Theoretical Background

In this section I present the theoretical background of this study. It begins with the exploration of video games and language learning, followed by examining willingness to communicate (WTC) and ending with a look into second language vocabulary learning. That being said, as this is a study on video games and language learning, all chapters include not only theoretical basics but also the field's connection to digital video games and language learning.

2.1 Video Games and Informal Language Learning

The vernacular video game industry (games designed for entertainment) has grown remarkably in the 21st century, with the global video game market estimated to amount to 198 billion US dollars in the year 2021 (Clement 2022). Clement (ibid.) also shows a prediction in which the video game market grows by nearly another 100 billion USD to a staggering 270.9 billion USD by the year 2025. Undeniably, the video game market is huge, and the applications of it towards foreign and second language teaching and learning (L2TL) are numerous. From serious video games designed for learning to adapting vernacular games for language learning or investigating incidental learning happening through vernacular games. Presented in this chapter are the viewpoints and theories relevant to the present study concerning video games and language learning.

2.1.1 Gamefulness and Learnfulness

Most research into the field of video games and language learning, or video games and learning in general, have used the term “game-based” to refer to research on games related to learning (Reinhardt 2019, 8). Reinhardt (ibid.) presents a division that is better suited for this study and more detailed in general for L2TL. The division is as follows: game-enhanced L2TL, game-based L2TL, and game-informed L2TL. Game-Enhanced L2TL is in essence, using vernacular games not intended for language learning in a language learning setting (ibid.). These vernacular games can be used either as they were released to the public, or by adapting them somehow to better suit language learning needs, but still differentiating them from educational or “serious” games (as done by Reinders and Wattana 2011 and 2015a and b). Game-based L2TL encompasses the usage of games designed specifically for language learning (Reinhardt 2019, 10). Games designed for language learning have also seen an increasing amount of research, but that is not the focus of this particular study. Nevertheless, it is important to mention that according to Reinhardt (ibid.) the educational technology

industry has not put in too much effort in the field of games for L2TL, and when the effort has been put forth to release a game designed for L2TL, the results have been quite unsatisfactory in the eyes of CALL researchers. This is often related to what Bruckman (1999, 74) has quite entertainingly coined the “chocolate-covered broccoli” problem. This meaning that beneath the thin chocolate covering of a gameful experience and a digital game interface is an inherently educational core that is somehow unappealing to learners. Educational games are often simple “drill and practice” software that designers have tried to make less unpleasant by adding pretty graphics (Bruckman 1999, 75). The third part of the division presented by Reinhardt is game-informed L2TL. Both the aforementioned game-based, and game-enhanced L2TL have focused on the application of games into L2TL, but game-informed L2TL is the “application of theories of games and play to the broad practice of L2 teaching and learning.” (Reinhardt 2019, 9). *Gamification* is tied to game-informed L2TL, in which, for example, a language course is given game-like features like levels, leaderboards, badges, and achievements (Reinhardt 2019, 10).

All of the above divisions can be attached to the underlying intentions of the game’s designer, or their *gameful* approach (Reinhardt 2019, 11). Being gameful is more than just a serious, educational game being used for L2TL purposes, or a vernacular game being used for L2TL purposes, but a certain disposition or mindset of the player/learner that is focused on the “serious” activity of learning while still remaining open to participating in a game and playing according to the game’s rules (ibid.). Thus, a learner may participate in a language learning lesson while themselves having a gameful disposition and leveraging that for successful, and more enjoyable, L2 learning outcomes. Reinhardt (2019, 12) also presents a complement to being gameful, being *learnful*. If being gameful is being aware of and finding opportunities for game-like applications, being learnful is the disposition “towards finding learning opportunities in activities not explicitly designed for learning, like vernacular gaming.” (ibid.). Combining both of the learnful and gameful dispositions is relevant toward the present study, as according to Reinhardt (2019, 13) lacking a learnful disposition hinders the L2 learner in informal learning through vernacular games.

2.1.2 Benefits and Interactions of Gameplay

According to Knight, Marean, and Sykes (2020, 103) only very little empirical evidence exists from purely informal gaming spaces. A large number of previous studies have used

either serious games or used vernacular games in a more formal setting (Knight, Marean, and Sykes 2020, 102), or even modified the vernacular game used in the study to be more suitable for language learning (e.g., Ranking, Gold, and Gooch 2006). The definition for informal gaming spaces defined by Knight Marean, and Sykes (2020, 102) is used in this study because it is a very fitting definition for this study, furthermore, formal and informal gaming spaces are mutually exclusive according to this definition. The definition is as follows: “informal gaming spaces are gaming environments whose contexts of use are not directly and explicitly tied to achievement measure in the classroom.”. A benefit of informal gaming and gaming spaces is the extent to which it is *learner-directed*. *Learner directedness* as defined by Knight, Marean, and Sykes (2020, 103) is the idea of the learner having agency to choose both their participation in the gaming space and what they choose to do in said gaming space. Sykes and Reinhardt (2013) bring to light the similarities of good game design (and by extension, gaming spaces) and good language teaching based on L2TL research. Both good games and good classrooms contain and make use of quality goal orientation, meaningful language interaction, feedback, that language use is contextualised. While also both environments, if they are well designed, are motivating provided, that they promote participant independence and create realistically achievable challenges (ibid.).

Knight, Marean, and Sykes (2020, 105-108) present four benefits and four interactions of learner-directed gameplay from the perspective of L2TL. These four benefits and four interactions shall be discussed in this chapter starting with the benefits of learner-directed gameplay followed by the four ways of interaction through which the benefits are realized (Knight, Marean, and Sykes 2020, 105). The first benefit is learner-directed gameplay providing the learner-player with “low risk, simulated practice with meaningful consequences” (ibid.). This is achieved by many games often providing a character or *avatar* that functions as the identity of the player. The avatar then allows the learner-player to engage in language interactions with other players, or non-player characters (NPCs). NPCs provide players the opportunity to act out high-stakes speech acts (e.g., apologizing) while removing the risk of appearing ridiculous or offending other players (ibid.). Alternatively, a player might have an interaction with another player, in which their actions do have consequences unlike when players interact with NPCs. Different games allow a player to “act” or play as different avatars, or personalities. A player might have a different personality for a different game or game character, leading to different ways of interaction with other players and/or

NPCs, allowing for real language practice from different perspectives and interactions (ibid.). The second benefit as listed by Knight, Marean, and Sykes (2020) is the benefit of emotionally supportive environments. Heavily related to this benefit of a supportive environments are two ideas found in James Paul Gee's important 2007 release "*What Video Games Have to Teach Us About Learning and Literacy*", namely the ideas for semiotic domains and affinity groups. Semiotic domains are "an area or set of activities where people think, act, and value in certain ways" (Gee 2007, 19). A relevant example of semiotic domains could be a MMORPG played by tens of thousands, if not millions, of players around the globe, or a smaller FPS game with a relatively small audience of a few thousand people. Within these (and other) semiotic domains exists an affinity group, or "the group of people associated with a given semiotic domain" (Gee 2007, 27). Affinity groups and affinity spaces into which players voluntarily enter and interact in often yield positive and emotionally supportive gaming experiences, which may yield a positive effect on language learning for players (Knight, Marean, and Sykes 2020, 105). The affinity groups present in MMORPGs have been noted to be especially welcoming in the informal gaming space, reducing anxiety, increasing self-confidence (Reinders and Wattana 2015b, 3), and motivating players to learn game-specific terminology (Sundqvist and Sylvén 2012, 192).

The third benefit of learner-directed gameplay from the perspective of L2TL is the benefit of "complexity to prime learning" (Knight, Marean, and Sykes 2020, 105). This meaning the inherent complexity of the language used in video games and the presumption of the player already knowing the language of the game. The complexity of the language present in video games is difficult to recreate in a formal language learning setting, which may show a tendency toward more prescriptive and overly simple examples and use of language (ibid.). An additional positive aspect of this benefit is the aspect of players having interactions through, around, and about the game. These interactions (to be discussed in more detail later in this section) require the player to have less scripted and more natural interactions and language use. (ibid.). An excellent quote commenting on the somewhat disappearing idea of video games being distractions and perhaps even harmful for learners must be repeated here in regard to this third benefit: "Indeed, far from distracting players from the "real world," gameplay and its emergent and attendant discourses place learners in a complex yet scaffolded collection of worlds that require diverse interactions to attain learner-selected goals." (Knight, Marean, and Sykes 2020, 106) The fourth and final benefit is "Global

competencies through online interactions” (ibid.). In short, as this is defined in a quite intricate and reference-laden matter in Knight, Marean, and Sykes (2020), online video games and interactions through, around, and about video games “broadens the horizons” of the player, allowing them to understand and appreciate different perspectives and world views from the perspectives of both global and local significance, and allowing them to amass positive interactions with people of different backgrounds.

The combined views on gameplay interactions of Reinhardt and Sykes (2011) and Sykes and Reinhardt (2013) are presented in Knight, Marean, and Sykes (2020, 106-108), and they will be discussed as presented in the most recent publication of Knight, Marean, and Sykes (2020). The benefits discussed above are realized via the co-constructed interactions involving games (Knight, Marean, and Sykes 2020, 106). The four types of interaction are: interactions *with* the game, interactions *through* the game, interactions *around* the game, and interactions *about* the game (Knight, Marean, and Sykes 2020, 106-108). The first type of interaction, interaction with the game, (also referred to as in-game discourses by Reinhardt and Sykes 2011), are in connection to “game narratives or fictional content, and game rules” (Knight, Marean, and Sykes, 106). This translates to essentially most interactions that a player has directly with the game, from navigating menus to engaging in a conversation with NPCs. The structure of these interactions and discourses is often very rigid and goal oriented (Thorne and Black 2007, 6). Many previous studies have noted on the nature of with-game interactions (Thorne and Black 2007, DeVane and Squire 2008, Chik 2014 to name a few) being very specialized in nature, often relating to game-specific tasks such as acquiring certain goods from a merchant or repeating certain sentences to NPCs to further a specific task or goal, often referred to as mission or quest.

Games are excellent sources of very specific vocabulary that sometimes leads to players acquiring words that can be considered to be too advanced or niche for their level of language proficiency. The second type of interaction is interaction through the game. These types of interactions are almost exclusively related to multiplayer games as these interactions are done through the voice chat or text chat feature present in most games that have multiplayer game-modes. Most commonly discussed in these interactions are game-specific strategies, rules and they are highly situational and role-dependent (Knight, Marean, and Sykes 2020, 107). Being role-dependent refers to the in-game roles of the players

participating in the interactions. An example of an in-game role could be a leader of a group calling out which in-game strategies to apply to win a round or an engagement in a competitive FPS game. Players may also experience explicit feedback from native speakers of their L2 (ibid.) assisting further in both in-game understanding and acquisition of vocabulary and grammar rules. In addition, through game interactions “support not only lexical and grammatical development, but also the observation, evaluation, and practice of language pragmatics and intercultural communicative interactions.” (ibid.).

The two remaining interactions, around and about the game, are somewhat connected as they both interactions are done outside of games either online or “in the real world”. Interactions around the game tend to happen on specialized internet platforms such as social media pages dedicated to the game the players want to discuss, or internet forums completely dedicated to discussing a certain game or game genre (Knight, Marean, and Sykes 2020, 107). Another type of around the game interaction is the act of writing fan fiction (ibid.). Fan fiction is essentially fan (or third party) written content based on one or several pieces of media, whether they be video games, television series, movies, or books. Fan fiction can also be written of real-world personalities, but this is as I understand, less common. Obviously, the act of writing or discussing about a game helps in the acquisition of a language motivated by around game interactions. Knight, Marean, and Sykes (2020, 107-108) also point out that around game interactions are less structured and allow for “increased proficiency development”. The already existing settings, characters, plotlines, and contexts provide scaffolding that allows learners to use and produce language on a higher level than their own perceived proficiency (Knight, Marean, and Sykes 2020 107-108). The last interaction presented are the interactions about the game. These interactions “involve players making connections between the game and the rest of the world around them.” (Knight, Marean, and Sykes 2020, 108). These about the game interactions differ from around the game interactions in the sense that around the game interactions tend to happen in affinity spaces and affinity groups, whereas about game interactions outside these groups and spaces. The definition and separation between these two interactions is quite difficult to understand in the source text, but according to Knight, Marean, and Sykes about the game interactions are specifically useful for language learning due to them including “collecting discourses, analysing their linguistic, pragmatic, and socio-cultural meanings, and more reflective creation and

participation” than through the three other ways of interaction (Reinhardt 2011, 3 in Knight, Marean, and Sykes 2020, 108).

2.2 Vocabulary

This section covers the connection between vocabulary teaching and learning and video games. All video games contain vocabulary, and often that vocabulary is very specific to the type and genre of game being played. A fantasy game will contain fantasy themed vocabulary in accordance with the universe it is set in, may it be a high fantasy world with dragons and elves or a low fantasy world where the fantasy elements merely intrude with the events, rather than being the central focus. Studies have shown that there certainly is a connection between video games and vocabulary learning as this section will show.

2.2.1 Vocabulary Frequency and Video Games

Vocabulary is an integral part of L2TL, as words quite literally make up the languages people use in their day to day lives to share their thoughts and communicate with other people. Not all words are created equal however, as some words appear far more often than others, and the distinction between what is referred to as high-frequency, mid-frequency, and low-frequency words is important to understand (Nation and Hunston 2013, 9). High-frequency words are words that appear very frequently in language use. A lion’s share of high-frequency words are function words (prepositions, pronouns etc.) but the group also includes some content words (Nation and Hunston 2013, 18). Mid-frequency words are mostly content words that are not as common as high-frequency words (e.g., pastoral, zoned, pioneering, aired) and are regarded as being generally useful, somewhat frequent words that were close to being listed as high-frequency words (ibid.). Low frequency words are, as the name implies, not very commonly used, but they still form the largest group of words in this division (ibid.). These words make up only a small portion of most English-language content (ibid.). Low-frequency words are widely used in academic texts and other field-specific texts because these types of texts tend to have a large amount of specific vocabulary for a specific area of interest (Nation and Hunston 2013, 19). However, as these types of word lists for different frequency divisions are man-made from data drawn from specific sources, there are a number of different frequency lists that differ somewhat from each other as they are constructed from different corpora such as the British National Corpus (BNC) (Nation and Hunston 2013, 24).

The proper and fluent reading and understanding of English-language texts without outside support require, according to Nation and Hunston (2013, 18), the knowing of both mid-frequency and high-frequency words. High frequency words specifically should be a large focus when learning or teaching English (Nation and Hunston 2013, 24). Video games often use very field-specific vocabulary, such as words from fantasy/fiction literature, fashion design, car customization, or firearm maintenance. This can lead to video game players to know oddly specific vocabulary even prior to instruction, but also more general and higher frequency vocabulary, since video games are filled with interactions of and conversations between different characters and events. DeWilde and Eyckmans (2017) found that a “significant proportion” of their subjects (11-year-old Flemish children) had acquired an A2 level grasp on English prior to any formal instruction in the Belgian school system. The A2 level is a level on the Common European Framework of References for Languages (CEFR). It is considered the level of a “basic user” who can understand sentences and frequently used expressions of the most immediate relevance to them (<https://www.coe.int/en/web/common-european-framework-reference-languages/table-1-cefr-3.3-common-reference-levels-global-scale>). Reinders (2017, 332) notes on the nature of vernacular video games that they tend to be very complex with “many games including extremely elaborate story lines, multiple characters, complex problems to solve, and plot twists.” This complexity is both good and bad in the sense of learning vocabulary in L2TL as complex and specific vocabulary can be easy to understand due to its markedness, but difficult in the sense of one might not encounter it too often for use in one’s own language repertoire. DeHaan, Reed, and Kuwada (2010) present a negative result in relation to vocabulary and video games. In that study, the researchers found the interactivity of video games hindering post-gaming vocabulary recall in vocabulary recall tests after 20 minutes of playing a music video game and in a vocabulary recall test two weeks later when comparing the subject that played the game to a subject that observed the playing of the game.

2.2.2 Four Strands of Vocabulary and Language Learning

Nation and Hunston (2013, 2) define a good language course as having four different but equally important “strands”. Despite these four strands being meant for a language course, thus meaning direct learning of a language, and not indirect learning or incidental learning as is the topic of this thesis, I believe three of the four strands represent a solid basis for good informal language learning also. The four strands are the strand of learning from

comprehensible meaning-focused input, the strand of meaning-focused output, the strand of language-focused learning (also called form-focused instruction), and finally the strand of fluency development. (Nation and Hunston 2013, 2-3). The first strand means that “the learners should have the opportunity to learn new language items through listening and reading activities where the main focus of attention is on the information in what they are listening or reading.” (Nation and Hunston 2013, 2). Obviously, reading and other types of input are integral to acquiring new vocabulary, but only seeing a new word and attempting to remember it is not necessarily enough for it to be “learned” properly. Following this, the second strand asserts the importance of actually using a language a learner is learning and being able to create output in which they are focused on the information they are trying to convey (ibid.).

The act of language production can help form stronger knowledge of previously learned vocabulary (ibid.). As for the third strand, Nation and Hunston (2013, 2) remark that according to recent research, there is growing evidence for the sake of deliberate and focused language teaching and learning, but this does not remove the possibility or opportunities for language learning in a more informal setting, merely emphasizing the importance of also applying oneself to direct and formal language learning. The fourth strand acknowledges that a learner should not only focus on learning new things and/or new words, but also strengthen knowledge of previously learned items (Nation and Hunston 2013, 3). Additionally, Nation and Hunston (ibid.) state that without a focus (or strand) for fluency development, the learning done in language courses (and I believe, in language learning in general even outside of a language course) will not be readily available for the learner to use in the future.

2.2.3 MMORPGs and Vocabulary Learning Strategies

MMORPGs are well studied through the lens of vocabulary learning, in fact according to what I have found while researching previous studies for this thesis, most video game related articles (even more so vocabulary and vernacular video game related studies) are concerning MMORPGs. MMORPGs do indeed provide a digital world in which players interact both with and through the game (see 2.1.2) creating an environment which is well prepared for facilitating language acquisition. Bytheway (2015, 510) notes on the interface of *World of Warcraft* (WoW) alone providing a “wealth of linguistic resources, including written instructions and storylines, optional pop-up tips, accessible manuals, animated film clips with

spoken audio and captions, as well as access to synchronous (voice chat) and asynchronous (typed) chat messaging, real-time phone-like conversations with VoIP software (voice over internet protocol), and interactive wikis.” WoW is an immensely popular MMORPG that is often considered by gamers and gaming media alike to be synonymous with the genre. Although it has lost a lot of players and popularity in recent years, its impact on the genre cannot be understated. MMORPGs such as WoW are run on dedicated servers that provide different gameplay experiences depending on their type. Types include Player versus Player (PvP), Player versus Environment (PvE), and Roleplaying (RP) servers. Commonly servers are placed into regions such as Europe, North America, South America and so on to provide the best possible gameplay experience with the least amount of latency possible. In some regions, a selection of servers is specifically designed to be played by users of a non-English language. For example, in Europe there exists servers that are designed for the use of German language, essentially providing an entirely in German gameplay experience where everything, including interactions with other players, are entirely in German. Other languages include French, Italian, and Spanish as a few notable examples. Players can still have the game in their own native language where the interface elements are translated into their desired language but play the game on an English-speaking server. WoW includes both high frequency vocabulary and low frequency vocabulary (Bytheway 2015, 510) through which players may informally learn new words. Digital gaming worlds, like the ones in MMORPGs, create a space that encapsulates multiple countries and cultures while creating their own in-game culture (Bytheway 2015, 512). This combined with what the game provides in terms of its interface, again, creates a plethora of language resources which a player can use to learn English even if their goal is not to learn the language.

Bytheway (2015) presents 15 different language learning strategies that the subjects of the study identified while playing the game. Two strategies are explicitly recommended by the players and thirteen were used by the players themselves. Admittedly, 15 is quite a large number of learning strategies to include in a study the scope of the present one so I will only list the 13 used by the players (in Table 1 below) and only take a more detailed look at the two recommended by the subjects. The thirteen strategies that are listed in the table are less important according to the participants and are thus only listed in the table below. The two that are explicitly recommended by the participants of the study are simple in nature but important nonetheless. The first recommended strategy is “interacting with

players” (Bytheway 2015, 514). The interviewed participants highlight the importance of this activity as it strongly incentivizes actual language use and repetition of words (Bytheway 2015, 515) while playing a video game. Another positive aspect, while not strictly related to vocabulary learning but related to language use and SLA, was interacting with both known and unknown players showing the effect video games can have on WTC (ibid.). The second recommended strategy was simply “playing in English” (ibid.). It was reported by participants that “MMORPGs with an English interface on an English-speaking server present a huge variety of English language that [the participants] consider valuable for vocabulary learning for meaningful and authentic communication” (ibid.), while also highlighting the importance of not using software to translate in-game texts into the participants’ native Chinese (ibid.). As mentioned earlier, the in-game interface of an MMO is a good resource to see and learn new vocabulary items. Below is presented a simple Table of the thirteen other strategies employed by the participants.

Table 1: Strategies reported as used by the participants (modified from Bytheway 2015, 514)

Reading in-game information/popups	Looking up words in dictionaries/google
Noticing frequency/repetition of words	Requesting/giving explanations
Equating image/action to word	Recognizing knowledge gap
Receiving/giving feedback	Noticing in other contexts
Guessing from context	Using word to learn word use
Observing players	Selecting words for attention
Adding to existing knowledge	

MMOs have been proven to be quite a useful tool for language learning in prior research with a multitude of studies listing the benefits of playing games of that particular genre (e.g., Sundqvist and Sylvén 2012), but there has been very little research into whether FPS games have an impact on language learning. In my opinion, FPS games may offer a similar opportunity for vocabulary learning as MMOs but to a lesser extent due to FPS games having, in a general sense, less text on the screen at any given point with much less reading having to be done by the player in e.g., quest texts, ability descriptions, or in-game mechanics. Similarly to MMOs, FPS games are often localized to other languages than English, giving an option to the player to play their game in their native language rather than

English. Regardless, a field in which I theorise FPS games provide a more conducive environment for language learning is the opportunity for spontaneous interpersonal communication through in-game voice chat systems regarding, for example, events in the game or relations between players. Through these spontaneous acts of communication, FPS games may have a larger effect on the WTC of their players than players of MMOs. This specific combination of game genre and language learning needs to be researched more to truly ascertain whether it is indeed good for language learning.

2.3 Willingness to Communicate (WTC)

WTC research came to being to study its effects on a person's L1 by McCroskey and Baer (1985) based on earlier research by Burgoon (1976) among other studies. McCroskey and Baer (1985) defined WTC as "the probability of engaging in communication when free to choose to do so". It has been proven that WTC is connected to other communication related attributes and traits such as communication apprehension, perceived communication competence, and introversion-extroversion working as examples (MacIntyre et al. 1998, 546). Moving from WTC in the L1 to WTC in an L2 presents a major difference in the setting for communication as it affects and changes many of the contributing variables of WTC (ibid.). MacIntyre et al. (1998, 546) encapsulate these differences into the inherent uncertainty present in L2 communication due to varying levels of proficiency. WTC is a central part of inter-personal language communication that affects every L2 user in different ways. These ways can be divided into two very broad categories: "enduring influences", and "situational influences" (ibid.). Enduring influences are ones such as learner personality and intergroup relations, while situational influences are factors like wanting to speak to a specific person, or knowledge of the topic being spoken about (ibid.). MacIntyre (2007, 564) describes WTC as a "convergence of psychological processes underlying communication at a specific moment" and "the probability of speaking when free to do so". An experienced and academically successful L2 user may not feel comfortable communicating in their L2 despite all their success in learning the language. According to MacIntyre (2007, 564) this could mean that the learner may be exhibiting high motivation for learning but also high anxiety about communicating.

2.3.1 Heuristic Model of Variables Influencing WTC

The heuristic model of variables influencing WTC as presented in MacIntyre et al. (1998) is divided into six categories referred to as layers. Three layers represent situation-specific influences on WTC at a given moment in time (layers I, II, and III), while the latter three (IV, V, and VI) represent stable and enduring influences on the process (MacIntyre et al. 1998, 547). The model itself is a pyramid model with layer I being at the top and layer VI at the bottom. I will present the model starting from the bottom, from layer VI as the latter layers create the groundwork for layer I (actual L2 use). In addition, the layers are divided into boxes of which there are 12. These boxes represent key factors of WTC within a single layer. The model is shaped like a pyramid and is presented below in Figure 1.

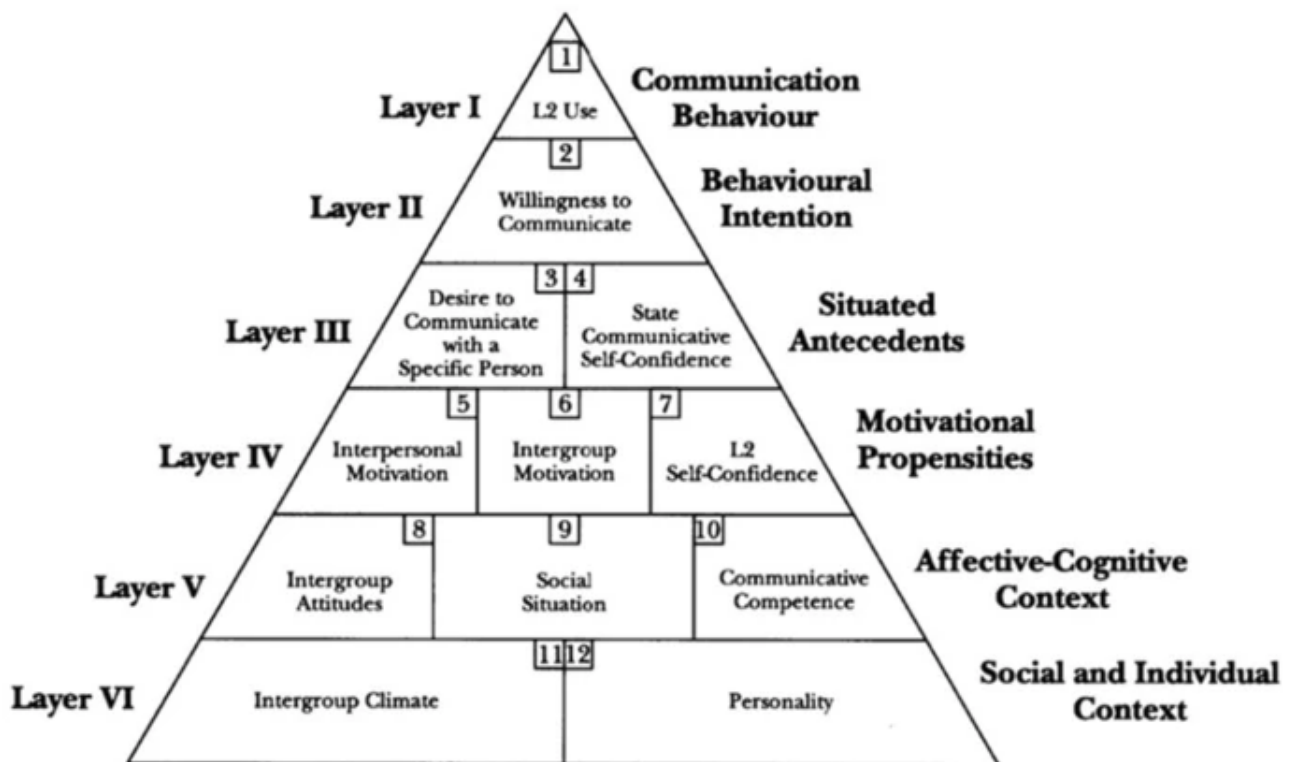


Figure 1: Heuristic Model of Variables influencing WTC (MacIntyre et al. 1998)

Layer VI is the societal and individual context. The societal context refers to “the intergroup climate in which interlocutors evolve” (MacIntyre et al. 1998, 555), and the individual context refers to “stable personality characteristics found to be particularly relevant to communication” (ibid.). Within layer VI there are two boxes, boxes 11 and 12. Box 11 is the intergroup climate and box 12 is simply personality. In box 11, the intergroup climate can

be defined as two complementary dimensions relating to the structural characteristics of the community and their perceptual and affective correlates (ibid.). In essence, this box relates to the position of an L2 speaker in an L1 community and the effects it has on the speaker's WTC. This can have both a positive or a negative effect on a speaker's WTC, as some languages and language users face discrimination and prejudice in some contexts (MacIntyre et al. 1998, 556). Personality traits have long been linked to language use and language learning, as well as WTC. It is commonly thought that certain personality traits are more conducive to both language learning and communicating in an L2. The context of personality in this model shows that "personality helps to set the context in which language learning occurs" (MacIntyre et al. 1998, 558). Layer VI lays the groundwork for communication in an L2 but is somewhat less directly involved in ascertaining a learner's WTC. Layer V is the affective and cognitive context. This layer is less immediately connected to the communication and language learning context but its link to WTC is through more specific variables discussed in layers I to IV (MacIntyre et al. 1998, 551-552). According to MacIntyre et al. (1998, 552) integrativeness is "a construct related to adaptation to different cultural groups and, in particular intergroup motivation". Learning an L2 can be seen as a sign to interact and include oneself more in the target language culture and identity. In contrast to integrativeness, the fear of assimilation is the fear of losing one's "feeling of identification and involvement in with the L1 community by acquiring an L2" (ibid.). These two almost opposing forces may have both a negative or a positive effect on both L2 learning and WTC (ibid.). This encapsulates box 8 (intergroup variables). Box 9 is concerned with the social situation. L2 users experience different levels of WTC in different contexts even if they are expert users of their chosen L2. Five major factors affect these levels: the participants, the setting, the purpose, the topic, and the channel of communication (MacIntyre et al. 1998, 553). Box 10 is communicative competence. MacIntyre et al. (1998, 554) plainly state that "one's degree of L2 proficiency will have a significant effect on his or her WTC". Communicative competence consists of five different competences, which will only be mentioned in the effort to save space in this thesis: linguistic competence, discourse competence, actional competence, sociocultural competence, and strategic competence (MacIntyre et al. 1995, 554-555). What affects an L2 user's WTC is less their actual communicative competence, but rather their perceived communicative competence. Layer IV is motivational propensities. Interpersonal and intergroup motivation are key factors in this

layer, as well as L2 self-confidence. *Control* and *Affiliation* are listed under interpersonal motivation according to MacIntyre et al. (1998). Control limits cognitive, affective, and behavioural freedom of L2 users (MacIntyre et al. 1998, 550). Affiliation is “the amount of interest in establishing a relationship with the interlocutor” (ibid.). Control and affiliation determine to who the L2 user is willing to communicate to. Intergroup motivation is drawn directly from belonging to a group (ibid.). L2 self confidence in this context is defined as “the overall belief in being able to communicate in the L2 in an adaptive and efficient manner” (MacIntyre et al 1998, 551).

Layer III immediately precedes layer II, actual WTC and is referred to as “situational antecedents” (MacIntyre et al. 1998, 547). Two key factors in boxes 3 and 4 are listed as precursors to WTC: “the desire to communicate with a specific person”, and “State communicative self-confidence”. (MacIntyre et al. 1998, 548). These two variables are the cumulative results of layers described above. Layer II is seen simply as the act of being willing to communicate, or “as a readiness to enter into discourse at a particular time with a specific person or persons, using an L2” (MacIntyre et al. 1998, 547). The final layer, Layer I is then communication behaviour, or actual L2 use (ibid.) to which all the later layers are groundwork for. This model is a detailed but still clear way to conceptualize WTC as a construct of various items of L2 learning and use. Everything from personality traits to the position of an L2 in a specific country affects a single language learner’s willingness to communicate in an L2. Due to these factors, I believe it to be a good basis on WTC as to include it in this thesis.

2.3.2 Video Games and WTC

Serious video games, games intended for learning, have seen positive results in terms of aspects related to WTC, such as increased motivation to learn and reduced anxiety (Anyaegebu, Ting and Li 2012). The same results have been noted for vernacular video games not intended for language learning or teaching (e.g., Lee 2019). While the use of serious video games has been found to be useful for L2TL, they may also have unintended effects on some learners simply because not all learners enjoy playing video games. Thus, the use of video games for the sake of motivation only is not recommended (Reinders and Wattana 2015a, 40). Peterson (2010, 14) credits the design features of MMORPGs to three advantages for L2 learning: the real time fantasy gaming context leads to immersion in a target language

environment which facilitates purposeful target language use and learning by doing, the presence of agents and personalized avatars may reduce anxiety and other affective barriers, and the availability of network-based chat creates opportunities for real interaction with native speaker interlocutors and the creation of collaborative interpersonal relationships. Reinders and Wattana (2015a) used a set of questionnaires and a modified version of the MMORPG “Ragnarok Online” to study the WTC of a group of 30 Thai English learners. They compared the participants WTC in a classroom environment compared to the in-game environment of the MMORPG. The results show that the MMORPG environment was more conducive for language learning when compared to the classroom environment, showing reduced levels of anxiety, feeling more confident and willing to interact with other students, and reduced nervousness related to making mistakes (Reinders and Wattana 2015a, 49). Although greater WTC does not directly correlate or lead to better learning results, increased WTC has been shown to have a positive effect on language learning. Lee (2019) comments on the beneficial aspects of how familiarity with virtual communities can enhance L2 WTC. Reinders and Wattana (2012) adapted a commercial video game, again, “Ragnarok Online” to study its effects on the quality and quantity of L2 interactions of 16 Thai University students. This was accomplished by having the participants take part in three gameplay sessions which were then analysed. The results of this study in relation to WTC showed that students were prepared to speak in English in game and the in-game environment “posed less of a barrier to them” (Reinders and Wattana 2012, 183). Additionally, all participants showed increasing amounts of WTC from session to session, with the third session showing the most positive effects (ibid.). It could be said then that communicating in the in-game environment led the participants to be more willing to communicate in that environment (ibid.). As can be seen from the studies mentioned above, a large portion of prior research has focused on the potential of MMORPGs as sources for language learning and WTC while other video game genres have seen far less attention overall. While FPS games have seen little research in terms of WTC, the genre has seen some research in the ways in which players communicate in them and their social structures e.g., Thon (2006), Morris (2003), and Manninen (2003, 2001). Thon (2006, 254) notes that the gaming identities developed through communication through a game, about a game, and around a game are far from anonymous as some players may develop a very well-known and easily recognizable identity. This loss of anonymity can lead to reduced WTC. Additionally, Morris (2003, no page number) states that: “[p]layers have

developed intricate rules and etiquette governing gameplay and social behaviour, based on fundamental principles of fair play and general social cooperation.” The rules and social structures may also have an effect on a player’s WTC. Prior research has shown that video games, at least specifically MMORPGs, have a positive effect on a player’s WTC, it is now time to move on to the empirical section of this thesis and compare the vocabulary learning perceptions and WTC of FPS and MMORPG players.

3. Materials and Methods

In this section I present the materials for the present study, and the methods used to analyse said materials. The materials are presented first, followed by the methods. The materials include participants and a quick overview of the questionnaire used in the study. The methods section presents the analysis methods used in the study, which will be also looked at in additional detail in section 5.1.

3.1 Materials

3.1.1 Participants

The participants for this study are all players of online video games, specifically players of FPS and MMO games (see appendix 1 for the entire questionnaire). No other limiting factors were used in the questionnaire, such as educational background, age, gender, or nationality. Due to these target groups (MMO and FPS players) being quite narrow, it proved to be difficult to reach a sufficient variety of people from all around the world to participate in the questionnaire. As such, the decision was made to mainly share it on “less academic” sources of participants e.g., reddit, and other social media platforms. This will be further explained in 3.1.2. The people who answered the questionnaire were from various European countries such as Norway, Spain, Germany, the Netherlands, and of course, Finland. The questions in the background section of the questionnaire were: age, gender, native language, whether the participant played more FPS or MMO games, level of education, gaming platform of choice, how long they had played their chosen genre for (in years), and the most played game in their chosen genre. These parameters do not provide many identifying factors, as I wanted to keep the questionnaire anonymous for ease of research and to keep the questionnaire somewhat “light” and easy to answer for the participants. There is no specific age-group targeted for this study, but due to ethical reasons and requiring permissions from parents, schools, or guardians, the decision was made that only participants that were 18 years of age or above were applicable for the study. This did reduce the number of valid answers for the questionnaire, but not by a significant margin. No upper limit of age was used in the study, as age is not a factor for the enjoyment of a game or being able to glean useful vocabulary or having an effect on one’s WTC. The goal was to get a minimum of 40 valid answers as to be at least somewhat valid as a quantitative study. This goal was reached toward the end of February 2022 and surpassed in March of 2022.

The decision to study specifically MMO and FPS players and compare them was made due to the researcher's personal preferences, and because of the fact, that, especially in both incidental and non-incidental vocabulary learning studies, MMO players and games have been extensively studied when compared to the FPS genre. The FPS genre has seen more studies in the biology and cognitive side of academia, such as reaction times (Dye, Green, Bavalier 2009). In the field of linguistics, FPS games have been somewhat ignored. Thus, I believe that there is a gap in L2 research that this study can fill. I theorize that the FPS group will have fewer negative answers in the WTC section of the questionnaire than the MMO group, while the MMO group will have fewer negative answers in the vocabulary section of the questionnaire. There have also been no comparative studies in the field of linguistics for these two target groups that I could find. Aside from sports games, I believe MMO, and FPS games are perhaps the most widely played games in the world at the time of writing.

3.1.2 Questionnaire

An online questionnaire, created and distributed via Webropol, constructed of three sections was used to gather data from participants. Webropol was chosen because of easy access through the University of Turku, and ease of use due to the website's simple interface. Additionally, it proved to be very simple to create the questionnaire as there existed a theme for questionnaires that are created in affiliation with the University of Turku, reducing the time required in designing an appealing looking questionnaire. The questionnaire itself contains 50 statements in total (including 8 background related questions such as age, gender, and educational background), with the last question being an open-ended "Is there anything else you would like to say?" type of question. After the background section in the questionnaire there is the WTC section (see Appendix 1 for questionnaire). This section consists of 23 questions and is thus slightly longer than the vocabulary section of the questionnaire. The vocabulary section contains 18 questions. This decision was made because in my background research it appeared that incidental vocabulary learning through video games was more widely researched than the effects of video games on WTC. This does not diminish the importance of the vocabulary section, as it is still exceedingly important in comparing the two groups of players to each other, as is the goal of the present study. The questionnaire was sent out in various "subreddits" on the website www.reddit.com. This site is an internet discussion and image sharing site in which there exist numerous separate communities called subreddits. These subreddits usually specialize in a certain topic,

including but not limited to gaming in general, a specific game, cute pictures of animals, engineering, teachers, linguistics, and language learning and so forth. Most topics one can think of tend to have their own subreddits. These subreddits are usually referred to in shorthand as r/subredditname, e.g., r/languagelearning, r/awweducational. The present questionnaire was shared to r/linguistics, r/gaming, r/languagelearning, and r/pcgaming. In addition, I shared the questionnaire to friends who in turn shared it to their friends. This turned out to be the most useful way to gather answers, as the personal connection to people and their friends helped in acquiring finished answers to the questionnaire. When sharing links through larger websites such as reddit, academic studies such as this one, tend to get drowned under “less serious” and more entertaining posts, even in the more academically inclined subreddits such as r/linguistics and r/languagelearning. Sharing the questionnaire to friends proved to be surprisingly successful strategy to get more participants for the study, as many of the answers for the questionnaire came from friends of friends, as proven by the “what else would you like to add” question which had multiple answers regarding where the participant got the link for the questionnaire from.

The data gathering process lasted roughly three weeks, from early February 2022 to early March 2022. Both questionnaires include statements for the subjects to react to and at least one open-ended question for some qualitative aspects. All three sections combined took around 10 minutes to complete. This amount of time was deemed to be just right to keep the attention of the participants while also providing enough data for study. A pilot version of the questionnaire was sent out to a few chosen individuals prior to actual data gathering. No major changes were made to the questionnaire after the pilot procedure was completed.

3.1.2.1 WTC Questionnaire Section

The WTC questionnaire was adapted and modified from

Willingness to Communicate in Instructed Second Language Acquisition: Combining a Macro- and Micro-Perspective (Appendix 3: WTC Inventory; Mystkowska-Wiertelak & Pawlak 2017) and *Willingness to Communicate, Social Support, and Language-Learning Orientations of Immersion Students* (Appendix B: Speaking outside class; MacIntyre et al. 2001). As with the vocabulary questionnaire, a portion of the questions in this questionnaire were designed by the researcher. This section contains 23 questions, one of which is an open-

ended question and 22 multiple-choice statements. A six-point scale from not at all true to extremely true was used for applicable questions, with one open-ended question. The points on the scale are as follows: not at all true, very slightly true, slightly true, moderately true, very much true, and extremely true. This scale was chosen instead of the more traditional 1 to 5 scale due to it being used in the questionnaire that was used as the basis for this questionnaire. Most questions were from a more general point of view to WTC (both in classroom and out of classroom activities) in the source studies for this section of the questionnaire. These questions and statements were refined to match the topic of this thesis and studying WTC through video games. Some questions from the original basis questionnaire were also left out because they did not fit the scope of this study.

3.1.2.2 Vocabulary Questionnaire Section

The vocabulary questionnaire was adapted from two prior studies: “*The effect of video games on Iranian EFL learners’ vocabulary learning*” (Rasti and Vahdat 2013), and “*Incidental vocabulary acquisition and gamer perceptions of learning in massively online multiplayer role-playing games*” (Hussein 2019). A six-point scale from not at all true to extremely true was used for applicable questions, with one open ended question. Some of the questions in this questionnaire were created by the researcher, due to not finding enough applicable questions to modify from previous research. It contains 18 questions, 17 being multiple-choice questions and one open-ended question. The questions were modified to better fit this specific study, as the questions used in the study referenced above were more specifically aligned for the game *PlayerUnknown’s Battlegrounds*, better known as PUBG. For similar reasons, some questions were left out entirely. This game is an FPS game and, interestingly, according to Hussein 2019, also an MMO game. I disagree with this classification, as PUBG does not fulfil the “massively” part of an MMO game. Hussein (2019) also classifies PUBG as a role-playing game (RPG) which it certainly is not, as it has very few of the defining characteristics of an RPG game, namely role-playing elements, or a story.

3.2 Methods

The quantitative results were analysed by inserting the information into Microsoft Excel to acquire statistical data using simple sum and average commands inherent to Excel. In the case of questions 38, 46, and 47 in the vocabulary section, reverse scoring was used due to the questions being seen as “negative”. The few open-ended questions were analysed by hand and

graded by the researcher. Every answer to a multiple-choice question was given a numerical value e.g., an answer of “not at all true” was assigned a numerical value of 1, while an answer of “extremely true” was assigned a numerical value of 6. Much of the methods used in this thesis were previously explained in the materials section. These methods were used because the study concerns comparing two groups of participants and their scores. Analysis was performed using the IBM SPSS Statistics program. The dataset was input from a self-made Microsoft Excel sheet into the SPSS program to test for normality using a Shapiro-Wilk test, then Independent Samples T-tests were used to statistically compare the two groups to each other on both vocabulary acquisition perceptions and WTC perceptions. These are explained in more detail in the discussion section under statistical analysis. Statistical methods were used to more precisely highlight the differences between the groups and allow for a more scientific approach instead of purely relying on the researcher’s personal interpretations and input.

4. Results

This section presents the results of the study, beginning with an overview of the results before going into more detail about said results. The number of participants was adequate for the use of quantitative analysis methods. There were also three open-ended questions that lends itself to quantitative analysis methods. The total number of participants, and thus, results were 43.

4.1 Questionnaire

4.1.1 Background

As mentioned above, the total number of answers was 45, but two of the participants were underage, thus eliminating themselves from being applicable to the study because of privacy and permissions related issues, as they would have required permissions from their guardians to properly participate in the study. And these permissions were not possible to acquire. Due to the study being anonymous it would have been impossible to contact the under-aged participants to get the consent of their parents for them to participate. The decision was made to eliminate these two participants from the results, leading to the final number of participants for the study to be 43. The background section consisted of 8 questions.

Age was the first question in the background section of the questionnaire so the results of that shall be presented first. There were 6 answer options for participants to choose from for their age: under 15, 16-20, 21-25, 26-30, 31-35, and 35+. Out of the 43 participants 26 (60.5%) were in the age group of 26-30, making it the largest age group by a significant margin. The second largest age group was 21-25 (30.2%). These two groups form 90% of the 43 participants, with the age groups of 30-35 and 35+ only having 2 participants each (4.6% and 4.7% respectively).

Gender was the second background question asked in the questionnaire. This question had four different options for the participants to choose from: male, female, other, and do not want to specify. 27 (62.8%) of the participants identified as male, 11 (25.6%) participants identified as female, 2 (4.6%) identified as other, and finally 3 (7.0%) participants did not want to specify their gender. This makes individuals who identify as male the largest group of participants by a significant amount, nearly doubling all other participant groups combined. Stereotypically it is believed that men play the most video games, and that stereotype does seem to apply to the present study.

The third question in the background section was native language. This question was important to the study as the goal was to study the effects of video games on vocabulary and WTC on L2 learners of English, thus making participants that marked their native language as English not valid for this study. Luckily, and quite curiously, no participants listed English as their native language. A majority of the participants noted Finnish as their native language this being 31 participants (72.09%). The second largest native language of participants was Norwegian with 5 participants (11.63%) listing it as their native language. Norwegian is followed by Dutch with 4 (9.3%) answers as a participant's native language. Estonian, German, and Spanish were all listed once as a participant's native language, each representing 2.33% of participants.

An important fact to ascertain in the background section was that, whether a participant play mostly FPS or MMO games. This question followed the native language question. 22 participants listed MMOs as their preferred genre of game, and 21 participants listed FPS games as their favourite genre resulting in 51.2% percent preferring MMO games and 48.8% preferring FPS games. The relative evenness of the two groups of participants is a very positive factor for the sake of research and this particular study, as it helps in comparison and data analysis. Another important factor for the study was the level of education of the participants. This factor is important because it allows for comparison of the results and answers of the participants between different education backgrounds. Nearly two thirds (27 participants, so 63%) of participants listed higher education (university or university of applied sciences) as their level of education. Twelve (27.9%) had upper secondary school as their answer of level of education, and lastly 4 participants (9.3%) listed vocational school as their level of education. No participants listed primary school as their level of education. Gaming platform of choice was the next question for the participants to answer. A large majority of the 43 participants listed PC as their platform of choice. Out of 43 participants, 40 (93.0%) listed the PC as their platform of choice. Two (4.7%) listed the Sony PlayStation as their platform of choice and 1 (2.3%) participant stated that their favourite platform was the Nintendo Switch. I expected at least one answer for the very popular Xbox console, but no participants listed it as their platform of choice. Two other options also had no answers, but those two options were the Google Stadia, and mobile or smartphone gaming. Albeit mobile gaming being very popular, I think that not a lot of people consider it their main gaming platform. The Google Stadia is quite a rare gaming console and is not very popular, and thus

would be very unlikely to be listed as someone's favourite gaming platform, and as of writing this thesis, it has been announced that the Google Stadia will shut down its services and cease existence as a gaming platform. As it is a cloud gaming platform, the owners of games will not be able to play games they have purchased. I chose to add these two options to the questionnaire on the off chance that someone would consider either one of those their gaming platform of choice.

The second to last question in the background section was how long the participant has played their chosen genre. On average, a participant of this study has played their chosen genre of games for 13.9 years. The longest a participant had played their chosen genre was 31 years, and the shortest amount of time was 2 years. In total the 43 participants have played 598 years of MMO and FPS games. The last question asked the participants what their favourite game in their chosen genre is. In total, 15 different games were listed as most played games. *Final Fantasy XIV* was listed as the most played game by 11 participants (25.58%), making it the most played game in the present study. The second most played game was *Counter Strike: Global Offensive* with 6 participants (13.95%) naming it as their most played game. This concludes the background section of the questionnaire. Next the WTC section of the questionnaire is presented, followed by the vocabulary section.

4.1.2 WTC Section

The WTC section of the questionnaire consisted of 23 statements: 22 statements were multiple-choice, and one was an open-ended question that required input from the participants. As mentioned in the methods section, a scoring system was used for the multiple-choice questions where an answer of "not at all true" was assigned a numerical point value of 1, an answer of "very slightly true" was assigned a point value of 2 etc. As there are 22 multiple-choice questions in this section of the questionnaire, the maximum point value of this section was 132 points. The one open-ended question in this section concerned whether the participant found it easier or more difficult to speak or use English in in-game situations compared to face-to-face situations and asked for clarifications why the participant preferred their chosen option. On average, a participant scored 110 points (rounded up from 109.74) on the WTC-section. This is quite a high score and somewhat indicative of the participants' views on the effect of video games on their WTC. The highest score was 130 points out of 132 points, which was achieved by FPS participant 19. The lowest score was also achieved by

an FPS participant, namely FPS participant 20 with a score of 76. This score is still somewhat high as this participant still scored above the 50% mark of 66 points. There were no questions in this section that required changing the scoring formula. As this study is concerned with comparing MMO players and FPS players, the results of each group are shown in separate Tables in this section. As can be seen from Tables 2 and 3, the average score for FPS players in the WTC section was 105 points, while the average for MMO players was 114 points. This leads to a noticeable difference of 9 points. Interestingly, the highest scorer, as mentioned earlier, is a part of the FPS participants rather than a part of the MMO participants. The FPS group had higher highs and lower lows while the MMO group had only one participant score below 100 points and only five scoring under 110 points. This compares to eight FPS participants scoring under 100 points and twelve participants scoring under 110 points. In total, FPS participants scored 2207 out of a possible 2772 points while MMO participant scored 2512 points out of a possible 2904 points. The difference in maximum points is due to the study having 21 valid FPS participants and 22 valid MMO participants. Thus, the totals are not precisely a good or accurate value to study, but should be mentioned, nonetheless.

The open-ended question provided some valuable insights into what sort of effects video games had had on the participants' WTC. A large number (28) of participants thought that they had an easier time communicating in English during in-game interactions than face-to-face interactions. This means that over 50% of all participants find it easier to communicate in a video game rather than face-to-face. Many of these 28 participants listed anonymity and being able to communicate through avatars as reducing their anxiety to speak English (a foreign language for every participant). Many also mentioned that text-based chatting also reduced their anxiety and allowed them more time to think and formulate better answers, although a majority of these types of answers were written by MMO participants as this genre provides a more suitable pace and gameplay style for text-based chatting when comparing to FPS games. Another large portion (11 participants) found no real difference in communicating in English in a face-to-face scenario and communicating in an in-game scenario. It is hard to determine whether these participants find it equally as easy, or equally as difficult, as none of them provided additional information for this particular detail. These answers were also relatively short, thus leading me to believe that the situations are equally "easy" in their mind. Four participants found communicating in English in-game more difficult than in face-to-face situations. All four participants listed the absence of facial

expressions, body language, and gestures as the reason they found communicating in-game more difficult than communicating in face-to-face situations. Tables 2 and 3 present the points based results of the WTC section with total and average scores showing the differences between the two participant groups.

Table 2: WTC Section results of FPS participants.

Participant	Points	Participant	Points
FPS Participant 1	121	FPS Participant 12	108
FPS Participant 2	119	FPS Participant 13	97
FPS Participant 3	81	FPS Participant 14	118
FPS Participant 4	125	FPS Participant 15	96
FPS Participant 5	98	FPS Participant 16	89
FPS Participant 6	83	FPS Participant 17	113
FPS Participant 7	106	FPS Participant 18	106
FPS Participant 8	116	FPS Participant 19	130
FPS Participant 9	124	FPS Participant 20	76
FPS Participant 10	113	FPS Participant 21	81
FPS Participant 11	107		
Standard Deviation	16.12	Average	105.10

Table 3: WTC Section results of MMO participants.

Participant	Points	Participant2	Points3
MMO Participant 1	114	MMO Participant 12	115
MMO Participant 2	119	MMO Participant 13	118
MMO Participant 3	125	MMO Participant 14	105
MMO Participant 4	103	MMO Participant 15	120
MMO Participant 5	117	MMO Participant 16	119
MMO Participant 6	127	MMO Participant 17	115
MMO Participant 7	113	MMO Participant 18	108
MMO Participant 8	121	MMO Participant 19	115
MMO Participant 9	119	MMO Participant 20	92
MMO Participant 10	107	MMO Participant 21	111
MMO Participant 11	113	MMO Participant 22	116
Standard Deviation	7.76	Average	114.18

4.1.3 Vocabulary Section

The vocabulary section of the questionnaire was somewhat shorter than the WTC section, with only 18 questions, one of which was an open-ended question. As this questionnaire was anonymous, follow-up and requesting answers for this open-ended question from participants who did not answer the question was impossible. The same scoring system as in the WTC section was used for this section as well, with the caveat that three questions were given inverse scoring due to them being viewed as “negative” or “reverse” questions compared to all the other questions in the section with an answer of “not at all true” representing a positive answer and the inverse for negative answers. These three were questions number 38, 46, and 47. The vocabulary section had 17 multiple-choice questions, making the maximum number of points achievable 102. The open-ended question asked the participants to describe how they felt video games had affected their vocabulary learning, allowing for both positive and negative answers. Out of a possible 102 points, on average, an MMO participant scored 89 (rounded up from 88.7) points while an FPS participant scored 85 (rounded up from 84.5) points. This difference is much smaller between the two groups of participants than in the WTC section, dropping from a 9-point difference to a 4-point difference. This leads to a combined average of 87 (rounded up from 86.6) points. A similarly high average score to the WTC section can be interpreted as showing the positive use cases of vernacular video games as good sources for learning an L2, although a pool of 43 participants is not enough data to draw a concrete conclusion from. FPS participant 19 was again the highest scorer, achieving the maximum number of points of 102 out of 102 points. Two other participants achieved 100 points whilst two participants scored below 60 points. The least points scored was 51 points, equalling an even 50% of the maximum points. This score was achieved by FPS participant 5. The lowest scoring MMO participant on the other hand was participant number 20 with 74 points, a difference of 23 points. As can be seen from Tables 4 and 5, the scores were much closer in this section than the WTC section. Both groups performed similarly with a few outliers that affected the averages more. In total, MMO participant scored 1951 points out of a possible 2244 points. FPS participants scored a total of 1775 points out of a maximum of 2142. Due to a small mistake by the researcher, 6 participants did not answer this section’s open-ended question as it was marked as non-mandatory for a short period of time, but the answers that were provided proved to be quite interesting. Out of 37 answers 34 can be interpreted as video games providing a very significant advantage in learning English or being

the primary source of their English vocabulary learning. Only 3 answers do not have these types of answers, but still list video games as being useful, albeit significantly less useful than the majority of the other 34 answers. There were no answers that stated video games to not have had an effect on their vocabulary learning. One participant did state that “there might be a word or two that I have learnt through video games.”. This answer was the least “positive” out of all the answers. A large number of MMO participants listed MMO games as the reason they learnt a large amount of English vocabulary, stating the positive aspects of starting to learn vocabulary before proper English teaching started in their schools. An interesting detail that appeared was that MMO participants had much longer and much more detailed answers than FPS participants. Some going as far as being small paragraphs or multiple rows long, while there was only one comparable FPS answer (and that answer stated that they were an MMO player previously but has since changed to being an FPS player). This is anecdotal evidence and not extremely relevant, but quite interesting in the researcher’s opinion. Below are two Tables (Table 4 and Table 5) presenting the results of the vocabulary section separated by participant groups.

Table 4: Vocabulary Section results of FPS participants.

Participant	Points	Participant	Points
FPS Participant 1	100	FPS Participant 12	91
FPS Participant 2	98	FPS Participant 13	79
FPS Participant 3	88	FPS Participant 14	76
FPS Participant 4	93	FPS Participant 15	98
FPS Participant 5	51	FPS Participant 16	85
FPS Participant 6	68	FPS Participant 17	99
FPS Participant 7	85	FPS Participant 18	88
FPS Participant 8	89	FPS Participant 19	102
FPS Participant 9	95	FPS Participant 20	68
FPS Participant 10	59	FPS Participant 21	72
FPS Participant 11	91		
Standard Deviation	14.16	Average	84.52

Table 5: Vocabulary Section results of MMO participants.

Participant	Points	Participant	Points
MMO Participant 1	87	MMO Participant 12	84

MMO Participant 2	98	MMO Participant 13	95
MMO Participant 3	81	MMO Participant 14	75
MMO Participant 4	98	MMO Participant 15	100
MMO Participant 5	93	MMO Participant 16	97
MMO Participant 6	92	MMO Participant 17	78
MMO Participant 7	80	MMO Participant 18	88
MMO Participant 8	84	MMO Participant 19	95
MMO Participant 9	90	MMO Participant 20	74
MMO Participant 10	88	MMO Participant 21	92
MMO Participant 11	97	MMO Participant 22	85
Standard Deviation	7.79	Average	88.68

5. Discussion

This section analyses the results in more detail, providing statistical comparison between the groups using an Independent Samples T-test to ascertain whether the groups have significant differences or not. The research questions are also answered in this section as well as prior research being compared to the present study as well as linking the results with the theory section of the thesis. The section is divided into two sections starting from the statistical analysis and comparison of the two groups of participants, combined with a look into the open-ended questions to glean some additional details from them. The statistical methods used in this study are provided by the SPSS program combined with the data from the Webropol questionnaire via Microsoft Excel. Following that there is a discussion on the limitations of the thesis.

The statistical comparison section begins with a general look into the statistical analysis methods used in this study. The WTC section is looked at first, as it proved to be the more statistically significant section out of the two sections of the questionnaire. This is followed by a look into the vocabulary section, which is not as statistically significant as the prior section, but skews in a similar direction and lending a slight amount more credence to the analysis provided in the WTC section.

5.1 Statistical Comparison

As the questionnaire comprised a vocabulary and WTC section, both sets of data were entered into SPSS to test for normality to decide which type T-test to apply to the datasets. As Ricci (2005) declares in Larson-Hall (2010, 84) that the Shapiro-Wilk test is the most fitting test for normality for datasets that have a small sample size of under 50. A p -value of over .05 can be interpreted as being normally distributed (ibid.). Since the study examines two groups of participants, both groups have a p -value or a significance value. In the vocabulary section, FPS participants showed a p -value of .07 and the MMO participants a much larger p -value of .317. Comparatively, in the WTC section the FPS participants had a p -value of .296 and the MMO participants displayed a p -value of .149. This means that for both questionnaires and for both groups of participants the data can be interpreted as being normally distributed. Larson-Hall (ibid.) does state that “these kinds of formal tests of assumptions suffer from low power” meaning that the state of normal distribution cannot be conclusively said.

Nonetheless, due to the data appearing to be normally distributed, an Independent Samples T-

test was used to compare the two groups. This specific T-test is designed for datasets that have exactly two groups of data to compare that consist of different people (Larson-Hall 2010, 136). This thesis has the exact parameters for the use of an Independent Samples T-test: thus this type of test was used to compare the two groups of participants. Once again, the p -value is of importance in these T-tests as it shows whether the result of the test is statistically significant or not. A p -value of under .05 is considered statistically significant in an Independent Samples T-test. Statistical significance is an important aspect of any quantitative study, but as Kruskal (1978, 946) in Larson-Hall 2010 (373) says “[a] lack of statistical significance at a conventional level does not mean no real effect is present; it means only that no real effect is clearly seen from the data.”

5.1.1 Analysis of WTC Section

The analysis of the results of the T-test on the WTC section shall be discussed first, as it was the first content section of the questionnaire. The MMO participant group ($n=22$) (mean=114.18 with a standard deviation of 7.76) and the FPS participant group ($n=21$) (mean=105.10 with a standard deviation of 16.12) differ significantly from each other in this section, with the two-sided p -value of .027 and a Cohen’s d of -.724. Cohen’s d compares the first variable of the test (the FPS group) to the second variable, giving the difference between the means of two independent samples (Larson-Hall 2010, 115). The difference is skewed toward the second variable (the MMO group) thus leading to a negative value. A Cohen’s d of 0.7 is considered a medium to large difference (Larson-Hall 2010, 119). These two values, $p=0.027$ and $d=0.7$ do seem to indicate a statistically significant difference between the two groups with the MMO participant group scoring higher points than the FPS participant group as displayed in the results section above. This is the opposite result to what was hypothesized prior in this thesis. It was expected that due to the often fast-paced and on-the-spot type of communication required in most FPS games, the FPS participants would have scored higher than the MMO group in the WTC section. This is not to say that MMORPGs do not present opportunities for similar fast-paced communication, but it usually requires a third-party VoIP program such as Discord or TeamSpeak for voice communication as they typically do not offer in-game voice chat. This lack of an in-game voice chat is what led to the hypothesis that MMORPG players would be less ready and willing to communicate spontaneously than FPS players. The open-ended questions shed additional light on this aspect, as many participants from the MMORPG group did mention text-based chats and having low anxiety due to this

type of communication allowing for time to think and reduced chances for the participant to lose face or face other negatively perceived consequences. FPS games do offer in-game text chat as well, but it is used for different purposes than in MMORPGs. Unfortunately, it has been observed that these in-game text chats are often used to be critical of one's teammates or enemies, often even insulting them on a personal level not linked to the games at all. Video games and toxicity (insulting or generally being mean to teammates or enemies etc.) are another study altogether, but it certainly could have an effect on a gamer's WTC.

Below is a boxplot of the WTC section, which helps in visualizing the scores of the section. Larson-Hall (2010, 245) describes the boxplot as one of two "good ways to visually examine data where group differences may occur" also noting that the boxplot is far superior to the more commonly used in SLA research barplot (ibid.). The line in the below boxplots is the median of the scores and the coloured areas are called the interquartile range (IQR) (ibid.). This IQR contains all the scores that are within the 25th to 75th percentile (ibid.). Finally, the lines coming out of the IQRs are called whiskers and they extend to the "minimum and maximum points of the dataset" (ibid.). As can be seen from the boxplot, the FPS participant group had much greater variance in scores than the MMO group. This is true for the vocabulary section as well, which will be presented later. There is an interesting outlier though in the MMORPG participant section, which is noted in the boxplot as a circle with the number 41 next to it, representing the number of the participant in the dataset. This participant is MMORPG participant number 20. Participant 20 comments on their WTC being more "hindered by social difficulty more than a fear of speaking a foreign language" while highlighting having to learn different social rules for in-game encounters and interactions with other gamers. They also state that "while I wouldn't willingly go talk to new people in-game in English (or Finnish), I have no trouble explaining the things I know, if asked." This participant highlights the fact that their WTC is not affected by language use as such or anxiety coming from language use, but anxiety caused by social factors. This is echoed by multiple other participants as well, while others highlight the anonymity of in-game communication as being helpful for their WTC. Another high scorer in the WTC boxplot is FPS participant 20. This participant also echoes the benefits of anonymity as reducing social anxiety and stating that in-game situations are easier than face-to-face situations which are "socially more demanding." There are two marked outliers in both participant groups that scored significantly above the mean. One of these participants is FPS participant 19 who

shares the view of in-game communication providing a layer of animosity that reduces anxiety and makes communication easier. The other high scorer of the FPS participants was participant 4, who states that “I grew up speaking English in-game and it transferred seamlessly into face-to-face communication. [...] I didn’t feel any difference between in-game and face-to-face communication in English.” This participant is clearly very confident in their English L2 skills and is ready and willing to communicate whether it be in-game or in person. In the MMO participant group, participants 3 and 6 are the two outliers with the highest points scored. Both these participants again mention the reduced anxiety of in-game communication, but participant 6 also mentions the “increased likelihood of shared terminology and increased feeling of community” to be helpful for their WTC. These outliers reflect findings in the theory section such as in Reinders and Wattana (2012) and Lee (2019) on the positive aspects of video games on a player’s WTC.

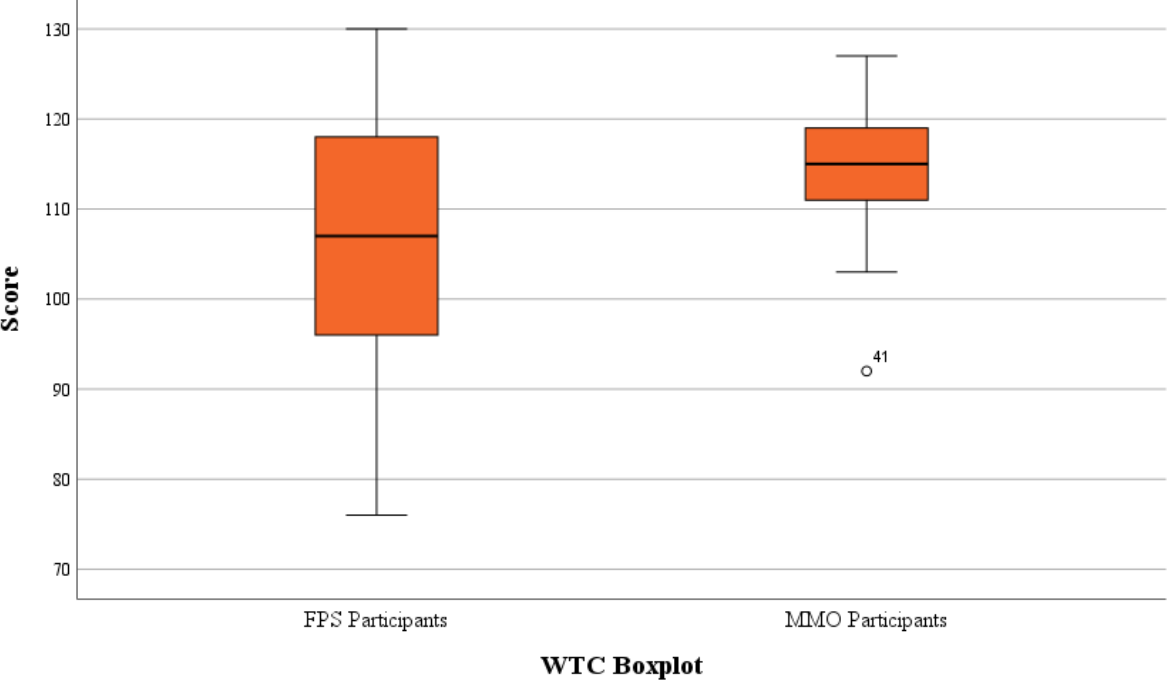


Figure 2: Boxplot of statistical output from the WTC section.

5.1.2 Analysis of Vocabulary Section

As mentioned above, this section’s statistical analysis results are less significant than the WTC section. In this section the MMO group (mean=88.68 with a standard deviation of 7.79) and the FPS group (mean=84.52 with a standard deviation of 14.16) did not differ significantly from each other with a two-sided *p*-value of .245 and a Cohen’s *d* of -.366

(rounding to -.4). These p and Cohen's d values lend the results to not be statistically significant. The Cohen's d value can be interpreted to be a small to medium difference (Larson-Hall 2010, 119). As described above the negative value of Cohen's d shows that the MMO group scored higher scores in this section as well as the WTC section. The statistical insignificance could be due to the very small difference in scores, as it is barely a four-point difference, or due to the small dataset. Nonetheless, these scores are skewed in the same direction as the WTC section, lending more credence to the other section's statistically significant difference. The hypothesis for the vocabulary section was proven correct, with the MMO group scoring somewhat higher points than the FPS group, but not enough for the difference to be statistically significant. Both means were very high implying that both types of games are useful for vocabulary learning as perceived by the participants of this study. This is a statement that has been echoed in many previous studies (e.g., Sundqvist and Sylvén 2012, Bytheway 2015) noting the positive aspects of video games for incidental vocabulary learning.

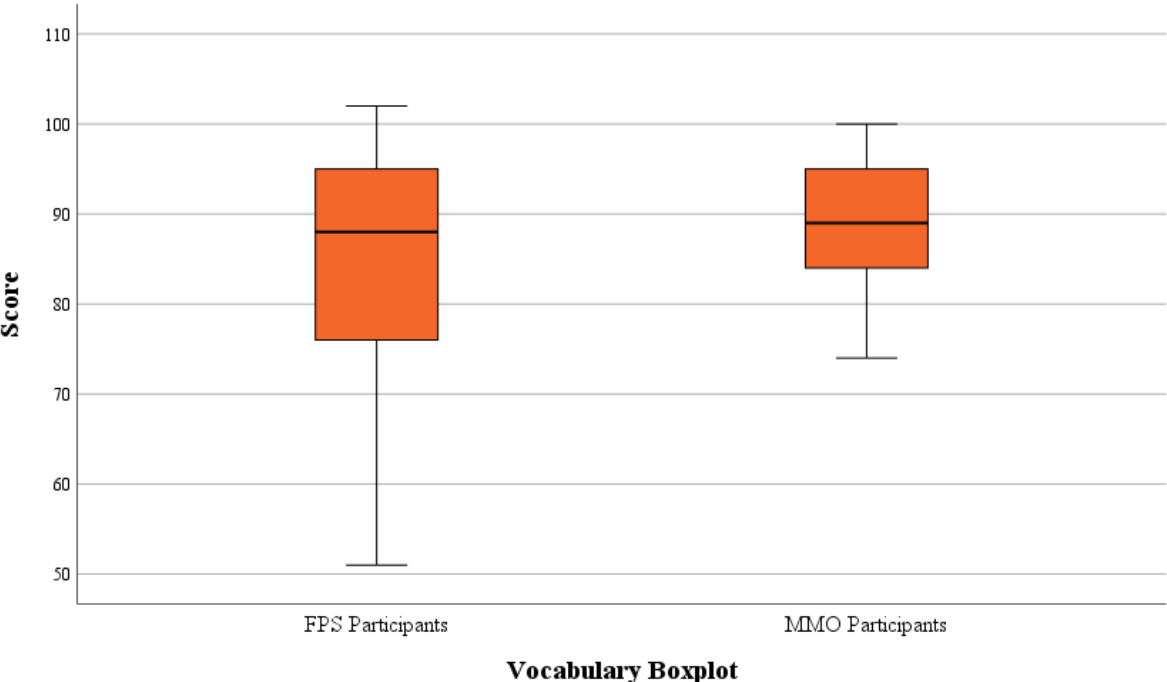


Figure 3: Boxplot of statistical output from the vocabulary section.

Presented above is a boxplot of the vocabulary section. It resembles the WTC section's boxplot significantly as the MMO participants show a tighter IQR and shorter whiskers than the FPS group. Similarly, the FPS participants have a much higher variance

than the MMO participants. There is one striking difference though, the size of the whiskers when looking at participants who scored above the mean. This means that there was a smaller difference from the IQR to the highest scorers in the vocabulary section of the study. One can see that the FPS group has a very low scoring outlier with a score of 51 points. Upon further inspection of this participant's answers, it can be seen that there is a general indifference in the attitude of the participant. Most multiple-choice questions were answered with a 3, stating no real impact one way or the other. Unfortunately, as mentioned in the materials section, a few participants managed to complete the questionnaire without answering the open-ended question at the end of the vocabulary section, this participant being a very disappointing inclusion in that group as it would have been interesting to see their views with such an array of answers.

The highest scorer in the FPS group is, as they are in the WTC section as well, participant 19. This participant scored the maximum number of points achievable in the section (102 points). Unfortunately, the participant's answer to the open-ended question is not exactly filled to the brim with useful information. The entirety of the answer is as follows: "50%". This can be interpreted in many ways, but presumably what the participant meant was that games have had an impact on their vocabulary learning, possibly even to an extent of half of their learning. The outliers in the MMO participant group are participant 20 and participant 15. Participant 20 was a low-scoring outlier in the WTC section as well, but with a significantly lower score in that section than in this section. The participant's score (92) is not low at all when comparing to the maximum points of a 102, but it is somewhat low when comparing to the rest of the MMO group. This participant brings up the fact that video games provide them visual aids with which to better acquire new words and phrases, but not much else can be seen from their answers. Participant 15, on the other hand provided, a long and interesting answer about asynchronous and synchronous chatting in MMORPGs. They state that "I picked up a natural flow in the language this way", this way being chatting through asynchronous text chats MMORPGs. Synchronous voice chats helped this participant "gain a better pronunciation and flow in the vocal part". Finally, they state that "School gave me a foundation on which I could build, games give me the materials to continue building." This statement highlights how video games provide a valuable space for actual language use and practice which has been found to be an important part of any language learning, not only vocabulary learning. Some participants also mentioned the fact that video games provide

good sources for specific low frequency vocabulary (Nation and Hunston 2013) that would otherwise not come to the attention of the participants. Both a learnful and gameful (see 2.1.1) disposition can be seen from the answers to the open-ended questions, especially in this section. Judging from the answers, the participants seem to have an open-minded disposition to learning while playing games, thus showing both learnful and gameful aspects.

In conclusion, the statistical comparison found that the MMORPG participants scored higher in both the areas that were studied in the questionnaire. Both sets of data were normally distributed according to a Shapiro-Wilk test for normality which allowed for the use of an independent samples T-test. This independent samples T-test found there to be statistically significant differences in the WTC section of the questionnaire, but no statistically significant difference in the vocabulary section. The vocabulary section did present similar results to the WTC section, but the differences were too small for them to be statistically significant. Nonetheless the similar findings can be interpreted as providing some more stable ground for the findings of the WTC section. Looking at the outliers of the sections gave a small amount of additional information into why these outliers scored the way they did and gave a general sense of why the participants answered and thought the way they did of their WTC and incidental vocabulary learning perceptions. In general, the open-ended questions indicated that the participants found their chosen genres helpful in L2 vocabulary learning and had a general sense of usefulness for their WTC. This finding is in accordance with previous research on the subject of video games being helpful for language learning, but there has been very little research in comparing different genres of video games and how they relate to language learning. As such it is difficult to compare the results and analysis of this thesis to previous studies. This is something that can be elaborated in future studies. Perhaps comparing other aspects of language learning or different genres of vernacular video games can be used to create more useful and interactive language learning through video games.

5.2 Limitations

This thesis, like most scientific studies, has limitations. One of the limitations that came up while working on this thesis was the small dataset and limited number of participants. The number of participants (43) were just enough to make use of quantitative and statistical methods. Even though these methods were usable, these methods produce results that are lacking in statistical power and barely achieve statistical significance leading to results that

cannot be generalized but still provide useful data and a look at some differences in the target groups. The field being studied is quite narrow and the comparative methods used lead the study to be even more narrow in scope but still managing to provide a somewhat cohesive result in accordance with prior studies. Questionnaires provide an easy and simple way for people to participate in a study such as this, but often (as is the case in this thesis) a questionnaire is based on the perceptions, ideas, and answers of the participant themselves rather than data evaluated and scored by a researcher or another more qualified party. As no real language tests were used, the answers and perceptions of the participants of this study could be entirely inaccurate because self-assessment and self-reporting are not very objective ways of gaining scientific data. With no prior experience most of the theory and data-acquiring methods were unfamiliar and thus difficult for the researcher to apply correctly. Time and resources limited the thesis as well, as not enough time could be put into the thesis to make it as good as it could be. Data collection could have lasted longer and could have been spread wider to get more answers for the thesis, but the fickle nature of using the internet as a data source could have possibly led to either no answers, or too many answers for the scope of a master's thesis. In the end, the number of participants was adequate for both analysis and valid statistical study.

Nonetheless, the thesis does provide some data that could be useful for SLA research in the future. This is yet another study on the benefits of video games on L2 learning due to all but one participant scoring high in both sections of the questionnaire and providing almost universally positive answers to the open-ended questions. Additionally, the comparative nature of the study can be used to highlight the more positive impact MMORPGs have on L2 learning compared to FPS games, however small the practical application of that may be to SLA and teaching.

6. Conclusions

The goal of this thesis was to compare two groups of video game players: gamers who primarily play MMORPG games, and gamers who primarily play FPS games. These two groups were compared on two factors, how the participants perceived video games affecting their vocabulary learning, and how video games have affected their WTC. Data was gathered by distributing an online questionnaire using the Webropol website. Sufficient data was gathered to apply a statistical comparison using an Independent Samples T-test in the IBM SPSS statistics program. The research question comparing the two groups was answered and found that the MMORPG participants scored higher points in both the WTC and vocabulary sections of the questionnaire. Thus, it can be concluded that the two groups differ. Many studies have found video games to be useful for language learning, but research has yet to happen on which genre of video game appears to be more useful for language learning. The results of this thesis and the statistical analysis seem to indicate that MMORPG players have a significantly ($p=.03$) better perception of the effect of video games on their WTC than FPS players. A similar result was observed in the vocabulary section, albeit it was not statistically significant ($p=.25$) but still showed results that resembled the WTC section (meaning that the scores were leaning more in favour of the MMO participants, but not significantly so). Prior research has also concluded on the specific usefulness of MMORPGS for language learning, this thesis echoes these prior sentiments.

Based on this thesis, further research could be done on comparing different video game genres, or these two genres again, but with a larger dataset and more participants. Another factor ripe for further study is whether age had any effect on the facets of language learning being studied. At a glance, there seems to be little difference in the dataset of this thesis in terms of age and questionnaire scores (the most evident differences being between the participant groups and not a single variable like age), but a more detailed investigation into individual differences and video game genres would be a welcome addition to this scientific field. Additional video game genres could be researched in a similar manner such as MOBAs (e.g., Dota 2, or League of Legends), simulation games (e.g., The Sims, PowerWashing Simulator, or Cities: Skylines), or strategy games (e.g., XCOM, Fire Emblem series, or StarCraft series). Additional aspects of language learning or general language use warrant additional study as well, such as how often video game players switch from their

native language to English or vice versa. Games (serious or vernacular) provide a different type of learning experience and environment for language learners that has been proven quite useful for different aspects of language learning, but it still requires additional study. This thesis, however little the significance, sheds a small amount of light into language learning perception differences of different video game groups.

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Appendices

Appendix 1: Questionnaire in Word compatible form

Background Section

1. Age.
2. Gender.
3. Native language.
4. I mostly play MMO or FPS games?
5. Level of education?
6. Gaming platform of choice.
7. How long have you played MMO/FPS games? (Years)
8. Most played game in the chosen genre?

WTC Section

9. I know I am able to take part in a dialogue in a group in English.
10. I know I am able to speak in English without preparation.
11. I know I am able to correct somebody else's errors or mistakes in English.
12. I know I am able to self-correct when somebody draws my attention to my error.
13. I know I am able to give advice on in-game matters.
14. It is easier for me to communicate in-game because of the anonymity provided by an in-game avatar or character.
15. I have studied or learned English because I wanted to better play games in English.
16. I consider having a good level of English important for playing games.

17. Knowing English is important for me because I do not want to appear foolish in-game.
18. I am willing to initiate communication in English with another player I meet in-game.
19. I am willing to play on an English-speaking server or team.
20. I want to make friends with people from other countries whom I meet in-game.
21. I am willing to ask for clarifications when I do not understand something in-game in English.
22. I actively try to find content related to my chosen game or genre in English.
23. I often talk about in-game events or situations in English with friends.
24. When I discuss my chosen game or genre in English, I feel like a member of a community.
25. I am willing to use English to speak or write with people with whom I share a native language.
26. I am willing to modify what I have said in English in response to an indication of an error.
27. I am willing to present gameplay strategies or act as an in-game leader in English.
28. I am willing to have a conversation with a stranger I meet in-game in English.
29. I am willing to ask for clarifications in English when I do not understand something in-game.
30. I am willing to describe the rules or mechanics of my game in English.
31. Do you find it easier or more difficult to speak English in an in-game situation compared to a face-to-face situation? Why?

Vocabulary section

32. I have learned new words or expressions through my chosen genre.

33. I feel that the game and interactions in-game have helped to improve my English vocabulary.
34. When I encounter a word that I do not recognize in-game I try to find out the meaning independently.
35. The game provides opportunities for deepening my vocabulary knowledge.
36. Repeated exposure to vocabulary in-game helps me to learn words.
37. I feel that games are helpful for learning vocabulary incidentally.
38. Learning vocabulary through games is stressful.
39. Having a good time in-game helped in the acquiring of new vocabulary.
40. Other players have helped in the learning of new vocabulary.
41. I use words learned in-game in other situations (e.g., speaking with friends).
42. I have learned words from games which I would not have learned otherwise.
43. I have learned vocabulary from communicating with other players.
44. I feel that words used and learned in-game are usable outside the game as well.
45. I find the specific vocabulary present in my genre to be useful to learn.
46. I do not feel that I have learned new words from playing my chosen genre.
47. I find games to be overrated for incidental vocabulary learning.
48. Sounds, images, and graphics assisted in understanding the meaning of words better.
49. In your own words, how do you feel that video games have affected your vocabulary learning?
50. Is there anything else you would like to say?

Appendix 2: Full Results of Questionnaire

Participant	Age	Gender	Native Language	WTC Score	Vocabulary Score	Total Score
fps p1	21-25	m	fin	121	100	221
fps p2	26-30	m	fin	119	98	217
fps p3	26-30	f	fin	81	88	169
fps p4	26-30	m	nor	125	93	218
fps p5	21-25	m	est	98	51	149
fps p6	31-35	m	fin	83	68	151
fps p7	26-30	m	fin	106	85	191
fps p8	21-25	f	fin	116	89	205
fps p9	26-30	m	fin	124	95	219
fps p10	26-30	m	fin	113	59	172
fps p11	26-30	m	fin	107	91	198
fps p12	26-30	m	nl	108	91	199
fps p13	26-30	m	nl	97	79	176
fps p14	35+	m	nl	118	76	194
fps p15	21-25	m	fin	96	98	194
fps p16	26-30	f	fin	89	85	174
fps p17	26-30	m	fin	113	99	212
fps p18	26-30	m	spa	106	88	194
fps p19	21-25	f	fin	130	102	232
fps p20	26-30	m	fin	76	68	144
fps p21	21-25	m	fin	81	72	153
sd				16.12	14.16	
total				2207	1775	3982
avg				105,0952	84,52381	189,619

Participant	Age	Gender	Native Language	WTC Score	Voc Score	Total Score
mmo p1	21-25	n/a	nor	114	87	201
mmo p2	26-30	m	fin	119	98	217
mmo p3	21-25	other	fin	125	81	206
mmo p4	26-30	m	fin	103	98	201
mmo p5	26-30	f	ger	117	93	210
mmo p6	26-30	m	fin	127	92	219
mmo p7	21-25	f	fin	113	80	193
mmo p8	26-30	m	fin	121	84	205
mmo p9	26-30	m	fin	119	90	209
mmo p10	31-35	m	fin	107	88	195
mmo p11	26-30	m	fin	113	97	210

mmo p12	21-25	other	fin	115	84	199
mmo p13	35+	m	fin	118	95	213
mmo p14	21-25	f	fin	105	75	180
mmo p15	26-30	f	nor	120	100	220
mmo p16	21-25	f	fin	119	97	216
mmo p17	21-25	m	nor	115	78	193
mmo p18	26-30	n/a	nor	108	88	196
mmo p19	26-30	f	nl	115	95	210
mmo p20	26-30	n/a	fin	92	74	166
mmo p21	26-30	m	fin	111	92	203
mmo p22	26-30	f	fin	116	85	201
sd				7.76	7.79	
total				2512	1951	4463
avg				114,1818	88,68182	202,8636

Appendix 3: Finnish Summary

Johdanto

Digitaaliset videopelit ovat alati kasvava viihteen ala päästyään suosioon 1970-luvulta lähtien (Reinhardt 2019, 5). Näiden pelien alkuperäinen käyttötarkoitus oli kuitenkin oppiminen ja opettaminen. Ensimmäiset videopelit olivat hyötypelejä eikä henkilökohtaiseen viihteeseen käytettäviä pelejä niin kuin ne nykypäivänä useimmiten ovat. Hyötypelit ja viihdepelit ovat erittäin tutkittu aihe useamman tieteen alan näkökulmasta, mukaan lukien toisen tai vieraan kielen oppimisen ja opetuksen näkökulmasta (esim. Sylvén ja Sundqvist 2012 tai DeWilde ja Eyckmans 2017). Tämä tutkielma vertaa ensimmäisen persoonan ammutapeliin (tunnetaan myös FPS-peleinä, englanniksi *First Person Shooter*) pelaajia massiivisten monen pelaajan verkkoroolipeliin (tunnetaan myös MMORPG-peleinä, englanniksi *Massively Multiplayer Online Role-Playing Game*) pelaajien sanastonoppimiskäsityksiä ja näkökulmia siitä, miten heidän suosima videopelin tyylilaji vaikuttaa heidän halukkuuteensa kommunikoida (WTC, englanniksi *Willingness to Communicate*). Tutkimuskysymyksen tälle tutkielmalle voisi muotoilla seuraavasti: ”miten FPS ja MMORPG pelaajien sanastonoppimiskäsitykset ja halukkuus kommunikoida eroavat toisistaan?”

Teoreettinen tausta

Videopelit ja kieltenoppiminen

Viihteeseen tarkoitettuja videopelejä on tutkittu kieltenoppimisen näkökulmasta jo kauan ja useimmiten tutkimukset ovat käyttäneet termiä ”peliin pohjautuva” (*game-based*) tutkiessaan videopeliin ja kieltenoppimisen yhteyksiä (Reinhardt 2019, 8). Reinhardt (ibid.) tuo esille kolmen termin jakauman, jotka selittävät tähän tutkimukseen sopivammalla tavalla videopeliin käyttötarkoituksia kielenoppimisen näkökulmasta: pelitehostettua (*game-enhanced*) vieraan kielen oppimista ja opetusta (L2TL, *foreign and second language teaching and learning*), peliin pohjautuvaa (*game-based*) L2TL, ja pelitietoinen (*game-informed*) L2TL. Pelitehostettu L2TL (ibid.) tarkoittaa viihteeksi tarkoitettujen pelien hyödyntämistä kielenoppimisessa. Peliin pohjautuvalla L2TL tarkoitetaan sitä, kun peli tehdään tarkoituksella opettavaksi ja opettamisen ja oppimisen tarkoituksiin sopivaksi (hyötypelit) (Reinhardt 2019, 10). Viimeiseksi pelitietoisella L2TL tarkoitetaan pelien ja leikkien teorioiden hyödyntämistä vieraan tai toisen kielen oppimisessa ja opetuksessa (Reinhardt

2019, 9). Näihin liittyy vielä kaksi näkökulmaa, jotka auttavat oppijaa tai pelaajaa toisen kielen oppimisessa tai kielen tahattomassa oppimisessa. *Pelillinen* näkökulma sekä *opetuksellinen* näkökulma (Reinhardt 2019, 11–12). Pelillinen näkökulma auttaa oppijaa osallistumaan opetukselliseen sisältöön menettämättä kykyään osallistua pelilliseen sisältöön (Reinhardt 2019, 11). Opetuksellinen näkökulma on pelillisen peilikuva ja auttaa pelaajaa löytämään oppimiseen sopivia tilaisuuksia tilanteista, joissa oppiminen ei ole päätarkoituksena (Reinhardt 2019, 12). Näiden näkökulmien yhdistäminen on tärkeää, jotta tahaton kielenoppiminen onnistuu (Reinhardt 2019, 13).

Knight, Marean ja Sykes (2020) tuovat esille neljä hyötyä ja neljä vuorovaikutusta oppijan ohjaamasta pelaamisesta vieraan kielen oppimisen ja opetuksen näkökulmasta. Ensimmäinen hyöty on oppijan ohjaaman pelaamisen tuoma matalan riskin simuloitu harjoitus, jolla on merkityksellisiä seurauksia (Knight, Marean ja Sykes 2020, 105). Toinen on tunnetasolla kannustavasta ympäristöstä saatava hyöty. Kolmas hyöty saadaan videopelien kompleksista kielestä (ibid.). Viimeinen hyöty on netissä käytävien vuorovaikutusten tuoma kansainvälinen pätevyys ja kyky ymmärtää muita perspektiivejä (ibid.). Neljä pelattavuuden ja pelaamisen vuorovaikutusta ovat vuorovaikutus pelin kanssa, vuorovaikutus pelin kautta, vuorovaikutus pelin ympärillä ja vuorovaikutus peliin liittyen (Knight, Marean ja Sykes 2020, 106–108).

Sanaston oppiminen

Videopelien sanasto on hyvin laajaa ja se tulee monelta eri osa-alueelta. Peleissä voidaan käyttää sanastoa fantasiapeleistä tulevaisuuteen sijoittuviin tieteisfiktio peleihin. Täten sanasto, jota esiintyy videopeleissä voi olla hyvin spesifiä tietyn aihealueen terminologiaa tai erittäin laajalti käytettyä yleissanastoa. Nation ja Hunston (2013, 9) painottaa sanojen frekvenssierojen ymmärtämistä. Nationin ja Hunstonin (ibid.) on olemassa kolmen eri frekvenssin, eli ilmentyvyyden, sanoja. Korkean frekvenssin sanat ovat usein funktiosanoja (kuten prepositiot ja pronominit), joita ilman kieltä olisi vaikea käyttää (Nation ja Hunston 2013, 18). Yleisimmät sisältösanat ovat myös korkean frekvenssin sanoja. Keski-frekvenssin sanat ovat suurimmaksi osaksi sisältösanoja, jotka eivät ole yhtä yleisiä kuin korkean frekvenssin sisältösanat (ibid.). Matalan frekvenssin sanat ovat tämän jakauman suurin ryhmä, vaikka ne muodostavat vain pienen osan englannin kielen sanoista aktuaalisessa käytössä (Nation ja Hunston 2013, 19). Nation ja Hunston (2013, 2–3) esittelevät samassa teoksessa

neljä sanaston- ja kielenoppimisen säiettä, jotka yhdessä luovat ideaalin kielenoppimiskokemuksen ja -ympäristön. Ensimmäinen säie on ymmärrettävästä merkitykseen keskittyvästä inputista oppiminen. Toinen on merkitykseen keskittyvän outputin säie. Kolmas säie on kieleen keskittyvän oppimisen säie ja neljäs, ja viimeinen, säie on sujuvuuden kehityksen säie.

MMORPGt erityisesti ovat saaneet todella paljon huomiota kielen- ja sanastonoppimisen suhteen. Bytheway (2015, 510) toteaa, että MMORPG peli *World of Warcraft* (WoW) sisältää sekä korkean, että matalan frekvenssin sanastoa, joita pelaajat voivat peliä pelatessaan oppia. Hän esittelee myös tärkeitä kielenoppimisstrategioita, joita hänen tutkimuksensa osallistujat suosittelivat pelatessaan MMORPG pelejä. Strategioita listataan viisitoista, joista kaksi tärkeintä ovat ”toisten pelaajien kanssa vuorovaikuttaminen” ja kaikessa yksinkertaisuudessaan ”englanniksi pelaaminen” (Bytheway 2015, 514-515). FPS pelit ovat tyylilajina hyvin vähän tutkittu minkäänlaisen kielenoppimisen näkökulmasta, mutta tyylilajilla on samanlaisia kielenoppimismahdollisuuksia kuin MMORPG peleissä, vaikkakin hieman niukemmin ja eri tavoin.

Halukkuus kommunikoida

WTC tutkimus sai alkunsa halusta tutkia tätä ilmiötä äidinkieleessä. McCroskey ja Baer (1985) tutkivat äidinkieltä perustaen tutkimuksensa esim. Burgoonin 1976 julkaistuun työhön. Halukkuus kommunikoida voidaan määritellä todennäköisyytenä osallistua kommunikaatioon, kun siihen osallistuminen on vapaaehtoista (McCroskey ja Baer 1985; oma käänös). Äidinkielen WTC ja vieraan kielen WTC eroavat toisistaan huomattavasti esimerkiksi kommunikaation asetelmissa sekä siihen vaikuttavien tekijöiden ja muuttujien muuttumisessa (MacIntyre et al. 1998, 546). Nämä erot voidaan kiteyttää vieraan kielen kommunikaatiolle ominaisista tasoeroista johtuvaksi epävarmuudeksi, joita äidinkielisessä kommunikaatiossa ei ole (ibid.). WTC:n luomat vaikutukset voidaan jakaa karkeasti kahteen osa-alueeseen: kestäviin vaikutuksiin ja tilannesidonnaisiin vaikutuksiin (ibid.; oma käänös). Kestäviä vaikutuksia ovat esimerkiksi yksilön persoonallisuus ja ryhmäsisäiset suhteet, kun taas tilannesidonnaisia vaikutuksia voisivat olla esimerkiksi halu puhua tietylle henkilölle tai tieto (tai tiedon puute) keskustelun aiheesta.

Hyötypelit ovat todettu positiiviseksi tekijäksi WTC:hen liittyvien aspektien suhteen, kuten Anyaegbun, Tingin ja Lin (2012) tutkimus, joka totesi niiden vähentävän ahdistuneisuutta ja lisäävän motivaatiota oppimiseen. Reinders ja Wattana (2015a, 40) kommentoivat kuitenkin, että hyötypelien käyttö pelistä pelin käyttämisen vuoksi ei ole suositeltua tai hyödyllistä kielenoppimiselle, koska ei voi olla varma siitä, että kaikki osallistujat tai oppijat pitäisivät niitä hauskoina tai hyödyllisinä. Samankaltaisia tuloksia on myös löydetty viihteeksi tarkoitetuista videopeleistä (esim. Lee 2019 tai Reinders and Wattana 2015). Lee (2019) tuo esille videopeliyhteisöjen ja niihin kuulumisen hyödyn, joka lisää toisen kielen halukkuutta kommunikoida. Reinders ja Wattana (2012 ja 2015) mukauttivat Ragnarok Online nimisen MMORPG:n suotuisammaksi kielenoppimiseen ja saivat selville, että pelin pelaaminen sai osallistujat tuntemaan enemmän itseluottamusta ja halukkuutta kommunikoida toisten kanssa, samalla vähentäen virheiden tekemiseen liittyvää jännittyneisyyttä. MMORPG:t ovat jälleen tämänkin kielenoppimisalan silmissä hyvä tapa parantaa ja oppia sitä ala-aluetta.

Muita tyyllilajeja, saatikka FPS pelejä, ei ole tutkittu paljoa WTC:n näkökulmasta. FPS peleistä on kuitenkin tutkittu sitä, miten pelaajat kommunikoivat niissä ja miten tämän genren pelien sosiaaliset rakenteet muodostuvat. Thon (2006, 254) mainitsee, että pelaajien pelien kautta muodostuneet identiteetit eivät joissain tapauksissa ole anonyymejä vaan usein hyvinkin tunnettuja. Tämä anonymiteetin maskin menettäminen voi vaikuttaa negatiivisesti pelaajan WTC:hen. Morris (2003, ei sivunumeroa) kertoo pelaajien itsensä kehittämistä hyvinkin monimutkaisista etiketeistä ja säännöistä, joka vaikuttavat pelien pelaamiseen ja sosiaaliseen kanssakäymiseen.

Aineisto

Tutkimuksen aineistona käytettiin Webropol nettisivun avulla luotua anonyymiä kyselyä, jonka jako aloitettiin helmikuussa 2022 ja päättyi maaliskuussa 2022. Kysely jaettiin useille nettisivuille, sosiaaliseen mediaan ja linkkejä lähetettiin tutkijan tutuille ja heidän tutuilleen. Kaiken kaikkiaan kyselyyn vastasi 43 osallistujaa. Todellisuudessa kyselyyn osallistui 45 osallistujaa, mutta 2 osallistujaa olivat alaikäisiä ja täten eivät olleet eettisistä syistä käytettäviä tässä tutkimuksessa. Tämä oli riittävä määrä vastauksia validin tutkimuksen suorittamiseen ja statististen metodien applikaatioon.

Kaikki osallistujat olivat videopelien pelaajia, sillä sitä vaadittiin tutkimukseen osallistumiseen. Osallistujat valitsivat kyselyn alussa, ovatko he MMORPG-pelien pelaajia vai FPS-pelien pelaajia. Muita varsinaisia rajoitteita kyselyyn osallistumiseen ei ollut. MMORPG-osallistujia oli tutkimuksessa 22 ja FPS-osallistujia 21. Kyselyyn vastaajat olivat kotoisin useasta Euroopan maasta, esimerkiksi Saksasta, Alankomaista, Suomesta, Norjasta ja Espanjasta. Kysely oli jaettu kolmeen osioon: taustatieto osioon, WTC-osioon ja sanastonoppimiskäsitys osuuteen. Taustatieto osiossa kysyttiin osallistujien ikää, sukupuolta, äidinkieltä, heidän suosimaa videopelityylilajia, koulutustasoa, heidän suosimaansa pelialustaa, kuinka kauan he olivat pelanneet valitsemaansa tyyllilajia sekä valitun tyyllilajin pelatuinta peliä. Alaikäiset pysyivät osallistumaan tutkimukseen, mutta heidän tuloksiaan ei sisällytetty tutkimukseen eettisistä syistä. Kaksi osallistujaa jouduttiin karsimaan tästä syystä alkuperäisestä 45 vastaajasta. Hypoteesina oli, että MMORPG-pelaajat suoriutuisivat paremmin sanasto-osuudesta, kun taas FPS-pelaajat suoriutuisivat paremmin WTC-osuudesta.

Taustatieto osuuden jälkeen osallistujat vastasivat WTC-osioon. Tämä osio koostui 23 kysymyksestä ja perustui kahteen aikaisempaan tutkimukseen (Mystkowska-Wiertelak & Pawlak 2017 ja MacIntyre et al. 2001). Tässä osuudessa oli 22 monivalintakysymystä ja yksi avoin kysymys, johon osallistujan piti vasta itse sanoin tai lausein. Sanasto-osuus oli kyselyn kolmas ja viimeinen osio, joka koostui 18 kysymyksestä ja perustui myös kahteen aikaisempaan tutkimukseen (Rasti ja Vahdat 2013 ja Hussein 2019). Tässäkin osiossa oli useita monivalintakysymystä (17) ja yksi avoin kysymys. WTC- ja sanasto-osuuksissa käytettiin kuuden pisteen skaalaa monivalintakysymyksiin. Kuuden pisteen skaala oli: ei pidä ollenkaan paikkaansa, pitää hyvin vähän paikkaansa, pitää vähän paikkaansa, vähän totta, totta ja erittäin totta (oma käännös). Kyselystä saatu data jaettiin Microsoft Exceliin ja taulukoitiin käyttäen tätä ohjelmaa. Jokaiselle vastausvaihtoehdolle asetettiin numeerinen arvo ja osallistujien vastauksista laskettiin pisteet Excelissä. Excel dataa analysoitiin IBM SPSS-statistiikkaohjelmalla käyttäen Independent Samples T-testiä ja Shapiro Wilkin normaalijakauman testiä.

Tulokset

Suurin osa vastaajista oli 26–30-vuotiaita (60.5 %) ja puhuivat äidinkielenään Suomea (72.09 %). Suurin osa osallistujista valitsi tietokoneen (93.0 % eli 40 vastaajaa 43:sta) suosimukseen

pelialustaksi. Nämä aspektit olivat relevanteimmat asiat raportoida tässä Suomenkielisessä tiivistelmässä.

WTC-osuudessa maksimi pistemäärä oli 132 pistettä. Keskimäärin osallistuja sai 110 pistettä tästä osiosta. Osallistujaryhmissä oli tässä eroja: MMORPG-ryhmän osallistuja sai keskimäärin 9 pistettä enemmän (114 pistettä) kuin FPS-ryhmän osallistuja (105 pistettä). FPS-ryhmässä on huomattavasti enemmän hajontaa kuin MMORPG-ryhmässä. Sekä korkeimmat että matalimmat pisteet saaneet osallistujat olivat molemmat FPS-ryhmästä. Tämän osuuden avoin kysymys kysyi osallistujilta, kokevatko he helpommaksi kommunikoida pelissä vai oikeassa elämässä toisen ihmisen kanssa. Lisäksi osallistujien täytyi perustella vastauksensa. Yli puolet (28) vastaajista sanoivat, että heidän oli helpompi kommunikoida videopeleissä, kuin ”livenä” toisen henkilön kanssa. Yhdentoista osallistujan mielestä kommunikaatiotavoilla ei juurikaan ollut eroja. Vain neljä osallistujaa vastasi, että heidän mielestään oikeassa elämässä kommunikointi oli helpompaa.

Sanasto-osuudessa oli vähemmän kysymyksiä kuin WTC-osuudessa. Tässä osuudessa oli 17 monivalintakysymystä ja yksi avoin kysymys. Kyselyn luonnin aikana tutkija ei virheellisesti merkannut tämän osion avointa kysymystä pakolliseksi. Tämän virheen takia 6 osallistujaa ei vastannut tämän osion avoimeen kysymykseen. Näistä vastaamatta jättäneistä kolme oli MMORPG-ryhmästä ja kolme FPS-ryhmästä. Tämä virhe kuitenkin huomattiin ja korjattiin johtaen siihen, että vastauksia saatiin yhteensä 37. Kyselyn anonyymiyden takia vastaamatta jättäneitä osallistujia ei voitu pyytää erikseen vastaamaan kysymyksiin. Keskiverto-osallistuja sai tästä osuudesta pisteiksi 87 pistettä mahdollisesta 102:sta. Samoin kuin WTC-osuudessa, keskiverto MMORPG-osallistuja sai enemmän pisteitä kuin FPS-ryhmän osallistuja. MMORPG-ryhmän keskiarvo oli 89 pistettä, kun taas FPS-ryhmän keskiarvo oli 85 pistettä. Sanasto-osuuden avoin kysymys pyysi osallistujia kuvaamaan, miten videopelien pelaaminen on vaikuttanut heidän sanastonsa oppimiseen. Lähestulkoon kaikki tämän kysymyksen vastaukset antoivat erittäin positiivisen vastauksen (34 vastaajaa). Kolme vastaajaa listasi videopelit hyödylliseksi, mutta huomattavasti vähemmän hyödyllisiksi kuin 34 muuta vastaajaa.

Pohdintaa ja yhteenveto

Tuloksien antama data analysoitiin IBM SPSS-statistiikkaohjelman avulla. Ensin datasta piti selvittää, oliko se normaalisti jakautunut eli siis normaalijakaumassa. Tämän asian selvittämiseen sopivaksi testiksi valittiin Shapiro-Wilk normaalijakaumatesti. Ricci (2005) toteaa, että tämä kyseinen testi on paras testi pienen otoskoon datalle (alle 50). P -arvo on statistisille testeille oleellinen arvo, joka kertoo merkitseviä asioita riippuen siitä, millainen testi on tehty. Shapiro-Wilk testissä p -arvo määrittää, onko data normaalisti jakautunut (normaalijakaumassa) vai ei. Jos data on normaalijakaumassa, p -arvo on yli .05 (Larson-Hall 2010, 84). Tätä testiä käytettiin molempien kohderyhmien dataan. Testi paljasti, että molemmissa otoksissa ja kohderyhmissä data oli normaalisti jakautunut. WTC-osiossa FPS-kohderyhmän p -arvo oli .296, kun taas MMORPG-ryhmän p -arvo oli .149. Sanasto-osiossa MMORPG-ryhmän p -arvo oli .317 ja FPS-ryhmän p -arvo oli .07.

Tämän jälkeen suoritettiin Riippumattomien Muuttujien T-testi (Independent Samples T-test). Tätä testiä käytetään kahden otoksen vertaamiseen, kun niillä ei ole yhteisiä muuttujia (niin kuin tässä tutkielmassa). Testi löysi tilastollisesti merkitseviä eroja WTC-osiossa ($p=0.027$), mutta sanasto-osuudessa ei löytynyt tilastollisesti merkitseviä eroja ($p=.245$). Testin tulokset ja analyysi näyttivät, että MMORPG-pelaajat saavat omasta mielestään enemmän hyötyä omasta peligenrestään, kuin FPS-pelaajat, kun tutkitaan sanastonoppimiskäsityksiä ja halukkuutta kommunikoida. Rajoituksia testillä oli pieni otanta ja siitä mahdollisesti johtuva vähäinen statistinen merkittävyys, pieni aihealue ja kyselyn epäluotettavuus datankeräys-menetelmänä. Kuitenkin on mahdollista, että tästä tutkimuksesta voisi saada hyötyä esimerkiksi parempien hyötypelien kehittämiseen tai tulevaisuuden tutkimuksiin, vaikka muita genrejä vertailemalla.