

Female players' perceptions of playing video games and their effect on language learning

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Tiivistelmä – Abstract <p>Videopelien saatavuus ja pelaaminen on lisääntynyt räjähdysmäisesti, peleihin ja pelialaan panostetaan enemmän ja alalle voi kouluttautua jo useammassa oppilaitoksessa Suomessa. Myös pelaamisen tutkimus on lisääntynyt ja videopeleillä on havaittu olevan paljon erilaisia positiivisia vaikutuksia. Etenkin kielenoppimista on tutkittu paljon ja videopelien on todettu olevan hyödyllisiä kielenoppimisen kannalta (esimerkiksi Reinhardt, 2019; Sundqvist & Sylvén 2012; Uuskoski, 2011). Usein tyttöjen osuus näissä tutkimuksissa on kuitenkin ollut melko vähäistä. Syyksi tähän on arveltu, että tytöt eivät pelaa, he eivät pelaa yhtä paljon kuin pojat tai he pelaavat erilaisia pelejä (esimerkiksi Saarela, 2010; Uuskoski, 2011; Phan, Jardina and Hoyle, 2012). Perinteisesti tyttöjä ei ole myöskään välttämättä hyväksytty osaksi videopelien maailmaa, esimerkkinä tästä ongelmallinen Gamergate -ilmiö. Tämän tutkimuksen tarkoitus oli selvittää, kokevatko tytöt oppivansa kieliä videopelejä pelaamalla, tutkia heidän pelikäyttäytymistään ja -mieltymyksiään sekä kokemuksiaan niin videopelien pelaamisesta kuin kielenoppimisesta.</p> <p>Aineisto kerättiin kyselylomakkeella, jossa oli sekä suljettuja että avoimia kysymyksiä, ja siihen vastasi yhteensä 84 naista. Osallistujien vähäisyyden takia ja siksi, että heistä suurin osa oli suomalaisia, tuloksia voidaan pitää enintään suuntaa antavina ja ne tulee ymmärtää Suomen kontekstissa. Tuloksista kävi ilmi, että vaikka suurin osa vastaajista koki oppineensa kieltä videopelejä pelaamalla, moni koki myös, että tämä ei näkynyt heidän arvosanoissaan. Etenkin sanaston ja luetun- ja kuullun ymmärryksen koettiin parantuneen. Osallistajat kokivat, että yhtenä isoimpana syynä tällaiseen kielenkehitykseen on se, että pelit ovat pääosin englanninkielisiä, jolloin tarinan ja pelissä etenemisen kannalta pelaajan on pakko oppia ymmärtämään pelin kieltä. Toisin sanoen tytöt motivoituivat oppimaan kieltä edetäkseen pelissä ja nauttiakseen siitä enemmän. Pelien suuren kirjon takia sopivan aineistoa löytäminen eri asioista kiinnostuneille, eri tasoisilla ja erityyppisille oppijoille on helppoa, minkä takia pelejä voitaisiin käyttää edistämään kielenoppimista kouluissa.</p>	
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1 INTRODUCTION

Video games have become a popular pastime activity for numerous people. According to *Pelaajabarometri*, a study which investigates the gaming habits of Finns, out of roughly 100 people aged 10-19, over half play digital games daily and 75% play them weekly (Mäyrä, Karvinen and Ermi, 2016: 20). It should, however, be noted that mobile games are included in the study as digital games. Mobile games typically differ from traditional games, yet they form a fast-growing category of video games with a 12.2% increase in players in the past four years (Mäyrä et al., 2016: 63), which proves that there is an interest in video games. Finns are reported to play video games rather regularly even past their teens and the activity seems to retain its popularity amongst the population until around 50 years of age where there is a visible dip (Mäyrä et al., 2016: 63). Moreover, even in comparison to the newest *Pelaajabarometri*, the number of players has only continued to increase (Kinnunen, Tuomela and Mäyrä, 2022: 89-91).

Traditionally the discussion regarding video games has seemingly focused on the perceived negative effects such as violence, however, in the past some years, the focus has been shifting towards the positive effects. For example, video games have largely been found to support learning. For example: Reinhardt (2019) finds games to be motivating and ideal for language learning, Sundqvist & Sylven (2012) speak of the positive effects of video games on acquiring vocabulary specifically, and Gee (2013) compares the principles of good learning to principles of good games, stating they are much the same. However, much of the research on games focuses largely on men. Although it is hard to say what the exact reason for this is, it has been suggested by some that playing video games is a hobby almost exclusive to boys (Uuskoski, 2011: 47) or that it seems to be more popular amongst them (Piirainen-Marsh & Tainio, 2009) and others state that women play different types of games (Phan et al., 2012). Typically, the case is not that women would have been excluded, it seems that more commonly, there simply have not been many female players. However, according to *Pelaajabarometri* (Mäyrä et al., 2016: 20) 72% women (N =507) play video games at least occasionally and roughly half of them play actively. Clearly there are women who play video games, yet if the number of women in video game studies is low, it may be that women do not speak openly about their video game habits. Moreover, since it has been suggested by several studies (see for instance Mäyrä et al., 2016;

Uuskoski, 2011; Phan et al., 2012) that women have different genre preferences to men, it may be possible that this has led to a lower number of female participants in video game studies overall. In his thesis Uuskoski (2011: 47), where the English grades of 495 students were investigated, found that the students who played video games had higher grades than those who did not. It was further noted that this was especially true for active gamers, most of whom were boys. Sundqvist & Sylvén (2012) similarly found that boys that played games tended to do better at vocabulary specifically. Considering the benefits video games have on learning and how prominent they have become in the daily lives of many people; I feel that it is important to examine women's perspective on the matter more. Moreover, I feel it needs to be said that I have a personal background in growing up with video games and have male and female friends with a similar background, so the topic is near and dear to me personally.

The aim of this study was to investigate women's views on video games as consumers of games, as well as to get a view of women's self-assessed language learning that took place through video games. To find out about their views and how they rated their language learning, I created a questionnaire that consisted of a mix of close-ended and open-ended questions, and distributed it over the University of Jyväskylä's networks and amongst female gamers. The questionnaire was available in English and in Finnish. In analysing the data, I employed both quantitative and qualitative methods: close-ended questions were analysed using descriptive statistics wherein frequencies were counted and the open-ended questions were analysed by using content-driven thematic analysis, focusing on keywords and forming larger themed categories.

In chapter 2, I first introduce the definition of a video game and then go onto discussing the learning affordances offered by video games, drawing focus specifically on language learning, finally, I discuss women in the world of video games. This concludes the literature review. In chapter 3, I go over the research questions, my data collection and the questionnaire I used to collect my data, and my analysis methods. In chapter 4, I present and discuss my results as well as the limitations of the current study. Finally, I end this study on a positive note by making some recommendations on future research.

2 VIDEO GAMES

2.1 What is a video game?

The definition of a video game can be considered to consist of several layers. First, the difference between playing and playing a game must be considered, although it should be noted that there may not be an obvious difference between the two in some languages, and second, the difference between a game and a video game. However, even defining a game is complicated; Salen & Zimmerman (2004: 83-92) list several possible definitions in their game design book and state that practically all of them have their shortcomings. For example, although one definition includes themes such as goal orientation, winning and following rules, it leaves out elements such as working together towards a common goal, decision making, and playing due to the activity being enjoyable. The popular video game *Minecraft*, an exploration and building game without concrete goals and certainly no real way of winning or losing, would, for example, not be considered a game by this definition. In light of these shortcomings, Salen & Zimmerman (2004: 93-94) offer their own definition, “A game is a system in which players engage in an artificial conflict, defined by rules, that results in a quantifiable outcome”, which is also fairly close to the definition used by Reinhardt (2019: 98-99) in that games are seen as a playful activity that is governed by rules. However, the definition offered by Salen & Zimmerman (2004: 93-94) is more specific; it encompasses not only that games have rules that limit what the players can and cannot do and that it is a playful activity, games also have conflict that provides the players with a problem to solve, players, who interact with and play the game, a quantifiable outcome that provides the players with a goal or an ending to work towards, a system that is the set of many parts that form the game, and, finally, that games are artificial; there is a line between them and real-life, in other words, games are make-believe. I have chosen to use the definition provided by Salen & Zimmerman (2004; 93-94) for the reason that it is more specific and, I believe, better portray the complexity of the games we have today.

Once the difficult task of defining a game has been completed, it is relatively easy to define a video game: they are games that are played electronically (Oxford Living Dictionaries, 2019; Merriam-Webster Dictionary, 2019). It should be noted that the platform the game is played on is inconsequential; all forms of video games are included. It is more important to consider the types of video games discussed, namely, whether the discussion focuses on commercial or educational games.

2.2 Learning through video games

The type of games my thesis focuses on is commercial games. In comparison to educational games, the design intent is different, which leads to different affordances. Generally speaking, commercial games are a source of informal learning in that learning takes place outside of formal environments and learning often happens without the knowledge of the player. This type of unnoticed or even accidental learning is generally referred to as incidental, implicit learning, and this type of learning is common in games, at least in terms of language learning. However, some learning may also be intentional and explicit, for example, *The Sims* is a series that requires the player to choose actions for their characters to take based on words alone, which is then followed by the characters performing the described actions. This is a fairly explicit way of learning new vocabulary. As suggested by Reinhardt (2019: 31), the player's disposition is important, in other words, whether the player approaches the task with intention or desire to learn or not. If the game is approached with an open attitude to learn language, the player is probably more likely to do so than if they were not, just as if they are motivated to learn versus not motivated.

In his small study on message boards (Reinhardt, 2019: 35), the users described video games as motivating, entertaining, and immersive ways to learn language as using the language was an important part of playing the game. As already stated, motivation and the need to learn are both powerful drivers of learning or at least have the potential to be so depending on the intention of the learner (Reinhardt, 2019: 31), however, the activity being fun is also a big part of the equation as it means you are more likely to spend more time on those activities. The more time a learner spends on something, the more opportunities they have to learn and to retain the information, however, that repetition has to be meaningful. If we consider the popular vocabulary quizzes used

at Finnish schools whose aim is to teach new vocabulary by comparing the students' first language and second language knowledge, but which in practice leads to students memorising word lists, it is perhaps quite clear these types of activities do not tend to lead to long-term acquisition of new words. This conclusion is supported by Reinhardt (2019: 104-105) in that such approaches to learning, grammar-translation specifically, typically fail to help learners reach a high level of proficiency. Moreover, studies suggest that video games are especially useful for vocabulary learning (Sundqvist & Sylvén, 2012: 201).

Considering the various views of language learning, structural, behaviourist, psycho-cognitive, social-informed, and ecological, according to Reinhardt (2019: 104-114), video games have clear learning opportunities in each category: video games offer meaningful repetition with comprehensible context, reinforcement through rewards and penalties, and immediate and consistent feedback. There is also plenty of meaningful and comprehensive reception and production of language, immersion, not just in a language, but a new world and tasks inside that world. Lastly, Reinhardt (2019: 104-114) states that games offer social aspects of interacting both with in-game characters and possibly other players, and every game has its own unique set of affordances or opportunities for language learning. In other words, the usefulness of video games in language learning follows the second language research, which states that the most effective language learning happens when language is used in goal-oriented and meaningful way (Ellis 2003, as quoted by Reinhardt, 2019: 116). However, it should be kept in mind that different types of games have different types of affordances and learning outcomes. For example, Franceschini, Gori, Ruffino, Viola, Molteni and Facoetti (2013) found that action video games lead to higher reading proficiency in dyslexic children, Franciosi (2017, as quoted by Reinhardt, 2019: 117) found that games with survival situations were learnt more readily due to emotional response, and Uuskoski (2011) found that playing MMOs correlated with better grades in boys in high school, and so on.

2.2.1 Genres

As referenced in the previous chapter, it is important to consider whether we are discussing commercial or educational games, and why. As it stands, such games have wildly different goals

and they are not evaluated the same way: one is meant to entertain and these games are rated on the overall enjoyability of the game, whereas the other is supposed to be a more fun way to learn, but these games are typically still rated on their overall learning effectiveness. It is, thus, perhaps a given that there is an obvious difference in popularity. For example, Mäyrä et al. (2016: 58; 25) found that 10.9% of their participants played educational games, but only 0.6% played them weekly and none daily. In comparison, 9,8% of all participants played games belonging to the most popular category daily (Mäyrä et al., 2016: 26). In my current study, we focus on commercial games primarily due to them being more popular, thus, we are focused on the learning in the wild aspect, which refers to informal learning taking place in digital spaces without formal instructional contexts (Thorne 2010, as quoted by Reinhardt, 2019: 30-31). Moreover, although the learning potential of educational games is typically tested prior to release and their learning affordances are planned, commercial games are different. Due to the large number of different genres and playstyles, the affordances available in commercial games vary. For example, Franceschini et al (2013) found that action games helped improve reading skills in dyslexic children. It should be noted that especially games belonging to the RPG and MMORPG genre have been best researched and have been found to support language learning in various ways (Reinhardt, 2019: 91-93).

Today's games tend to be hybrids in terms of genres: they can easily fit into more than one or two categories. This may be true to an extent for older games as well, but they were typically much more limited in their content due to the limitations of data storage. For example, the timeless classic, *Super Mario*, was published on a cartridge that could hold up to 32 kilobytes of data, whereas a more recent online game, *Black Desert Online*, comprised roughly 50,000,000 kilobytes of data in 2017. With such a significant difference in capacity alone, much less the other relevant technological advancements, it is possible to produce much more complex games that do not have to adhere to a single genre. This creates for more learning potential in commercial games as well.

As Gee (2013: 21) points out, video games are complex and difficult, they are hard to learn, yet players not only choose to undertake this daunting task, they even pay to do so. Gee (2013: 21) theorises that so-called *good games* have been expertly designed to be a fun and motivating way to learn where the player is typically not even aware that they are learning. Moreover, Gee (2013:

3) suggests that the principles of so-called good games and principles of so-called good learning are essentially the same, e.g., games have clear goals that are difficult but reachable, there are both short term and long-term goals that allow for experiencing success early on in the game as well as later on, there are different levels of difficulty, there are clear reasons for doing activities and the relationship between activities and goals is clear, feedback is available readily, and so on.

2.2.2 Interaction

As Gee (2013: 23) states, video games are interactive by nature and every game has some level of interaction to it. However, the role of language varies drastically and, therefore, so do the language learning affordances offered by a game. Typically, a game's genre can be a helpful indicator of what to expect, for example, RPG games are likely to have a rich source of spoken and written language available that allow, and often require, the player to interact with the game world and its characters. In comparison, a racing game will likely mostly involve language required to operate and, possibly, purchase or upgrade vehicles, as well as to partake in competitions, and so on. As a result, the language gains a player can make by playing solo video games alone depends largely on the game itself, however, that only covers interaction with games (Sykes, 2019: 138). According to Sykes (2019: 138-140), other video game interactions include interactions through the game, around the game, and about the game.

To that end, the next important interaction in games that needs to be considered is playing games together, online or otherwise. As seen in Piirainen-Marsh's & Tainio's (2009) study wherein participants partook in meaningful repetition by imitating game characters as they played a solo video game together, thus not only picking up vocabulary, but also practising their pronunciation, internalising the learnt language better, and partaking in a social activity and conversation. To my understanding, this type of interaction would be placed in the around the game category, although this category also includes online forums and other discussions about games. Similarly, when playing online with others, players are able to interact with one another by writing or even by voice, enabling them to not only choose from available options, but to actively produce language on their own. This is what Sykes (2019: 139) refers to as interaction through the game and socialisation and communication with other players is typically critical in this category. Research

also suggests that some genres of online games, MMOs and MMORPGs specifically, have various language learning benefits (e.g., Reinhardt, 2019: 91-93; Sundqvist & Sylvén 2012; Uuskoski, 2011).

Finally, whether it is happening inside, during, or outside of video games, it is also a fact that video games are talked about and present in multiple media, both by players and non-players, which is the final category: interaction about the game (Sykes, 2019: 140). There are many platforms to do this on e.g., various online viewing channels, forums, real life situations, and so on, however, one shared feature when discussing video games in a country like Finland is that games are typically not translated into Finnish and as a result, video game vocabulary in the language is quite limited. As a result, to make up for the lack of vocabulary, players will typically resort to *codeswitching*, alternating between one or more languages within the same conversation or utterance, or borrowing words from one language into another. I recognise that matters related to codeswitching and borrowing are distinct and quite complex, however, because my study is focused on language learning specifically and not codeswitching, I will refer to both phenomenon as codeswitching from here on out. Moreover, because each platform for video game discussions and codeswitching are all topics that are certainly broad enough to constitute multiple theses on their own and because they are not central to my thesis, I will not discuss them further here.

2.2.3 Motivation and flow

Motivation, as a concept, is very broad and it means different things in different contexts. For example, in the context of language learning, motivation is often treated as the reason or drive for learning a language in the first place. However, in the context of learning languages through commercial video games, language is typically not a goal, rather, it tends to be the means to an end: many games are not available in Finnish and language is an important part of a lot of games. In this study, I use the multifaceted definition of motivation offered by Dörnyei & Ushioda (2011: 92-97), according to which, there are four different categories of motivation: interest, future self-guides, motivational task processing, and flow. The first category refers to the pleasantness of a task, the second category encompasses the feelings and thoughts of what one is or what they can become, the third is the process of working on a task, evaluating how well one

is performing and taking corrective actions where necessary, and finally, the fourth category, flow, is a state of concentrating and being involved in a task. Considering the categories listed above, it is easy to see why video games were found to be so appealing (Reinhardt, 2019: 34-35) as video games generally a) are a pleasant task overall, b) assign the player a new character or characters on a quest whose fate more or less lies in their hands, c) offer a long process of multiple, measurable, tasks, and where feedback is immediate, and d) allow one to focus for long periods of time without mental exhaustion and while enjoying the task.

Focusing more specifically on flow, which is a key to staying focused and enjoying a task long-term, according to Csikzentmihalyi (1990: 149), the enjoyment involved is heavily dependent on complexity. In other words, more complex tasks provide more enjoyment. However, Cowley, Charles, Black and Hickey (2008: 13) add that without a good balance of skills and challenge, there is no flow. Experiencing such challenges in real-life may be difficult, yet in video games, that is the standard as players generally have to choose the appropriate difficulty level for themselves and many games even allow it to be adjusted later on. Moreover, outside of the game's own settings, video games have what is referred to as the *lusory attitude* (Suits 1990, as quoted by Salen & Zimmerman, 2004: 109), which refers to the phenomenon wherein players willingly make a game harder or slower by following rules that make it so. In this sense, even if a game on its own is not challenging enough, it is possible and fairly easy for players to adjust the difficulty on their own, and although the flow state is not a requirement to learning, it certainly helps, and video games make attaining it easier (Charles, Black and Hickey, 2008: 13). Due to the wide variety of genres and types of games, it is also relatively easy to find games that appeal to different users.

2.3 Girls in video games

As explained by Reinhardt (2019: 21-22), there has been a stereotype of a gamer being a young, unsocial male. Similarly, there have been online memes or even so-called rules (rule 37: “there are no girls on the internet” (knowyourmemes, 2009)) about girls appearing online or in video games. However, women have certainly begun to take an interest in games, for example, Mäyrä et al. (2016: 15) noted that in 2016, middle-aged women form the largest group amongst players.

In their study (Mäyrä et al., 2016: 33; 20), women spent 3.5 hours on average playing games per week and 52% of the women in their study were active players. These numbers are somewhat lower than men's, although the most noticeable differences seem to be in the preferred genres (see for instance Mäyrä et al., 2016; Kinnunen et al., 2022; Phan et al., 2012). Although the stereotype of your average gamer is changing, the myth of women not existing online or in video games still seems somewhat prevalent and sexism is still much discussed. There may be many reasons for these beliefs, however, one definite issue is who video games are made by, and possibly in part, for.

It should be noted that some of these numbers I refer to in *Pelaajabarometri* (Mäyrä et al., 2016) have somewhat changed in comparison to the latest edition (Kinnunen et al., 2022: 89-95). For example, on the one hand, there are more people playing games overall and actively, but on the other hand, there are still notable differences in preferred genres. As the data for my study was collected in 2016, I will primarily focus on the 2016 edition of *Pelaajabarometri* as they are the most comparable.

2.3.1 The industry

In an Australian study (Australian Bureau of Statistics, 2017), it was found that out of 734 digital game developers, only 15% were women, even though 47% of video game players in Australia identify as female (Maggs, 2017). The US boasts similar numbers at 42% of video game players being women (Statista, 2018) and with 72% (N=507) of Finnish players being women (Mäyrä et al., 2016). Although the reasons why women seem to be less likely to go after jobs in the video game industry has not been studied extensively, if we consider other fields that are better studied, such as science, we may be able to gain some insights.

According to Maggs (2017), many scientific fields are male dominated, which may discourage women from seeking career in those fields in the first place. Moreover, in many of such fields, there may be more behaviour that could be viewed as sexual harassment and there may be some gender bias in recruitment (the Australian Human Rights Commission, 2013, as quoted by Maggs 2017). This view is bolstered by multiple women who have been involved in the video game industry, either as someone who creates content, studies or writes about it (see for instance

Hepler, 2016; Sarkeesian, 2013; Allaway, 2014), and it has been made evident by the Gamergate movement that was active in 2014 as well (more on Gamergate in the next chapter). Additionally, Ricchiuto (2018) draws attention to the fact that there are fewer female than male eSports players and that even highly ranking women earn significantly less than their male counterparts, with the pay gap between similarly skilled and experienced professional female and male players being as high as 718%. All of these issues, having more men in positions of power, men earning more, and women being more likely to face harassment, are issues related to what is considered basic equality, at least in countries such as Finland. Although much work has been done to increase equality and improve the conditions of women both in life and in workspaces, it would appear that there is still much work to be done in the field of video games.

2.3.2 Sexism in video games and why it matters

As mentioned by Reinhardt (2019: 21), sexism in video games has been written about in length, both in terms of video games themselves as well as the culture around it. However, as the media is still relatively new, few studies investigate how sexism in games affects the userbase.

However, such studies have been done in other media. For example, McCabe et al. (2011: 200) suggest that the representation of genders in children's books works together with children's existing schemas, affecting their gender identities as well as their beliefs regarding their genders. Moreover, the lack of representation of a group in media ultimately relays the message that that group is not important (McCabe et al., 2011: 200).

Unfortunately, a lack of representation in terms of the number of female characters overall and as central characters, as also seen in some other media outlets (McCabe et al., 2011: 200-218), has been found in video games as well: there seem to be fewer female characters and even fewer central female characters (Dietz 1998; Beasley and Collins Standley 2002; Scharrer 2004, as quoted by Miller & Summer, 2007). Moreover, it seems to be more common for a playable character to be male than female, and often their roles and appearances are very different. Men tend to be depicted as muscular and powerful, commonly play the role of the hero, and have a much wider array of abilities and weapons than women do, whereas women tend to be portrayed as sexy and attractive, wear revealing clothing and seldom play roles of power, commonly having

to be rescued by the hero (Miller & Summers, 2007). As McKinney (2013) noted, girls in books do not venture out to find themselves but husbands. Similarly, girls in video games do not venture out to save the world or someone; they seem to venture out or get kidnapped so they can be rescued later. Returning to McCabe et al.'s notion (2011: 200) that representation affects identity and beliefs of gender, this is alarming and certainly not a suitable direction for a country like Finland, where equality and equity are fundamental rights and a legal matter.

That being said, it may be worthwhile to discuss one well-respected, but much debated character: *Lara Croft* (in the *Tomb Raider* series), who is one of the seemingly rare female main characters. *Croft* is even more special in that she is a female character with an active role and who does not need to be rescued; she undertakes dangerous missions, saves the world, destroys villains, and always comes out on top. According to MacCallum-Stewart-Stewart (2014: 1), *Croft* is often treated as a unique character in gaming even though there have been other games with female main characters, which may be due to *Croft's* appearances that have been heavily criticised as being sexualised and pertaining to a predominantly male audience. It is typically the physique of *Croft* that researchers focus on. Bosler (2013, as quoted by MacCallum-Stewart-Stewart 2014: 3) adds that if one were to think of negative or objectifying portrayals of women, they would most likely think of *Croft* before anyone else. However, many of these researchers never played the games and although, on the one hand, video games share some similarities with other medias such as books and television, they are also very different in that the player becomes the character themselves. On the other hand, though, that also does not mean that a character's appearances cannot be critiqued, however, a fairer approach may be to play the game. For example, Kennedy (2002, as quoted by MacCallum-Stewart-Stewart 2014: 2-3), a researcher who played as *Croft*, describes her as too masculine and suggests that in order to interest women, developers would have to be encouraged to produce a wider variety of female characters that portray different levels and types of femininity.

Although the discussions and views of *Croft* have been mixed, it is clear that there are several main issues: first, there are too few female characters in major roles in video games, secondly, there seem to be even fewer female characters considered adequate, thirdly, female characters can easily become or be viewed as sexualised, and finally, the level of homogeneity displayed by video game characters overall seems to be high. Pratchett (2013, as quoted by MacCallum-

Stewart-Stewart 2014: 4) comments that although the need for more and better female main characters has been discussed, the discussion should focus more on the need for more diverse characters overall, with characters of different ages, sexual orientation and so on being considered sparse. Furthermore, Prattchet (2013, as quoted by MacCallum-Stewart-Stewart 2014: 4) points out that even though there are also sexualised or poorly represented male characters, they are seldom the focus of critique, which suggests that either there are more, or more vocal, people who disagree with the representation of female characters than male characters. However, considering Kennedy's (2002, as quoted by MacCallum-Stewart-Stewart 2014: 2-3) experience, it is also possible that some of the people critiquing female characters have not actually played the game and may have different standards because of it. Even though we have research in other fields, it would be important to research and to create standards for research on equality in video games.

Unfortunately, beyond just lack of diversity in terms of characters, the field of video games itself, whether it is research, the industry, or even simply playing games, has been somewhat treated as men's domain with women facing backlash for participating in it. One example of such backlash is the Gamergate movement that openly attacked women working in or doing research on the video game industry while claiming to strive for ethical practise in video game journalism. Allaway (2014) is one of the victims of the movement; she faced serious issues and threats after the Gamergate community discovered her study on video games. Her online questionnaire was bombarded with hundreds of trash entries, with the intention of inconveniencing and invalidating her data. However, whereas Allaway's incident is terrible, it is less severe in comparison to cases where women received death and rape threats, and some of whose home addresses were distributed online, forcing them to live in fear (Sarkeesian & Wu in Edwards, 2017). Moreover, in his article, Edwards (2017) introduces two women terrorised by members of the Gamergate community and reveals that the police involved in the case were unwilling to prosecute these members despite having recorded confessions. Although this movement has since ceased to exist or at least it is no longer popular, it is important to note that it is still a recent event at the time of writing and it may still relate to the experiences of women interested in video games, both for entertainment and for work.

Considering the reception of women in video games and the industry, the lack of diversity and perhaps appreciation, and the seemingly lower participation rates in video game related studies, I feel that it is important to investigate the causes. Playing video games is beneficial to learning in multiple ways, they afford versatile learning environments and there is potential in using them as educational tools. However, in order to be successful, we need to know much more about female players, their experiences, and how they really feel about video games. For example, online games are not particularly popular amongst Finnish girls with less than 10% playing online RPGs and less than 13% playing online games with other people, even though the same numbers for men were 16% and 22% respectively (Mäyrä et al., 2016: 55-58).

3 METHODS

The aim of this study is to investigate women's self-assessed language learning that took place through video games as well as to learn about their views as consumers of games. In my attempt to achieve this aim, I employed three primary research questions.

3.1 Research questions

1. How do the girls play: what games do they prefer and what are their gaming habits?
2. What are the perceived language gains made by girls through playing video games, if there are any?
 - a. Have these gains affected grades positively?
 - b. How do such gains compare with girls' gaming habits?
3. Do girls think there are differences between male and female players?
 - a. If so, how have the differences affected their gaming habits?
 - b. If so, is there a relationship between such differences and gaming habits and perceived language gains?

3.2 Data collection

The data for the present study was collected through a questionnaire created on *Webropol surveys* with the goal of reaching as many participants as possible. However, due to the topic of the questionnaire and the backlash some women have faced in the video game industry that (see chapter [4.4.2](#)), the distribution of the questionnaire was restricted to the mailing lists of different subjects of the University of Jyväskylä, a *Discord* (a voice chat program) channel consisting mostly of female gamers, and directly from one female gamer to another. Although the Gamergate community does not seem to be currently active, I did not wish to take risk of the questionnaire being flooded with troll answers by posting it on game forums even though the option was considered. As a result, the overall number of replies may have been lower. However, there were also no recognisable false positives, which resulted in high usability rate of answers in nearly all questions. The number of participants that took the questionnaire was 84, although it should be noted that not every participant answered every single question. On the one hand, the questionnaire may have been too long for some, and on the other hand, some questions were left as optional since they may not have been relevant to everyone. For example, if a participant did not play with other people and did not talk to others about video games, codeswitching would likely not be relevant to them. As a result, the number of respondents varies for different questions and this has been marked down for each question.

Due to the multitude of sharing channels and the expected diversity in people's nationalities and linguistic backgrounds, the questionnaire was made available in Finnish and in English. Before distribution, the Finnish version was piloted on three participants and the English version was piloted on two. These pilots were divided into two separate occasions in order to improve the questionnaire between the pilots. Two of the participants of the first pilot were not overtly familiar with video games as they had only played a handful of games throughout their life, whereas the third participant was a veteran with years of experience in gaming. For the second pilot, one of the participants was somewhat familiar with video games and the other was a veteran with similar experience as the gamer in the first pilot. The questionnaire can be found in English in [Appendix A](#) and in Finnish in [Appendix B](#).

Considering the topic of the present study, a questionnaire or interviews were deemed as the only viable options for data collection. In retrospect, other methods, such as visual storytelling, might have yielded equally good or even better results. On the one hand, interviews are very useful in studying not only the phenomenon, in this case the language learning of women through playing video games, but also in gaining a more detailed view at the participants opinions and views (Dufva, 2011: 133-134), which I was very interested in. However, on the other hand, I considered the low number of female participants in video game studies, the negative experiences and harassment of women involved in video games and felt that using a more anonymous method would be valuable. Moreover, I believed that reaching a higher number of participants would be beneficial, in part due to wishing to fill the gap of low female participation in some previous studies, as well as the preconceived notion that questionnaires are more objective data collection tool. However, according to Alanen (2011: 146), questionnaires can also be used to collect qualitative data. Guest, MacQueen and Namey (2012: 3) agree with this notion, adding that that they are an effective tool for certain types of research, even if their use in qualitative research is not common. Based on this information, I concluded that what I could achieve with interviews, I could also achieve with a questionnaire, if I included some open-ended questions.

3.2.1 Questionnaire

3.2.1 Closed questions

In part one of the questionnaire, the participants were asked to give their background information (age, first language, which languages they prefer to play in). This information was collected to gain some insight into the group of participants and in order to compare with the results of relevant questions (e.g. languages played in versus perceived language learning).

In part two, the participants were asked to rate how important or necessary language is in the games they play. This question was rated in nine different categories (Moving between areas/maps, Playing the character, Following the story, Learning about the game, Communication (Written and Spoken separately), User interface, Enjoyment of the game) on Likert's scale ranging from 1 to 7, where 1 meant not at all, 6 very much, and 7 not applicable. This question

was included because due to the number of different types of games, the language potential of games may vary; some may have almost no language at all whereas others may be very rich in language. Clearly, the language content available plays a big part in the language learning potential of a game. Because the amount of language is fairly easy to rate, I decided it would be more reasonable to ask the participants themselves to rate their games rather than for me to collect a list and rate them myself.

In part three, participants were requested to rate their language behaviour more closely: do the participants change the language they use, e.g., based on the people they play with, and do they borrow terms from other languages or do they resort to codeswitching? This question was included in anticipation of there being some changes, even if simply due to the fact that video games are generally not available in Finnish. Although my study focuses on language learning specifically and not codeswitching per se, I believe that because codeswitching is such a prevalent part of the Finnish video game language scene, it would have been a disservice to simply exclude. Finally, the participants were given the opportunity to add comments after these questions.

In part four, between asking the participants to list games they recently played and their favourite games, I chose to ask about the favourite games for several reasons. The most notable one was that people typically spend much more time on their favourite games. Based on the quick inquiry I did with female gamers I knew before finalising the questionnaire, games that were liked were played between 50-227 hours (averaging at 103 hours per game, 10 votes), whereas games that were considered favourites were played from 120-2500 hours (averaging at 663 hours per game, 15 votes). Considering the sheer difference in hours spent on the game, it stands to reason that the favourite games would have the most language learning potential. Thus, I focused on what I thought would give me the best picture of where perceived language gains may actually come from. More specifically, I primarily wanted to investigate the relationships between videogame genres and their language learning potential. For example, if the participants tended to play MMOs, would this translate to higher ratings in the communication categories of language learning.

In part five, the participants were quizzed on their gaming habits, e.g., how they preferred to play (online, offline, alone, with others), how much they play on a normal week, and how much they

spend on game related activities on a normal week. The goal here was to have more information on what kind of gaming habits yielded language learning results, if any. I also wanted to see if some of the language gains made could be attributed to game related activities rather than gaming, hence including the last question. The participants were given the opportunity to add details to the two last questions.

3.2.2 Open-ended questions

In part six, the participants were asked whether they believe they have learnt language through playing video games and if so, they were asked to provide a more detailed answer across five categories of language (Pronunciation, Listening, Vocabulary, Using the language, Reading) on a Likert's scale from 1 to 7. The participants were given the opportunity to include details on how and why they may have made language gains, and whether those gains had had a positive effect on their grades. These questions were essentially the core of the questionnaire. There is plenty of evidence of the positive effects of video games, however, there is not much data on such effects on women as women are typically deemed as not playing video games. As a result, I wanted to genuinely ask female gamers if they felt they had learnt language and what kind of language gains they believe they made, if any. I also decided to give the participants additional space to include their thoughts in more detail, if they so desired. I was also curious if any such gains had been visible in grades as there are some previous studies which had found a correlation between games played and good grades (Uuskoski, 2011).

In the last part, I asked the participants to rate their experiences as girls who play video games (are there differences between how male and female players are treated, what are such differences), and whether those experiences had affected their gaming or not. These were both open-ended questions to allow for the participants to describe their experiences freely. Based on previous research (Korhonen, 2014; Saarela, 2010) and more recent events (e.g., Gamergate), I expected some negative experiences to be present and I wondered whether those experiences had affected the gaming habits of women, e.g., if previous research suggests women do not tend to play video games, could that be due to negative experiences?

3.2.3 Favourite games genre categorisation

In order to study the relationship between genres and language gains made, I needed to know the preferred genres of the participants. However, due to the complexity of genre categorisation, the possible bias and inaccuracies or lack of consistency that may result from participants listing their favourite genres (Reinhardt, 2019: 90-91), I instead decided to ask them what their favourite games were.

The categorisation was not without its issues. For example, on one platform, a game I knew to be a horror game, both due to the visuals as well as the game's homepage stating as much, was marked as a point&click game based on the game mechanics, completely omitting the fact that it was, in fact, a horror game. Moreover, in 2014, when comparing the genre listings of *GameStop* with games' own websites, I found that the genre listing seldom matched the developers' categorisation (Korhonen, 2014).

The categorisation of games into genres was primarily done through *Steam* (a game platform owned by *Valve*), *GameStop*'s website, *PlayStation store*, *Google play store*, *Microsoft Store*, and *Nintendo*'s online store. More precisely, every game was first searched on *Steam* store, if it could not be found there, then *GameStop* would be used, and if it still could not be found, then whatever website was relevant to the game in question was searched (*PlayStation* games on *PlayStation store*, and so on). Moreover, if the game was not available in any of the aforementioned stores, the game's own website was used and if one did not exist or the genre was not listed, two veritable industry sources were used instead. For example, *League of Legends* genre was not listed on the official website, however, with the game being a popular title in the e-sports, the game appeared in several articles. Old games such as *Mario Super Bros*, released in 1985, were further checked on websites specialising in retro games. *Steam* was chosen as it is arguably the biggest gaming platform available at 125 million users and *GameStop* was chosen both due to the fact that it has games for many different platforms (e.g., PC and consoles) and because at the time of categorisation, it was one of the best known, international game stores (they have since closed their doors in Europe).

During the categorisation, a list of genres was formed and every time a game was listed under one of those genres, that genre was given a point to. If the game was listed under a genre that was

not on the list, a new genre was added, and a point was given to it. Due to the limitations of *Steam* in terms of its genres, many games were searched both on *Steam* and on another relevant platform. For example, *Amnesia*, a popular and well-known horror game, cannot be listed as such on *Steam* due to the horror genre not existing on the platform. Because of this issue, the game was searched on the *PlayStation* store as well. Genres listed under both websites were given a point to. Furthermore, in terms of neatly arranging the all-time favourite games into genres, I chose to group up series. For example, if a participant listed *Final Fantasy X* as their favourite game, then the game was placed under the *Final Fantasy* category. This was done in order to simplify the listings as well as because sequels tend to be similar in terms of affordances; they almost always represent the same genre. However, if the game was deemed as being dissimilar to the series, for example *Crash Bash* (a party game) is wildly different from the *Crash Bandicoot* series (platformer, action), it was not put into the series' category. Moreover, games such as *Final Fantasy XIV* were not placed in their series' category either despite the genre and style itself being rather similar. This is because these games were typically MMOs, which meant that the language opportunities afforded by the environment were substantially different. Finally, there were occasions of participants naming two titles from the same series as their favourite. In these cases, the series received two points rather than one to more accurately display the importance of that specific series to a participant. Finally, the game's mode, whether the game was a single player, multiplayer or something else, was also listed. If the game had multiple modes available, every mode was listed and given a point to. Although modes themselves cannot be considered genres; they do affect the language opportunities of the game environment, which makes them worth considering, except for MMOs that are typically treated as a genre rather than a game mode.

3.3 Data analysis

The quantitative portion of my study focused primarily on the closed-ended questions of the questionnaire. I primarily employed the central tendency method used in descriptive statistics, which essentially measures what is typical by counting frequencies (Weisberg, 1992). The results were first imported from *Webropol*, then processed into an Excel sheet so that each question had

its own tab. For each applicable question, frequencies of answers were recorded (e.g., 20 yes, 50 no, 10 unknown). This data was further processed into percentages to better display distribution of data. After the math had been checked, a table or a figure was created with those numbers.

For my analysis of the qualitative data, I chose the exploratory approach, in other words, I first read the data over several times to form a general image of the themes, trends, and key words; my analysis was content-driven (Guest et al., 2012: 6). According to Guest et al., (2012: 9), thematic analysis is a method that allows for more interpretation of data, which I found necessary to use with my open-ended questions. Concretely, after reading the data several times, I went over the data again and began to underline my findings. First, I did this by underlining key words, and then forming themes out of said key words. Once I had done this, I wrote down the primary themes in excel and started counting frequencies, adding new categories and forming themes out of them if there were answers that did not fit into the existing themes. Overall, the process of forming themes and counting frequencies was fairly simple and straightforward, however, in some cases, the participants would contradict themselves. For example, if the participants were asked whether they thought there are differences between male and female players, they may have replied no, but when they wrote about the topic in more detail, they did attest to differences. In general, in such cases, I would create a new category and explain it in the results section so that there would be no confusion. As with my quantitative results, once I was happy with my math, tables, and figures, I would transport them into the Word file.

4 ANALYSIS&DISCUSSION

4.1 Player data

In this section, I will present the relevant information about the participants, such as their age,

language background and the amount of time they spend on playing video games or its related activities.¹

As can be seen below in Table 1, most of the participants are in their 20's (at least 80%) or early 30's. Considering that the largest channel of distribution was the university's mailing lists, this was to be expected. Moreover, many of the other channels also comprised university students or their typically similarly aged friends.

Table 1. The respondents' age.

Age	Frequency	Percentage
18-year-old or younger	1	1.19%
19-23-year-old	36	42.86%
24-28-year-old	32	38.09%
29-33-year-old	13	15.48%
34-39-year-old	2	2.38%
40-year-old or older	0	0%
Total	84	100%

In the second question, the participants were asked to name their first language, referring specifically to the language they are the most competent at. The participants could choose multiple options in order to cater to multilingual speakers, which explains why the overall numbers add up to more than 100%. In this case, two participants selected two languages, as indicated by a total of 82/84 in the bottom left side of Table 2. This was somewhat surprising considering the definition of multilingualism and the view of multilingualism being a spectrum (Saville-Troike, 2006: 8-10; Valdés, n.d.). In theory, this would have made it possible for people to consider themselves multilingual even if they did not have the same amount of competence across the different areas of language or even between different languages.

Table 2. A Table of the first language and the languages participants chose to play in.

¹ The questionnaire can be found in [Appendix A](#)

First language	Frequency	Percentage	Language played in	Frequency	Percentage
Finnish	72	87.8%	English	80	97.56%
English	3	3.66%	Finnish	40	48.78%
French	2	2.44%	German	7	8.54%
Swedish	2	1.22%	French	5	6.10%
German	1	1.22%	Swedish	4	4.88%
Russian	1	1.22%	Spanish	2	2.44%
Other	4	4.88%	Russian	2	2.44%
	1				
Hungarian	1				
Polish	1				
Greek	1				
Slovak					
			Other	9	10.98%
			Japanese	8	
			Slovak/Czech	1	
Total	82/84	102%	Total	82/149	182%

Similarly, in the third question, the participants were asked to name a language or multiple languages they play games in. Looking at the right side of the table, it was common for respondents to pick more than one language they chose to play in (82 participants, 149 choices in total). Unfortunately, the participants were not requested to specify whether they were referring to the game's own language selections or the language they chose to use while playing the game. However, some participants specified that they would choose a language for the game and then use a different language while playing the game, for example, players of online games stated they would play the game in its original language but talk about the game in a different language.

However, most of the respondents reported to playing games in English (roughly 98%) while the majority's first language (roughly 88%) was Finnish (Table 2). Regardless of the reason behind

the decision to have a game translated, even AAA video games (the games produced with the largest budgets) tend to only be translated into a small number of languages, most of which have many speakers and whose speakers are not necessarily renowned as adept foreign language users, but this trend certainly applies to a number of other types of games as well. For example, the popular Finnish video game *Trine*, at least at the time of writing, was subtitled and dubbed into five languages, none of which was Finnish.

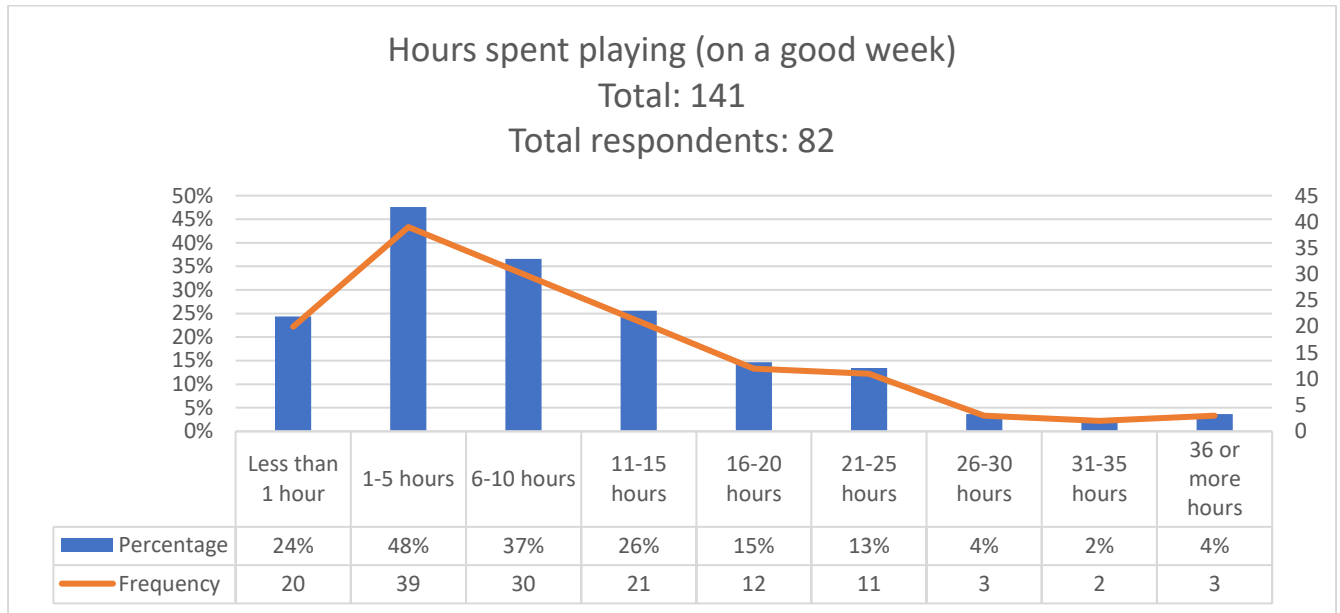


Figure 1. Hours spent playing video games (on a good week).

Figure 1 shows the playing habits of the participants, of whom roughly half (39/82) played 1-5 hours on a good week. However, the numbers are high up until 15 hours, with 30/82 opting out for 6-10 hours of game time on a good week, 21/82 for 11-15 hours, and 20/82 participants playing less than an hour per week. Moreover, 23 participants (12 for 16-20 hours and 11 for 21-25 hours, respectively) reported playing over 15 hours a week. Only 8/82 participants total reported to playing more than 25 hours a week. Seemingly, the amount of time spent on playing video games is quite high, which would certainly be enough time for the participants to improve or upkeep their language skills. However, 44/57 of participants who chose to further explain their choices noted that their gaming is cyclic or seasonal: “Minulla on ‘pelikausia’. Tarkoitan tällä sitä, että välillä pelaan paljonkin muutaman kuukauden ajan ja sitten en taas melkein yhtään.” (: I have ‘gaming seasons’. By this I mean that, at times, I might actually play quite a lot for a couple

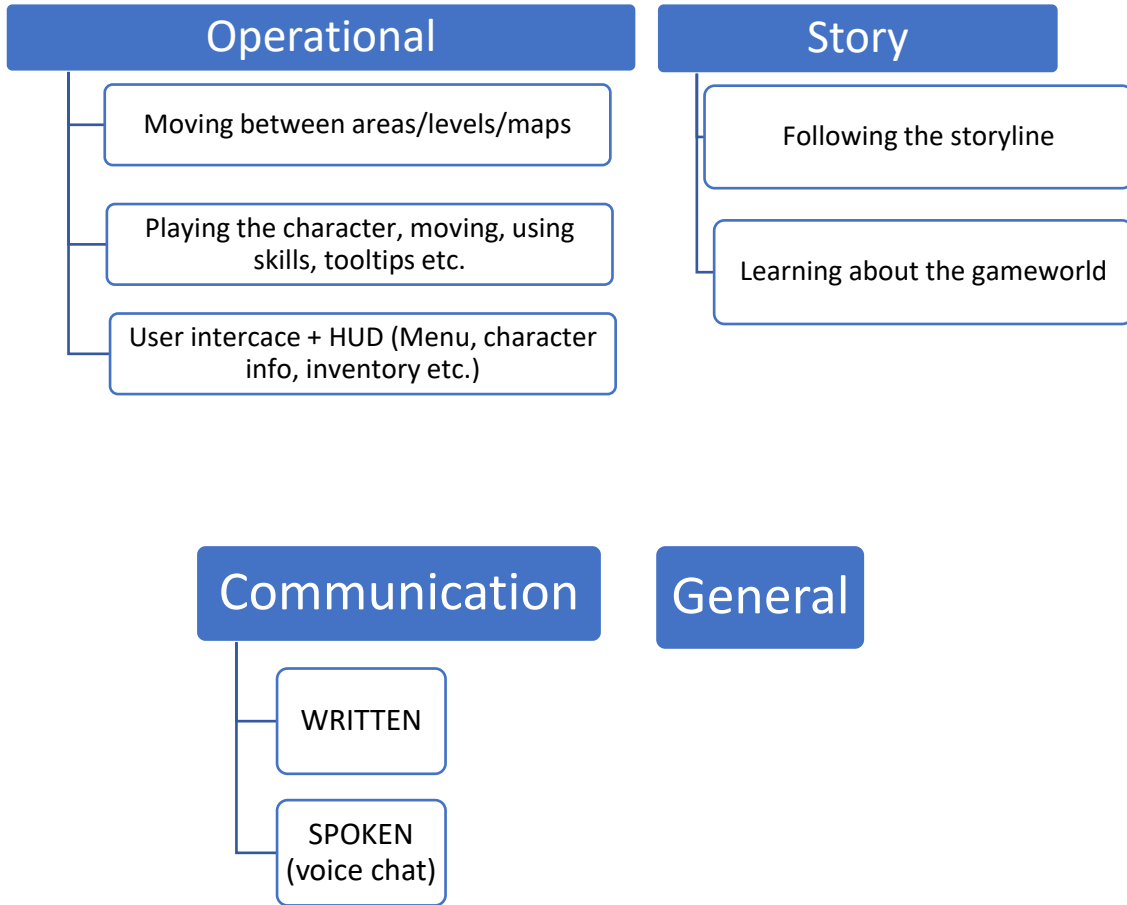
of months and then almost not at all.).

4.2 Importance or necessity of language in video games

Video games make varying levels of use of language, ranging from typically language heavy roleplaying games to more visual games, where the user clicks objects or creatures that appear on the screen with their mouse. Inevitably, if the game makes very little use of language, the language learning potential of that game is low. As a result, the participants were asked to rate the importance or necessity of language in the video games they like to play.

The participants were asked to give a rating on a Likert-scale 1 (not at all) to 7 (not applicable) in eight independent categories: 1. Moving between areas/levels/maps, 2. Playing the character, moving, using skills, tooltips etc., 3. Following the storyline, 4. Learning about the gameworld/lore, 5. Communicating with other players (WRITTEN), 6. Communicating with other players (SPOKEN; voice chat), 7. User interface + HUD (Menu, character info, inventory etc.), and 8. General enjoyment of the game. Due to some of the categories being closely related, as well as to simplify the figures presented later, these categories were further processed into just four, as seen in Graph 1: 1. Importance/necessity of language Operational, 2. Importance/necessity of language Story, 3. Importance/necessity of language Communication, and 4. Importance/necessity of language General enjoyment of the game.

Graph 1. The categories in which the importance or necessity of language were rated in.



Due to the nature of video games themselves, some having more language opportunities than others, it would stand to reason that there is some correlation between the possible perceived language gains and the types of games played. To account for this, the participants were requested to rate the importance or the necessity of language in different categories. The first category, operational, simply refers to the ability to play the game, in other words, whether the video game can be played without understanding language cues in the game.

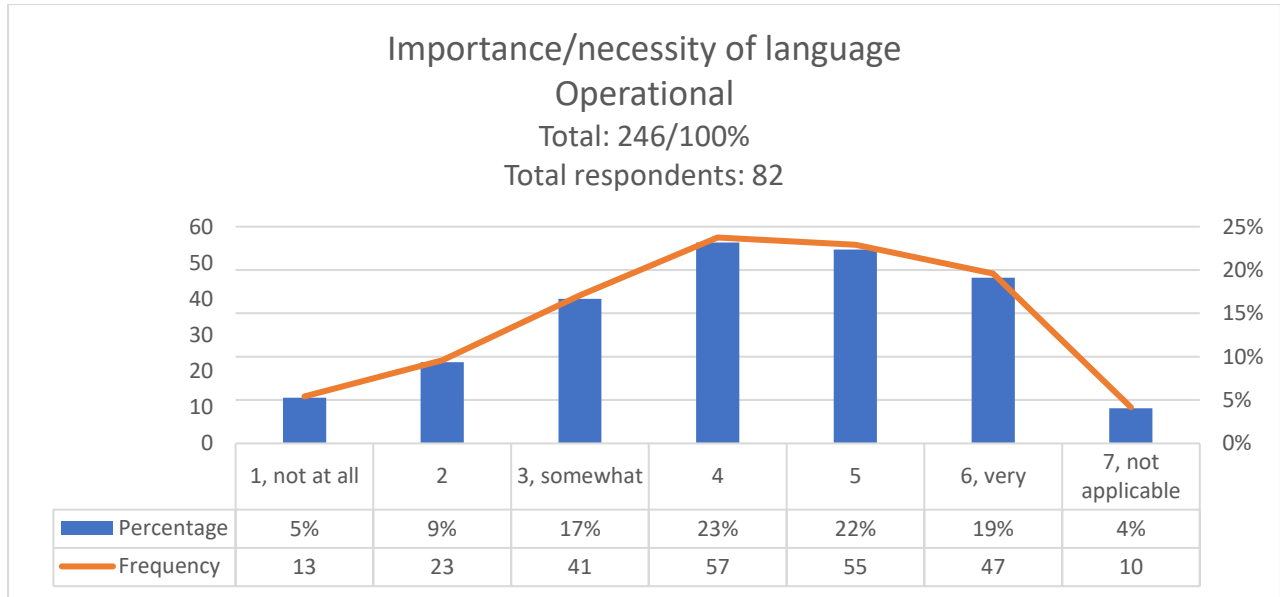


Figure 2. The importance or necessity of language, Operational category.

Considering that this category comprises the bare minimum knowledge required to operate the game, it was to be expected that the importance or necessity of language would be rated high, as can be seen in Figure 2. Out of 246 ratings, 81% fell within the spectrum of somewhat to very important, which strongly suggests that language is important in operating video games. Only 14% in total felt language was not important at all or that it was barely of any importance while 4% noted that language was not applicable to the games they play.

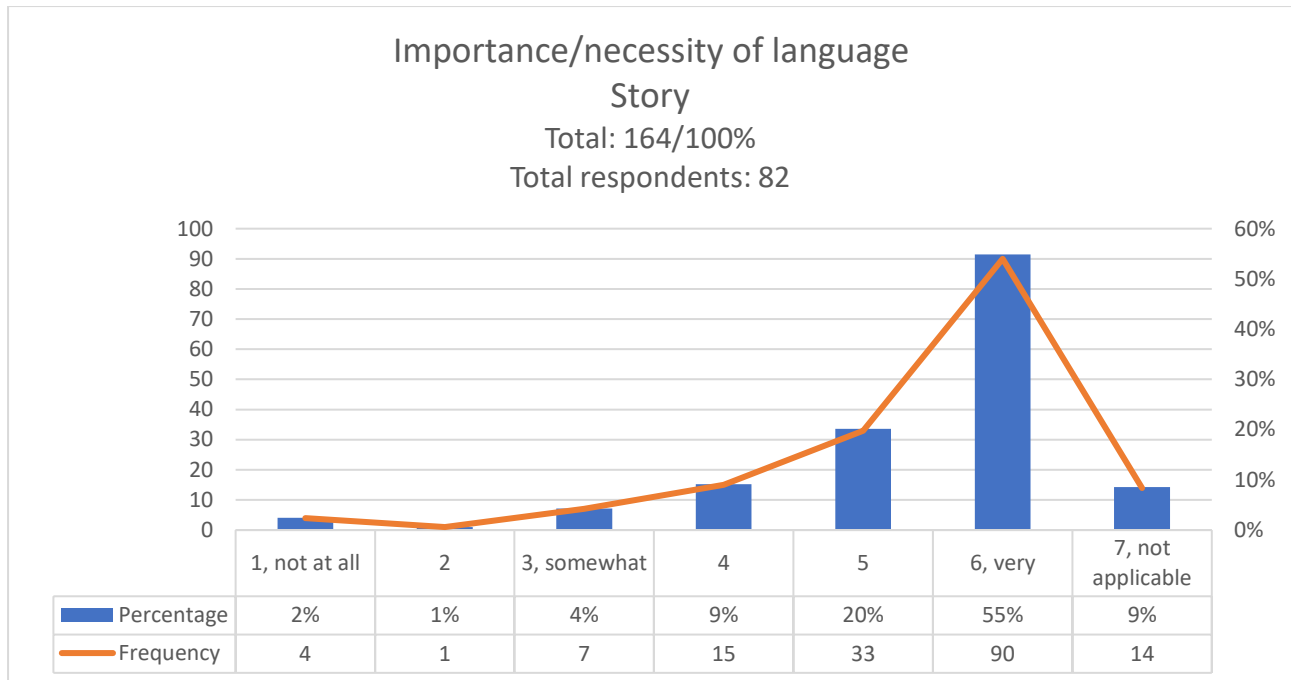


Figure 3. The importance or necessity of language, Story.

Over half of the participants (Figure 3) rated language as very important and as many as 84% rated the importance higher than the halfway mark (3, somewhat), thus, language was seen as an integral part of enjoying the story of a game. Only 3% rated the importance of language lower than somewhat important and only 9% rated storyline or learning about the gameworld/lore as not being applicable to the games they play. Understanding the story of the game requires one to understand the language. However, it should also be kept in mind that even if language does play an important role in this sense, it does not necessarily mean that the player will want to follow the story; it may be unimportant or irrelevant to them due to personal or reasons related to the game itself. At the same time, considering Mäyrä et al.'s (2016: 55-58) results which found that up to 45% (out of 507) women who play games tend to play genres that traditionally value story elements (roleplaying games 6.5%, adventure games 16.9%, and action games 21.6%), it was to be expected that language would be rated highly in this category. Although it should also be noted that story has an important role in many shooters and other genres as well as genre lines have somewhat blurred with many games belonging to more than a single genre nowadays.

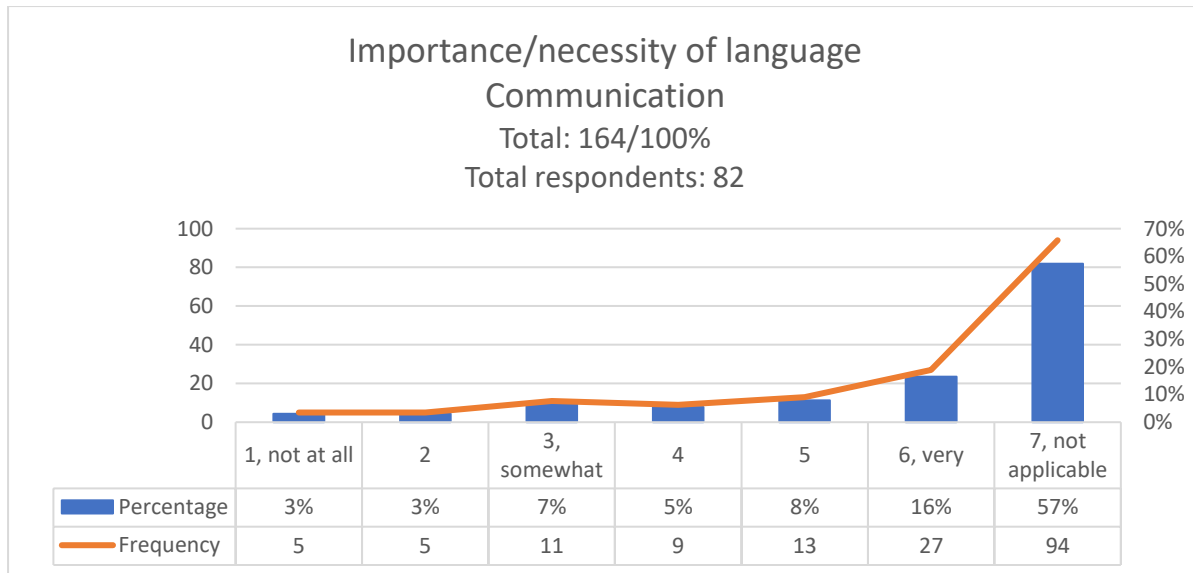


Figure 4. The importance or necessity of language, Communication

Considering that out of all the game titles put forward by the participants, only 12 were in the MMO category, and the fact that 72/82 participants preferred playing offline by themselves, it is not surprising that, as seen in Figure 4, many (57%) rated the importance or necessity of language as not applicable to them. This was true for both written and spoken communication, which could very well be explained by the popularity of playing offline and alone. However, 29% noted that it was more than somewhat important, with as many as 16% rating the importance at the highest level, six. This could mean that there were participants who play online games but did not rate them as their favourites or they play single player games that allow for what may be considered mimicking communication by giving players a limited amount of time to choose between dialogue options (e.g. *The Witcher 3*, *The Elder Scrolls*).

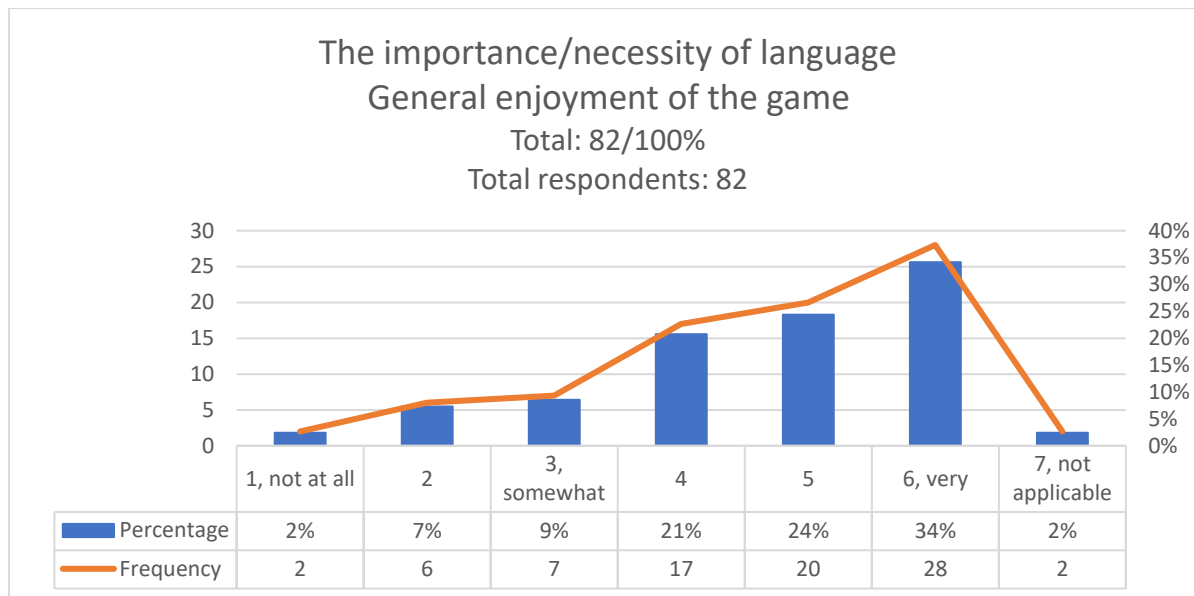


Figure 5. The importance or necessity of language, General enjoyment of the game

Looking back at Figure 3, where we can see language as being rated very important and necessary to understanding the story, and the hypothesis that the participants would rate language highly not only for the objective goal of understanding the story, but also enjoying it, the results in Figure 5 make sense. 34% out of 82 rated language as very important to enjoy a game and 79% rated language as more than somewhat important. It was only 2% that rated language as not being important and another 2% rating language as not being applicable to the enjoyment of their chosen games. Based on this data, it seems safe to state that the participants prefer to play games that focus on the story and that this is an integral part of the game for them to enjoy the experience.

4.3 Language choices in video games

From here on out, to examine language choices further, I employed a mix of open-ended questions alongside the more restrictive question types. This was done in order to allow the participants to share their experiences more freely. However, many of these questions were not compulsory. This can be seen in a varying number of answers per question. In the figures below,

I have stated the overall number of participants per question as well as the number of answers per question as these numbers are not always the same.

As discussed earlier, video games may or may not offer various language options, and it is more typical to see some languages over others, such as German over Finnish. Considering that the games themselves may be played in different languages and that video games may be played with speakers of different languages, the participants were asked to consider their language behaviour in games, essentially, whether they swap between different languages and if they do, how.

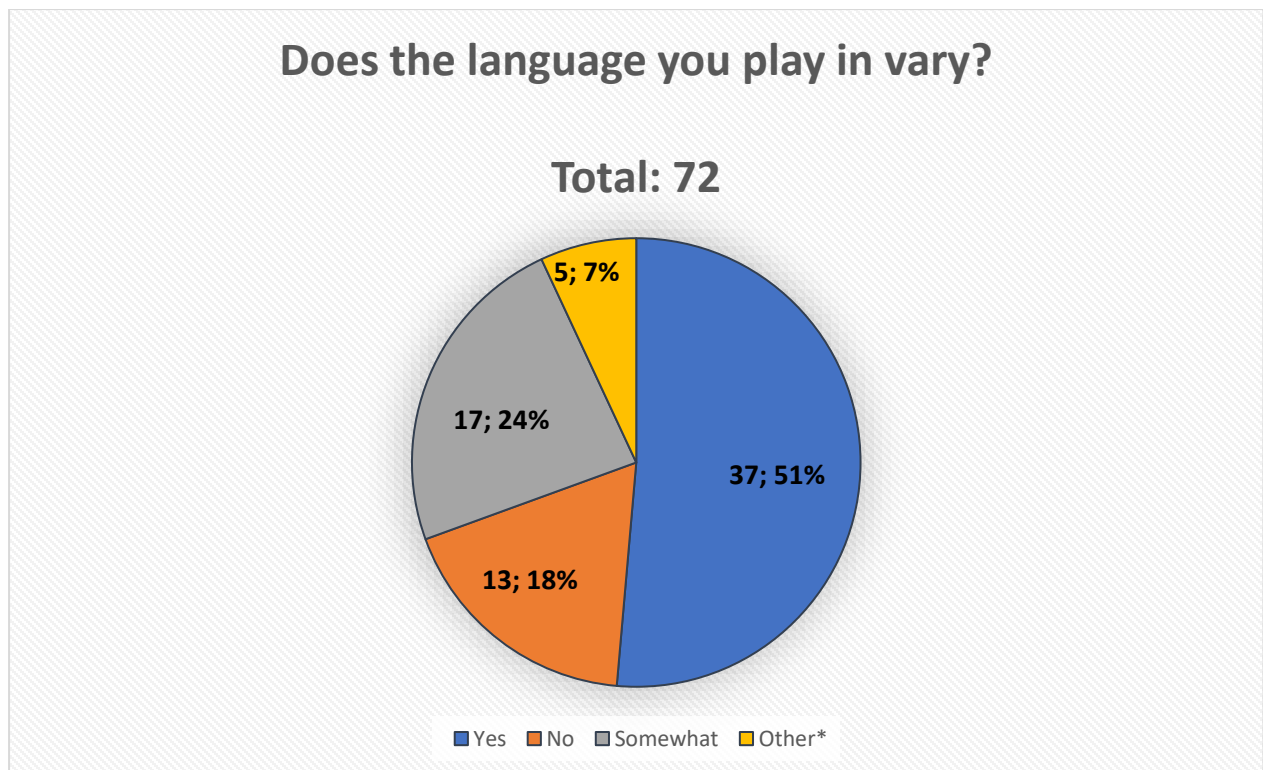


Figure 6. Whether the participants would use different languages in different situations or not

Figure 6 shows us that half of the 72 participants that answered this question stated that they use different languages in different situations. Another 17 noted that they change languages in different situations at least occasionally. Many of the participants in this category noted that commonly, the game would only be available in English, thus, they were unable to change even if they wanted to. However, if they had other language options offered by the game, they would occasionally choose something else. There were also those that preferred to play certain games in Finnish and others in English. Many of the participants also only played single player video

games or games, where communication with others was not necessary, therefore, they only needed to consider the language choices offered by the game itself and not outside sources.

Out of 72 participants, 13 reported not changing their language. The common consensus in this category was that there was no need to change language, either in that most video games were only available in English, that they only played by themselves, or that regardless of the language options of the game, they would always use a specific language. The last category, other, consisted of answers that did not fit into any of the other categories. Many of these answers were somewhat ambiguous, generally not offering enough evidence to show whether the participants would or would not change their language, or they did not answer the question. In retrospect, it might have been more conducive to break this question down into two separate ones: one focusing solely on the languages offered by the game and a second one focusing on factors outside of the game's options.

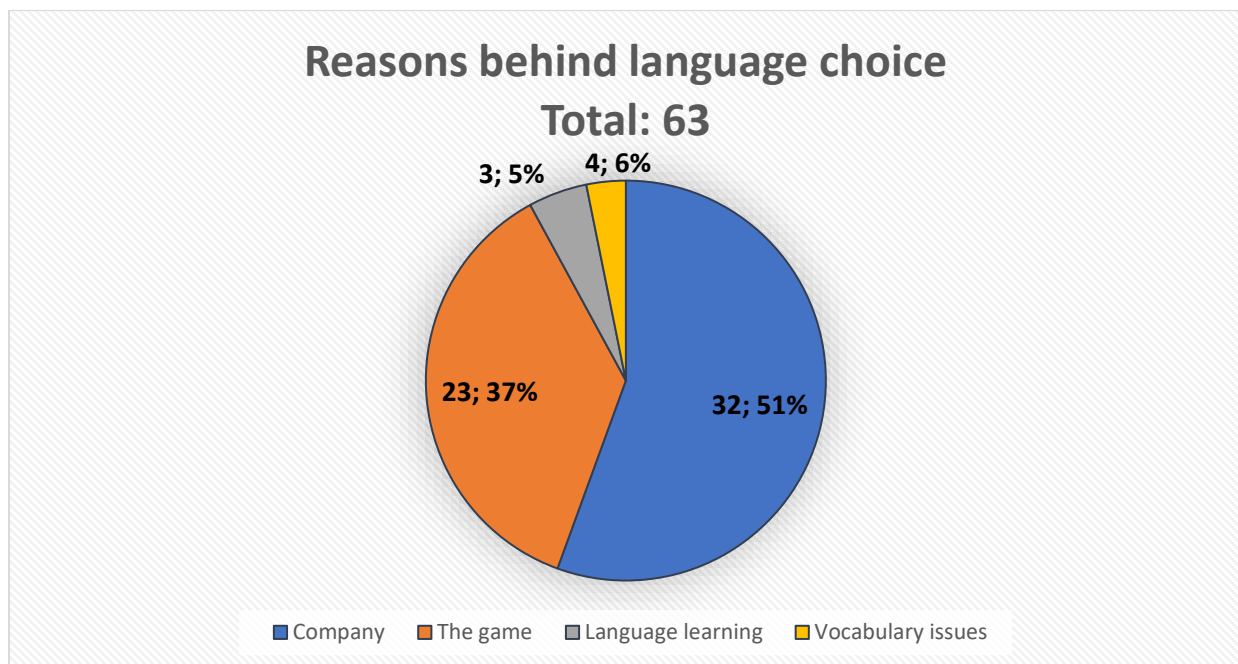


Figure 7. The reasons behind language changes in various situations.

Out of all the 72 participants, not everyone explained how or why they would or would not change their language use. At the same time, however, many participants, as seen in Figure 7, offered multiple explanations. The most mentioned reason for changing languages was related to the company the participant was in; 32/63 stated they would use a different language depending

on the perceived language competence of whoever they were playing the game with. However, if the players shared a first language and there was no one present who could not understand the language, the participants seemed to favour using their first language. A few (3/63) participants noted that they would prefer to use English regardless, for reasons such as improving one's language skills or because it was easier to talk about a game in its original language. In this category, there were participants who explicitly mentioned resorting to English as a lingua franca, although some also mentioned changing to other languages such as Swedish and German. The second largest (23/63) reason for language change or the lack of it depended on the game itself. Nearly half of them (8/23) stated that most games are only available in English or some other language, such as German. Not surprisingly, nine participants said that they would not change their language or that they rarely did, expressing that it was typically not possible, even if they were otherwise willing. There were, however, also participants who said that they would change their language depending on the game, for example, they might play the game in English if they played by themselves but use another language if they were playing with friends or children. As mentioned earlier, a few participants expressed that they would change languages in order to improve their language skills, which is encompassed by the language learning category.

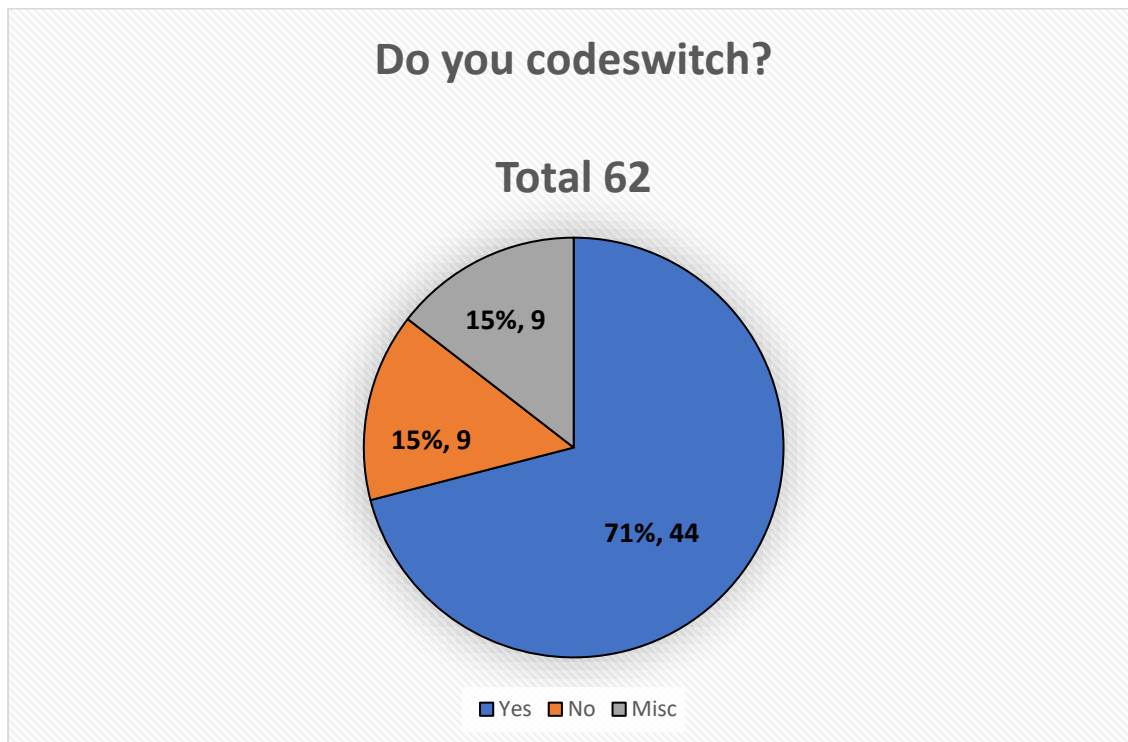


Figure 8. The number of participants that resorted to codeswitching.

The great majority (44/62) of the participants stated that they codeswitch (Figure 8), nine did not, and one only codeswitched when discussing games with others. However, four out of those nine people played alone and one added that they would codeswitch, if they played with others. There were also nine answers that were unclear: they were either blank, or the participant may have talked about codeswitching, but did not clearly indicate whether they themselves codeswitch or not.

Table 3. Reasons behind codeswitching.

Reasons for codeswitching	Frequency	Percentage
Efficiency	35	55.56%
Naturality	10	15.87%
Terminology	10	15.87%
For fun	2	3.17%
Everyone does it	2	3.17%
Habit	2	3.17%
Casual environment	1	1.59%
Translating unnecessary	1	1.59%
Total	63	99.99%

Out of all the 63 given reasons to codeswitch (Table 3), some were by the same participant and some participants chose to not give any reasons at all. The most frequently cited reasons for codeswitching were that codeswitching was simply the most efficient option; it was easier (11/35), faster (14/35), more efficient (1/35), and more accurate (9/35). Rather than listing all the reasons separately, I chose to put them under the efficiency category (35 total) as they all affect efficiency of use while still maintaining functionality. The second category, naturality, is made up of two subcategories: the sense that translating a game term feels unnatural (2/10), and that codeswitching itself feels more natural or makes sense (8/10) in that context. Interestingly, seven of these participants also noted that they codeswitch to make their communication more efficient. Seemingly, at least to these participants, codeswitching is an integral part of video games and not

codeswitching would be odd. The next category, terminology, refers to the participants attesting to either inability to remember the required terminology at an appropriate speed (7/10), the terminology being inadequate with 4/10 stating that accuracy would suffer without codeswitching, “.. sillä se kuulostaisi vieraalta eikä välttämättä antaisi yhtä tarkkaa viestiä kuin alkuperäiskielen käyttö.” (: since it would sound foreign and wouldn’t necessarily relay the same meaning as using the original language). Similarly, Aljoundi (2013) observed that students tend to resort to codeswitching in order to avoid misunderstandings or terms not existing in their first language. There were also participants (2/63) who codeswitched because they thought it was fun, because the people around them codeswitched and it would, therefore, be odd if they did not (2/63), because it had become a habit (2/63), because they felt it was ok to do so in a casual setting (1/63), or because translating was seen as unnecessary (1/63) since using the game’s own terminology was more accurate anyway. Piirainen-Marsh (2010) noted that the adolescent boys in their study also resorted to codeswitching, systematically and meaningfully drawing on English while they played. It is seemingly evident and undeniable that codeswitching is an unavoidable part of gaming in Finland, and that this strategy is employed for a multitude of reasons.

4.4 Game and genre choices

A total of 81 participants listed their all-time favourite games (as shown in Table 4), however, one of these participants chose to list favourite genres rather than games. For the sake of accuracy, this participant’s answer was omitted, leaving us with a total of 80 usable answers. Between the 80 participants, the total number of games mentioned overall was 303 with 140 of them being separate games. The great majority (70/80) of participants listed four games, with only ten participants listing less. Many favourite games were shared between different participants, the most popular ones being *The Sims* with 17 mentions, *The Elder Scrolls* with 16 mentions, and *Final Fantasy*, with 14 mentions. The overall genre listing between the 303 games was 519 with some games having multiple genres and some only having one.

Table 4. Favourite games divided into a list of genres.

Genre	Frequency
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Action	124
RPG (RolePlaying Game)	122
Adventure	83
Simulation	29
Strategy	25
Shooters	24
Platformer	17
Casual	15
Indie	14
Puzzle	13
MMO	12
Racing	10
Party	5
Fighting	5
Card&board	4
MOBA (Multiplayer Online Battle Arena)	3
Rhythm	3
Horror	3
Sports	3
Word	2
Mini game collection	1
Music	1
Arcade	1
Total game mentions	303
Total different games	140
Total genre mentions	519
Total respondents	80

The most popular genres were action (124), RPG (122), and adventure (83) by far. The next category is far behind at 29, with the rest being even lower. Interestingly, according to Phan et al.

(2012: 6), none of these genres are typically preferred by women. In fact, they are listed as genres preferred by men. It is unclear what the exact reason for this is, for example, it could be that women in Finland have very different tastes or that trends have changed. This is something to keep in mind for future research.

4.5 Game and gaming mode preferences

In relation to the favourite games of participants as shown in Table 4, I also listed the available game modes each game has. This is to display the language opportunities or potential the listed games had and how the participants themselves chose to play, as shown in Figure 9.

Table 5. The list of game modes available for games.

Single player	Multiplayer	Co-op	MMO	Total
258	101	34	12	405

As shown in Table 5, the majority of favourite games were single player games, however, 135 of the participants' favourite games have at least some mode of multiplayer available, with MMOs being an exception as they are strictly multiplayer. Another clear distinction is between multiplayer, which is typically online with multiple people, versus co-op, which is two players either online or in the same room. Moreover, a co-op mode can seldom be played without communicating with the other player, whereas multiplayers may or may not require communication. These options allow for different language learning opportunities, although even single player games can be played together with other people in the same room or online on streaming platforms.

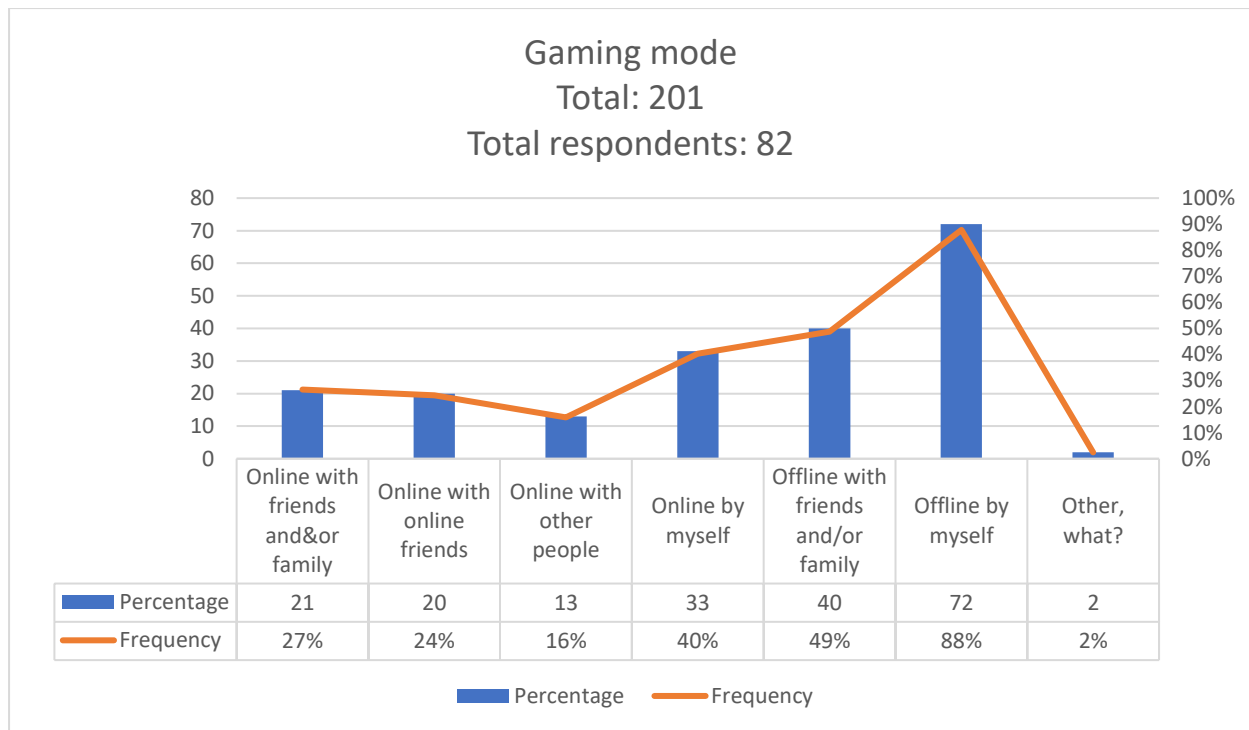


Figure 9. The different gaming modes.

Considering that in Table 5, out of 405 games, 258 games were single player, it is reasonable that out of the total 82 participants, 72 chose to play offline by themselves (Figure 9). However, it should be noted that participants were able to choose multiple options to better reflect their gaming habits. Therefore, although playing offline and alone was the most popular option by far at 88% of participants, an additional 40 chose playing offline with friends or family.

Interestingly, 33 chose to play online by themselves, 13 chose to play with other people, 20 chose to play with online friends, and 21 chose to play with their friends or family. Even in online play, solo play seems to be the most popular option by far, with playing with real-life friends and family coming in second. One of the participants who chose the option *other* noted that they do not play internet games, while another one stated that they prefer playing some games by themselves and others with other people. Although this finding is interesting, it is by no means surprising as women do not seem to prefer playing online, at least not socially (Mäyrä et al., 2016: 57; Saarela, 2010: 75, 111). In comparison to 10-19-year-old men of whom 47.5% play online games, for women, this number is only at 6.7% (Mäyrä et al., 2016: 57).

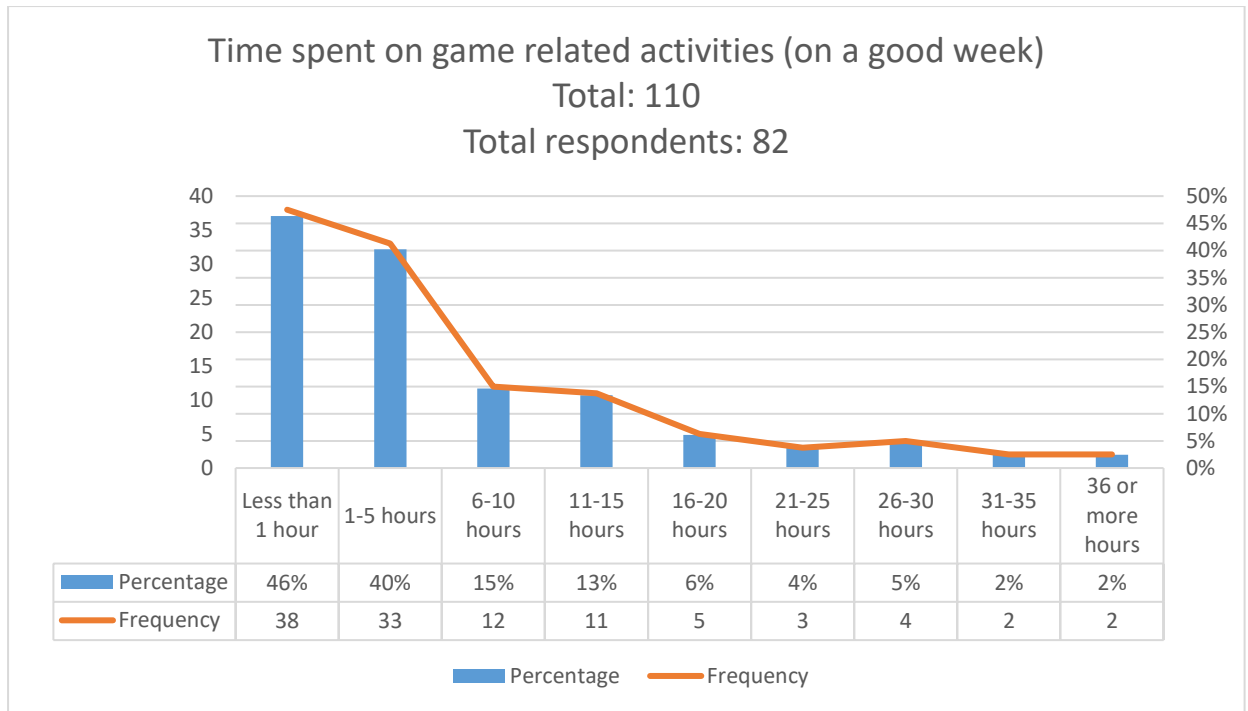


Figure 10. Time spent on game related activities.

The participants were allowed to choose multiple options in rating their time spent on video game related activities to better reflect their activities. As can be seen in Figure 10, the number of hours spent on game related activities (for example, reading or talking about games/gaming) was relatively small, with 38/82 participants spending less than one hour per week on these activities and 33/82 spending less than five hours. One recurring trend here (13/40 participants who wanted to further clarify the time spent on game related activities), which may, at least partially, explain the low numbers, was that the participants seemed to not talk about games much or they did so with very few or specific people “Peleistä tulee puhuttua lähinnä vain lähimpien ystävien kanssa.” (: I only really talk to my closest friends about games). At the same time though, a good number of participants spent 6-15 hours on game related activities per week (23/82 total), with 16/82 participants spending over 16 hours weekly. On the one hand, these results were somewhat surprising. Due to the emergence and popularity of streaming video games and related platforms, such as *Twitch* with over 15 million unique daily views (Smith, 2019; Twitch Interactive, 2019), I would have expected the numbers of game related activities to be higher. On the other hand, though, it is also true that *Twitch* users are mostly men. It would certainly be interesting to find out why women do not seem to be interested in these sorts of platforms, whether they make use

of the social opportunities afforded by these platforms and if not, why that is, how time is spent on game related activities in more detail, and how this can be seen in the language skills of women. Overall though, because the numbers were fairly low for most participants, it seems unlikely that significant language gains were made by spending time on game related activities versus on playing games.

4.6 Perceived improvements on language skills

This section focuses on the perceived language gains the participants reported. In other words, whether the participants felt their language skills improved through playing video games and, if so, which areas specifically.

Naturally, when considering the perceived improvements in language, the first and foremost question is whether there were any perceived improvements in the first place. Out of 82 respondents (Figure 11), 71 felt that their language skills have improved. Only four thought that video games had not improved their language skills and seven were not sure. Even though most of the respondents did feel that their language skills have improved by playing video games, it is important to note that the question may be viewed as vague by some as there is no unit of measurement or comparison offered here.

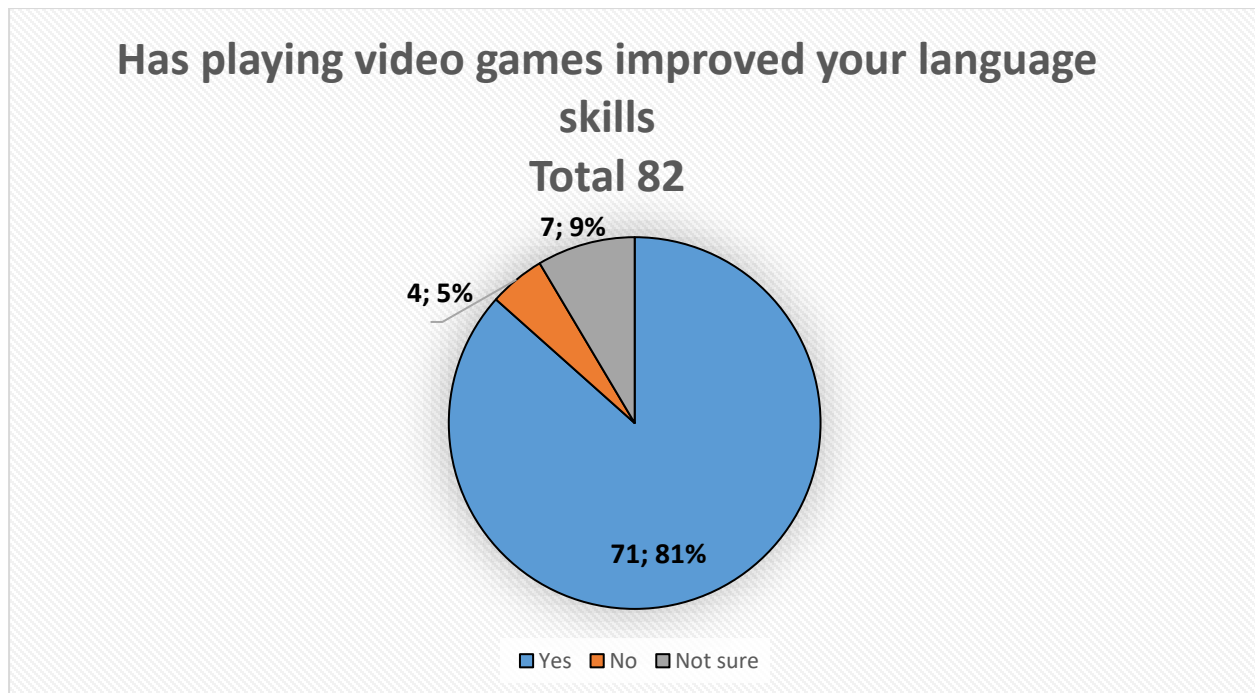


Figure 11. Whether playing video games has improved language skills or not.

In order to gain more detailed information on language gains, the participants were asked to rate their perceived gains in specific categories (Pronunciation, Listening, Vocabulary, Using the language, and Reading). All these categories were rated on a Likert scale from 1 (not at all) to 7 (not applicable). Each category is represented by its own graph to make it simpler to read.

However, unfortunately, despite piloting the questionnaire several times and creating several drafts, an unintended option was accidentally left in. For the sake of accuracy, the replies that chose this unintended option have been excluded from the results.

It should also be noted that all these categories are concerned with *perceived* improvements; they have not been tested or validated. The results in this section have been split into one figure and one table per category per topic (e.g., pronunciation improvements in Figure 12 and how pronunciation had improved in Table 7). The answers that did not fit under the categories here are presented in their own table afterwards.

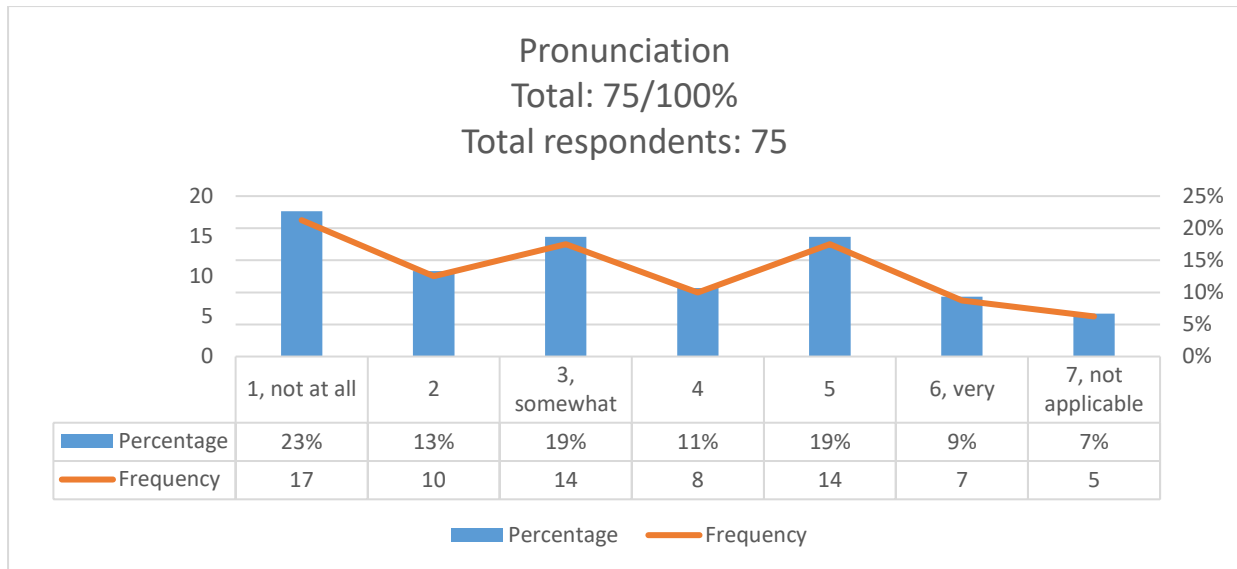


Figure 12. Perceived language improvements on Pronunciation.

As shown by Figure 12, quite a few participants felt that their pronunciation did not improve at all, or it improved very little (17/75 and 10/75, respectively). 5/75 participants noted that pronunciation was not applicable to the games they play. A total of 32 people did not learn any or almost any pronunciation by playing video games, and another 14/75 only somewhat learnt pronunciation from games. That leaves a total of 29 people who felt they learnt between a good amount of pronunciation (8/75 more than somewhat, 14/75 a little less than very much) to a substantial amount of it (7/75 for very much). Considering that of 405 games listed, only 135 had some mode of multiplayer and 12 were MMOs, and that the most preferred playing style was alone (102/201) either online or offline, these results were somewhat to be expected.

Table 7. How pronunciation was perceived to have improved

Pronunciation/articulation/speaking	9
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For how pronunciation had improved, 9/9 answers simply stated that their pronunciation, speaking and articulation had improved. Arguably, some items of the Listening category could be placed under pronunciation as well, for example, intonation, however, the participants underlined the ability to understand speech rather than to produce it themselves.

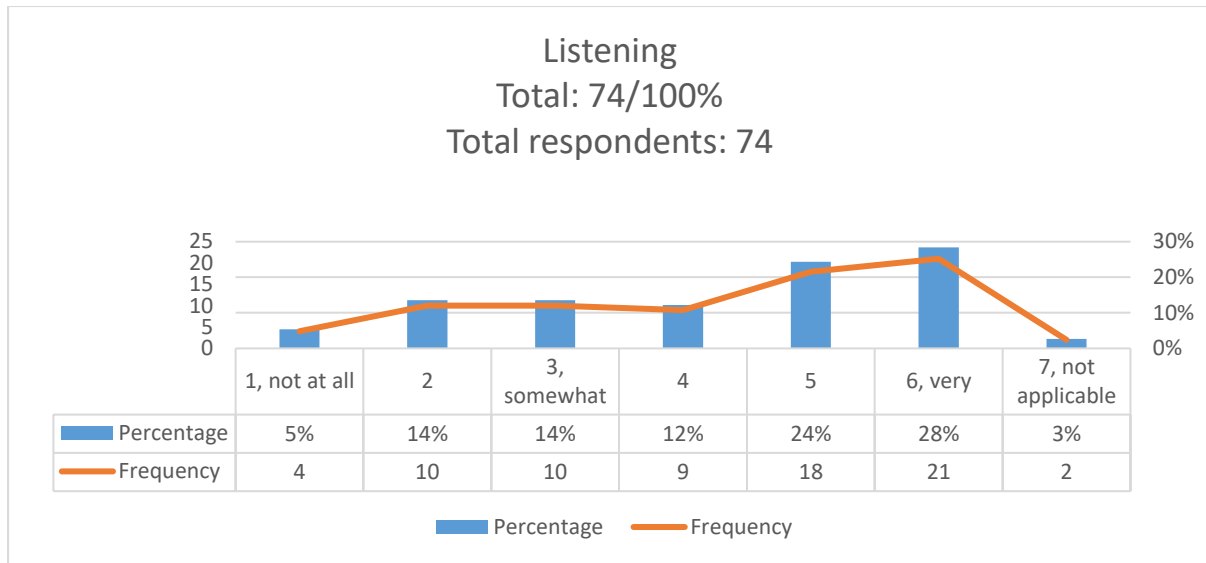


Figure 13. Perceived language improvements on Listening.

Figure 13 shows us that a total of 24/74 participants felt their listening skills had improved less than somewhat, with only 4/74 reporting no improvements at all and only 2/74 noting listening was not applicable to them. The great majority, 48/74, with just under half of that picking the highest option, felt that their listening skills had improved more than somewhat. Given that the most popular genres (action, RPG, and adventure) are typically story oriented, I expected listening to be rated highly. These are also the types of games that commonly feature a diverse set of accents and dialects to increase immersion, which explains why understanding different accents (10/29) as shown in Table 8 was rated so high in how listening skills had improved. Accents may force a person to listen more carefully in order to understand, this may be especially true when the window for reaction is small. This is useful in improving one’s listening skills in that the player is forced to learn to listen better and to improve their skills in the target language; they may not be able to advance in the game otherwise. Franceschini et al. (2013) also noted that video game training increases attention abilities, which is an important factor in being a better listener. Other factors to consider are the sheer amount of spoken text (listening comprehension 15/29 as shown in Table 8) and the fact that the importance of understanding the language of a game was rated so highly in enjoying the game, as shown in Figure 5 respectively.

Table 8. How listening was perceived to have improved

Listening comprehension	15
Accents	10
Listening skills	2
Intonation	1
Listening speed	1

While examining the list of favourite games and looking at the number of participants who felt that they had learnt languages playing video games, I noticed that most of the games listed are story oriented, many of them take place in a fantasy setting and involve a substantial amount of unusual vocabulary that might not be taught at school. Some of these terms may not be commonly heard in movies or television shows either, even if the items themselves appear (for example, armour parts many RPG players learn). Thus, with 31/73 of the participants rating their vocabulary learning at the highest-level (Figure 14) and with the majority of them (63/76) reporting to having learnt new words as shown in Table 9, the results for Vocabulary learning were high as I had expected. Out of the 73 participants (Figure 14), only ten rated their vocabulary learning as somewhat or below somewhat, with only one participant stating it is not applicable to the games they play and, again, with the majority (62/73, total) rating perceived vocabulary learning as higher than somewhat. Moreover, in Table 9, 9/76 reported to having learnt phrases, 3/76 had learnt slang, and 1/76 had learnt Old English. It should be noted that out of the 73 participants, some reported having learnt vocabulary in more than one way, for example, acquiring new vocabulary and phrases.

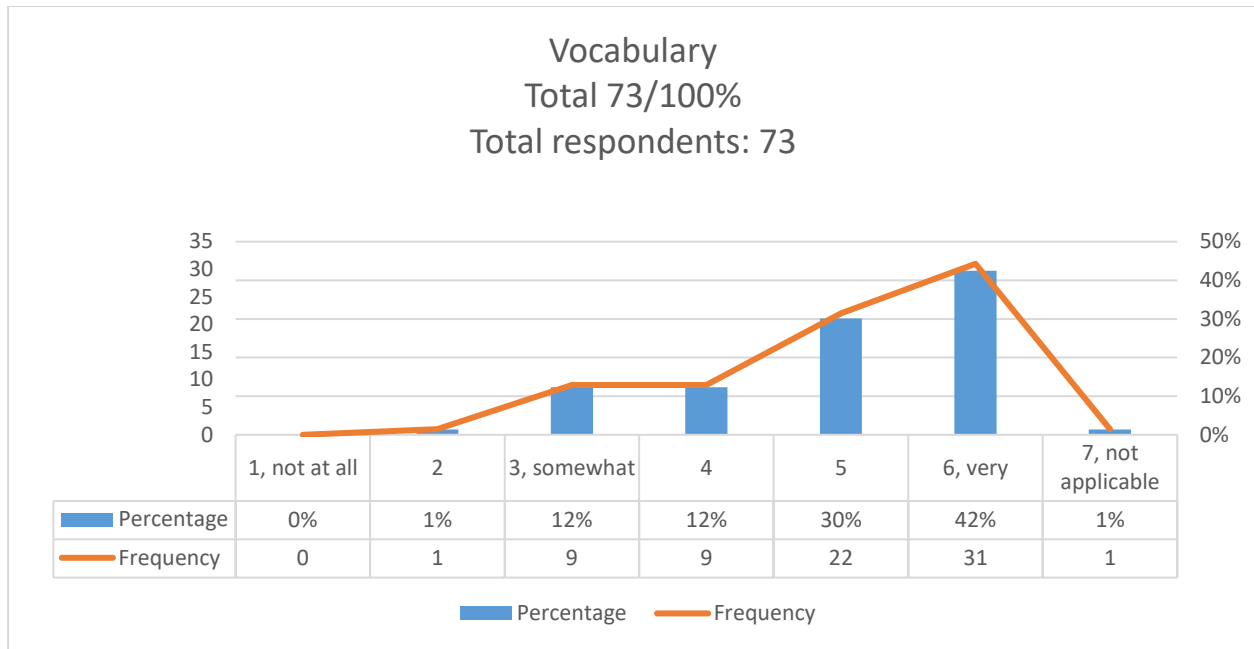


Figure 14. Perceived language improvements on Vocabulary.

Table 9. How vocabulary was perceived to have improved

Vocabulary and phrases	76
Vocabulary	63
Phrases	9
Slang	3
Older language	1

Interestingly, based on previous research, RPGs have had the highest correlation with good English grades (Uuskoski, 2011: 32), however, in the current study, 6/43 participants stated that playing video games had not improved their grades as they had mostly acquired vocabulary that was not applicable at school. Although further research on the topic is needed, if it is true that the vocabulary learnt through RPGs specifically is not useful in acquiring good grades, it follows that RPGs must have other features besides useful vocabulary that aid in language acquisition.

Reinhardt (2019: 92-93) recounts that, indeed, RPGs and MMORPGs are the best studied genre and have been found, more so than others genres, to support language learning. It may be that the participants of the present study are either unable to assess the usefulness of the vocabulary they learn, as was the case in the small message board study Reinhardt (2019: 38) conducted where

users were not certain of the usefulness of acquired vocabulary, or they may be learning more syntax, grammar and spelling conventions than they realise, or the simulated social interaction in single player games is very effective. It may also be that the improvements on grade were not genre specific, but rather, depended on the type of game. However, these topics require much more research.

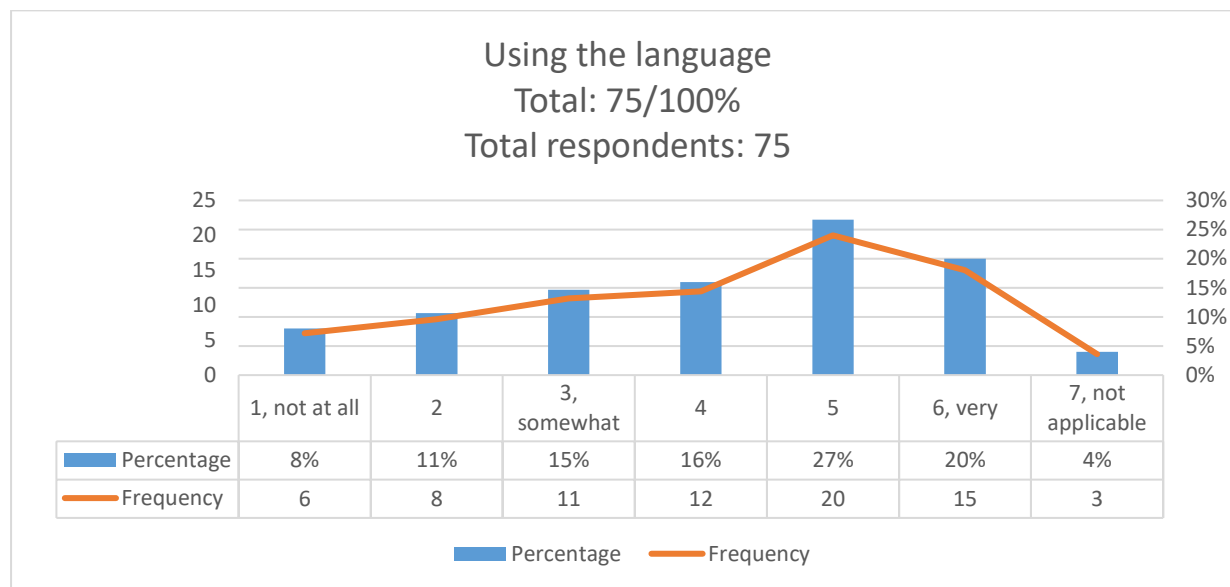


Figure 15. Perceived language improvements on Using the language.

Due to social gaming not being particularly popular amongst the participants, it might be expected that using the language would not be rated very highly as, arguably, there would be fewer chances to make use of the language learnt. However, as shown in Figure 15, a total of 47/75 stated that they felt their ability to use the language had improved more than somewhat, with 20/75 choosing the second highest option. Only three participants felt that this did not apply to them at all and only six felt there had been no improvement at all, with a total of 25/75 feeling that their ability to use the language had only increased somewhat or less than that. It is important to remember that input alone does not necessarily equal good output, although it can certainly facilitate it. Arguably, the language use situations available in games may not be as authentic as real-life situations such as face-to-face conversations, however, they are certainly no less authentic than the language use situations in classrooms; they may even be more interactive in comparison. After all, in order to play a game, the player is required to react both linguistically in dialogue and by taking action in various situations where they may have a limited time window

and failure may result in death. Moreover, because good dialogue makes for a much more immersive experience, many game developers spend a lot of resources on finetuning in-game interactions. A total of six out of the 75 that specified their learning as seen in Table 10 also stated that using language is how their language had improved.

Table 10. How Using the language was perceived to have improved

Using/producing language	6
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Out of 72 participants that rated their language gains regarding reading, only one participant stated that reading was not applicable to their situation and only one felt that their reading skills had not improved at all (Figure 16). Overall, only 14/72 felt that their reading skills had improved only somewhat or less than that. 23/72 total picked the highest option and 21/72 picked the second highest option, with a total of 57/72 rating their learning higher than somewhat, meaning that the great majority felt that their reading skills had improved significantly as a result of playing video games. Unsurprisingly, as seen in Table 11, out of the 23 responses on how reading had improved, 14 stated that their reading speed had improved and 8/23 stated their reading comprehension had improved, although it was unclear whether this was due to an increase in speed, having a broader vocabulary, being more confident, or some other way.

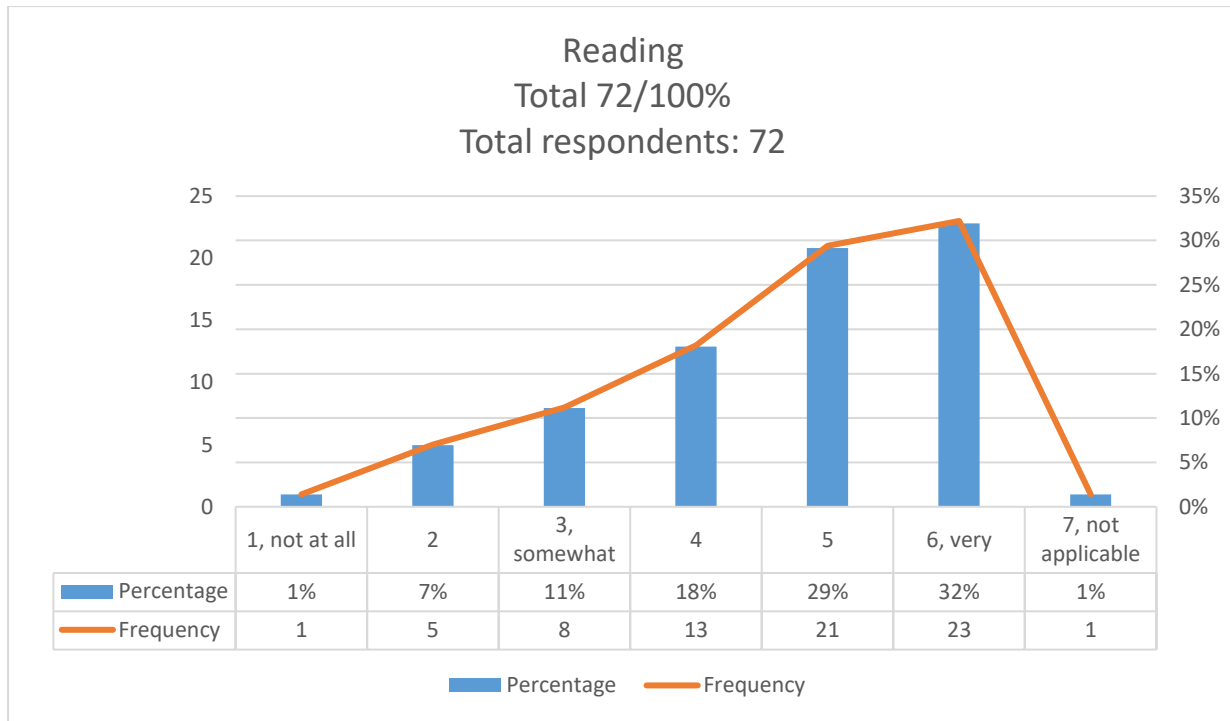


Figure 16. Perceived language improvements on Reading.

Table 11. How reading was perceived to have improved

Reading	23
Reading speed	14
Reading comprehension	8
Reading skills	1

Out of the 174 total entries that did not fit into any other category, five of the participants stated that their grammar or syntax improved. It was not particularly surprising to me that grammar and syntax were not rated very highly as they can be hard to measure even for a professional (e.g., a language teacher).

The miscellaneous category listed (Table 12) consists of a wide variety of different types of items mentioned in the open questions. Many of them (communication, written language, overall speed, everything, understanding language, rhythm of speech, automatization) were vague in different senses. For example, written language did not make any difference between reading and writing, rhythm of speech was unclear on whether it was in speaking or listening, and there was

insufficient data to decide either way. All the items in Table 12 are still, nonetheless, important and tangible ways in which language skills were perceived to have improved.

Table 12. How language skills were perceived to have improved.

*1 = Less shy about using the language, confident in own skills, *2 = Interpreting words by context, without having to check for meaning, *3 = Learning how to use the language authentically; as native speakers do, *4 = Use of language becomes automatic

Grammar and syntax	5
Grammar	4
Syntax	1
Miscellaneous	25
Confidence*1	3
Communication	3
Written language	2
Creativity/humour	2
Overall speed	2
Maintenance	2
Everything	2
Understanding language	2
Context*2	2
Concentration	1
Motivation	1
Authenticity*3	1
Rhythm of speech	1
Automatization*4	1

The participants mentioned a total of 215 items in the open-ended questions as a reason for their language improvements, with many mentioning multiple reasons (see Table 13 in [Appendix C](#)). The most popular reason was the amount of practice (26/215), because they had to in order to progress and enjoy the game (22/215). Other reasons included the environment/visuals (11/215), which referred to the game offering visual cues, motivation (11/215), typically motivation to

understand and then feeling successful when they did, enjoyment (10/215), as the act of playing was simply fun and pleasant, and miscellaneous (8/215), which consisted of items that did not neatly fit into any of the other categories. Some (3/215) participants suggested that they would encounter various types of language in video games and that video games offer a multi-layered context with both textual and visual cues (such as facial expressions for characters). Interestingly 1/215 attributed their learning to good game developers, and finally, 1/215 attested to becoming addicted to games easily, which would make them unwilling to stop playing. It should also be noted that typically, the participants would cite several reasons and ways their language skills improved, with some items having a slight tendency to appear together, for example, vocabulary and reading skills appeared together 14/74 times. One participant specifically noted that: “Tiedän enemmän sanastoa ja idiomeja. Ja, kun tietää sanastoa se nopeuttaa lukemista.” (: I know more vocabulary and idioms. And, when you know vocabulary, it speeds up your reading).

Based on Uuskoski's (2011: 32) study, where boys in upper secondaries were suggested to have better English grades due to playing video games, I had expected playing video games to have affected the participants' grades. However, as shown in Figure 17, the participants were divided into two main groups of equal size with exactly 27/71 reporting a positive effect on their grade and the other 27/71 reporting no effect. Four stated that they were not sure, another four stated they were not sure either, however, their answers showed a slight preference towards games having had a positive effect on their grades. Nine participants did not mention or talk about their grades; they discussed the general effects video games had had on their language skills.

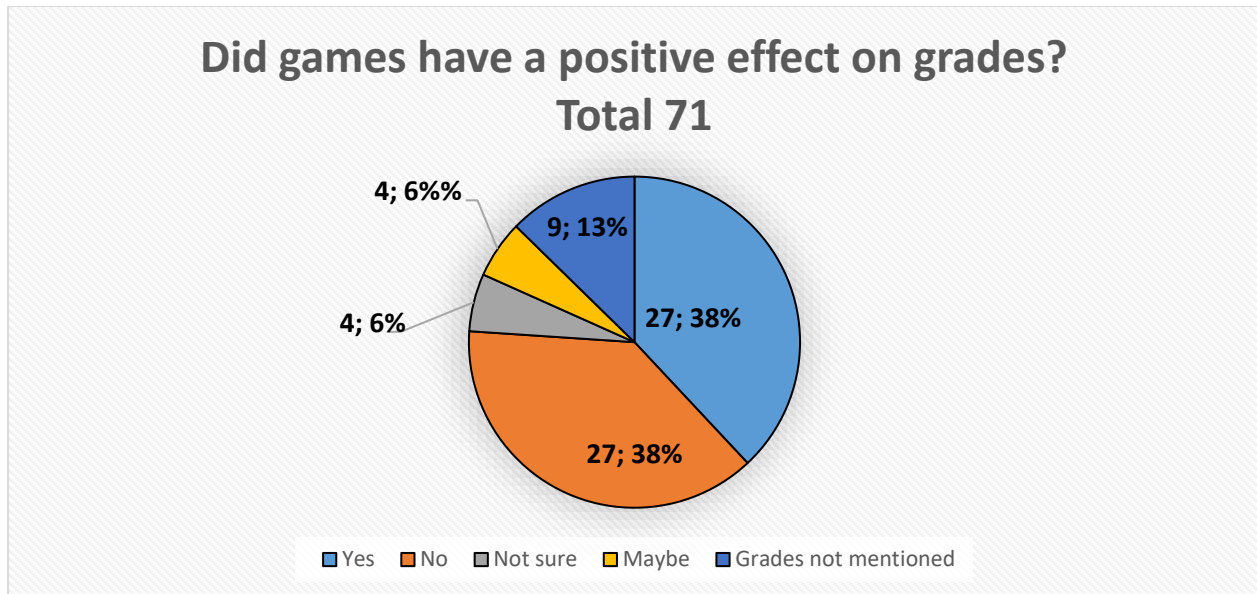


Figure 17. Whether games were perceived to have a positive effect on grades or not.

In addition to asking the participants about the effects on their grades, I included the option to expand on the reasons. However, unfortunately, relatively few participants chose to elaborate on the reasons. Most commonly, as seen in Table 14 in [Appendix C](#), (13/43) the participants stated that their grades had been good prior to starting to play video games, and 10/43 noted that they could not differentiate the effects of video games from other media as both had notably influenced them. 9/43 did not think there had been a visible effect as they had not played much and one stated that they preferred games that did not have a significant amount of language in them. 6/43 found that they had mostly learnt vocabulary that would not ever appear in tests and would, thus, not have affected their grades. 4/43 also stated they had no frame of reference because they had either not been graded for a long time, or they were no longer getting graded.

4.7 Perceived gender differences and effects

This section focuses on the experiences, effects of said experiences, and the differences between girls and boys as people playing video games, as perceived by girls who play. All the questions in this section were open-ended in order to provide the participants with more space and freedom to describe their experiences as they wished.

As shown in Figure 18, participants ponder whether there are differences in treatment between male and female players of video games. Two participants agreed that there are differences, however, they also noted that there are no differences under certain circumstances (no differences if playing with in real-life friends or hardcore gamers). These two answers account for the additional two votes (78/76), as their answers have been counted as both yes and no.

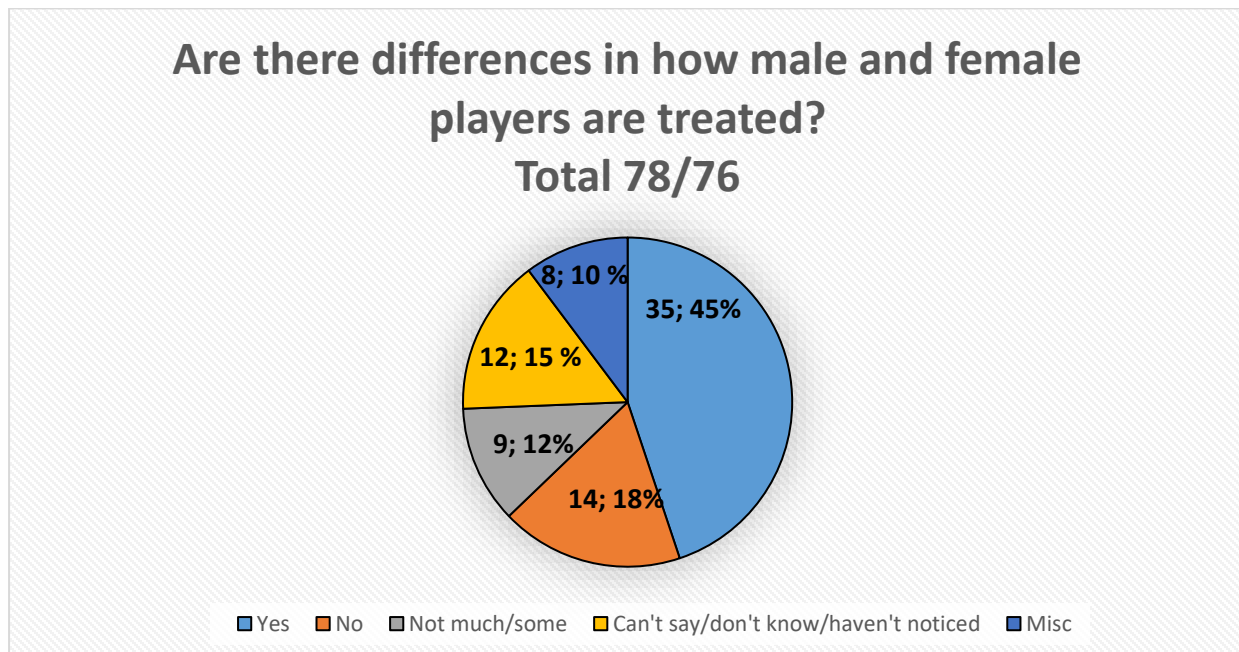


Figure 18. Participants' perceptions of differences in how male and female players are treated.

Roughly half (35/78) of the participants (Figure 18) felt that there are differences in how male and female players are treated. However, an almost equally large number (23/78) thought that there are no differences or that if there are, they are few or insignificant. 14 participants stated that there are no differences or that they do not think there are any. These answers have been separated from the 12 participants that stated that they do not know if there are any differences or that they had not noticed any differences themselves. 8/78 did not answer the question.

The participants were given space to pinpoint what they thought the differences may be. Due to the high number of categories (11 in total) as shown in Table 15 in [Appendix C](#), I have chosen to not list all of them here and, instead, explain the categories in turns. There was some overlap in some categories (positive or neutral, women negative and men negative, miscellaneous), hence, they are discussed together. It should also be noted that out of the 76 participants that listed differences, many named more than one difference.

Most commonly, the participants felt they were less accepted in the gaming world (Less valued, 55/146, in Table 15). For example, some confessed to keeping their gender a secret altogether when playing online because of the unwanted attention, which could be either so-called positive attention, where men would try to bribe them with items, or negative, where men would belittle them. This involved being labelled as a geek for playing video games while the same was not being done to male players even if they played more, as well as being told that they, the women, do not belong in the world of gaming. One participant specifically noted that:

“I think guys can be huge jerks to girls and belittle them if they discover there is a girl playing competitive games [...] guys would harass you when you come online, and ask for your nudes in return for expensive game items [...] they follow girls around in game ...”

This is a serious issue as it had led to the creation of a network of girls protecting each other online and, although attending such events is only positive, this particular participant reported to attending marches defending women’s rights at least partially due to her in-game experiences. Being treated so poorly that these sorts of actions are necessary is alarming and more should be done to teach people why treating others this way, online or otherwise, is wrong.

In the Devalued category, 30/146 participants felt that the activities they enjoyed, their opinions, or they themselves were less valid, valuable, or important. Generally, the participants were told they do not play real games “[...] ja usein tentataan et pelaako ‘oikeita’ pelejä” (: and often I get quizzed over whether I play ‘real’ games or not), their opinions or gaming skills were not taken seriously “omg we have a girl, damn we are already losing” and, as a result, they felt that they had to prove they had the knowledge and skills to play video games. In Saarela’s (2010: 91) study, this was the single-most common complaint (roughly 79/113) and although I had expected it to be amongst the highest categories based on previous studies (Korhonen, 2014; Saarela, 2010), the number of negative experiences was still surprising. Additionally, there were participants in the current study (Harassment category) who reported to having been harassed online, ranging from being asked for nudes, being followed around in-game and so on, also visible in Saarela’s study (2010: 91).

As stated before, positive or neutral, women negative and men negative, miscellaneous categories are introduced together. They all directly relate to the mostly negative types of experiences the participants had faced for playing video games as women, however, there are some nuanced

differences between them as well. In the Positive or neutral category in Table 15, there was no clear indication whether these differences were considered positive or not, and they could arguably be either. Overall, the participants noted that men's gaming habits were different: "Miehet, joita tunnen, pelaavat ehkä enemmän ja yleensä myös verkossa. Naiset enemmän offline ja kavereiden kesken" (: The men I know maybe play more and usually also online. Women play more offline and amongst friends.). According to them, men play more, they are more social and more goal oriented. Some women were considered to not make a big deal out of gaming and being smarter and less irrational than men, although there were no concrete examples of this, which makes the statement difficult to evaluate. There were also participants who thought that men and women play different types of games and genres, and they generally prioritise different aspects of games (such as graphics over story). As we learnt before in *Pelaajabarometri* (Mäyrä et al., 2016: 55-58), there were some differences in the genre preferences of Finnish men and women, with the biggest differences being between casual and non-casual players. This is still the case in the newest edition (Kinnunen et al., 2022: 92-95).

The next grouping in Table 15 consists of the Women negative (6/146) and Men negative (5/146) categories. These were all features that were seen as negative in relation to the actors rather than the acts. For example, rather than stating that a negative event had happened, the participant highlighted the actor, as in, "[...] guys can be huge jerks to girls". Women typically focused on themselves, seeing themselves as bad players, or other women, seeing them as performing undesirable acts as other women in video games. In this sense, the men in this category were treated much more negatively, being cited as jerks, lacking self-control, and so on.

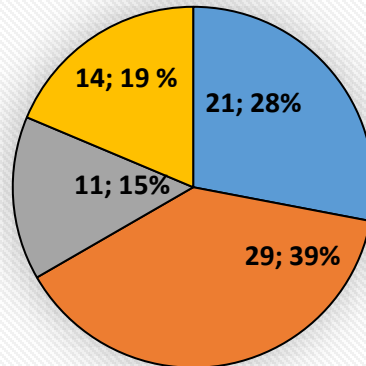
Finally, in the Miscellaneous category, there was an assortment of differences. Some women highlight their gender online, whereas others do not. One participant was saddened by the oversexualisation of female characters in games, however, they did not report to feeling less valued or being viewed more sexually themselves. MacCallum-Stewart-Stewart (2014) and Kennedy (2002, as quoted by MacCallum-Stewart-Stewart 2014: 2-3) point out that there is a difference between playing a character and viewing them, hence being sad about oversexualised characters might not directly transfer to real-life or the person themselves, which is why this item is placed into this category instead of the Devalued category. One participant also noted that as a result of their negative experiences, online games are scary. Finally, one participant noted that

women do not get invited to local area network parties even if the men having the party know the women are interested in video games. In this case, the participant expressed some interest in joining such events and was sad over not having been invited. This is interesting and it may reflect the idea that men's gaming is thought to and found to be more social (men at 21.8% versus women at 3.6% in online multiplayer for casual players, similar for active players (Mäyrä et al., 2016: 57)). Based on this information, it would be interesting to look more closely at the reasons women do not (or do) play more socially, making this another topic for future research.

However, on a more positive note, 9/146 stated that the conditions for women as gamers have improved over the last ten or so years. It was also noted that real, hardcore, gamers do not care about gender, which is consistent with previous research (Mäyrä et al., 2016: 55-58). There was also the Just different category (9/146), wherein the items in this category were not necessarily seen as positive, negative or neutral; they were simply different. For example, some noted that women get more positive attention for playing video games, which could even help someone in finding a partner "... pelit ovat monesti olleet hyvä keskusteluaihe, jonka kautta pisteet ovat nousseet esim. potentiaalisten poikaystäväehdokkaiden silmissä." (: games have often been a good conversation topic that's upped my points for example, in the eyes of a prospective boyfriend), although some did not like being the target of positive attention or that if they played male characters, they were treated better: "Mieshahmolla pelatessani muut pelaajat puhuvat tuttavallisemmin ja antavat omaa tilaa kartalla .." (: Whenever I play a male character, people are more casual with me and give me more space on the map).

Have these experiences, good or bad, been perceived to affect gaming?

Total 75



■ Yes ■ No ■ Not really/a little ■ Doesn't answer the question

Figure 19. Whether the experiences, good or bad, affected the participants' gaming habits.

As shown in Figure 19, 29/75 of the participants said that the experiences have not affected their gaming. 21/75, on the other hand, stated that they had, and another 11 stated that the experiences had not had much of an effect but possibly a minor one (total 32/75 total for yes or maybe a little). 14/75 did not answer the question, or their answers were not relevant to the question. For example, one participant had experienced differences between male and female players but most of those experiences were explained by preferring different platforms, which translated to relevant mechanical aspects having affected gaming. In retrospect, the previous question may have been somewhat poorly formulated ("Can you briefly describe your experiences as a girl who plays video games? For example, do you think there are differences between how male and female players are treated, and if so, what are they and why do you think that difference exists?") as nearly every participant answered the example provided and not the actual question. It is not an issue in that the data did not become unusable, however, it explains the high number of answers that were not relevant to whether those experiences affected their gaming habits or not. This question should clearly have been split into two.

Here, I will initially discuss the negative effect these experiences had had on the participants and then explain the positive changes in reference to Table 16 ([Appendix C](#)). One of the most substantial ways the participants' gaming habits had been affected was that they were less likely and less comfortable with talking to other people while they were playing, or about them playing (9/97). For example, one participant noted that: "I still play the same amount [...] it's just that I don't talk.", where they still used voice chat, but they would not speak themselves. Others reported to having difficulty joining at all: "It affected my ability to join voice chat ..". This was seemingly commonly attributed to the negatives, of which some were related to not wanting to be labelled or judged, neither for playing video games nor for playing the video games they chose to play. Few participants tended to refuse help due to the assumption that they were only being offered help due to their gender, which they did not like. Some experienced online anxiety due to negative past experiences, and others had resorted to hiding their hobby or their gender online altogether, as the following statement reveals: "Onlinepeleissä pitää varoa sukupuolensa paljastamista." (: In online games, you have to be careful not to reveal your gender). Some participants also reported to growing attached to specific company, typically, their online community "I stick to my guild [...] We watch out for each other fiercely [...]", some choosing to not play with strangers, and some playing by themselves. A small number of participants also stated that these experiences had affected their game choices: they would either switch games, not enjoy certain genres, avoid popular games or how they chose games in general, and the amount of time they spent on games. Finally, a few participants were wearier of other women in video games or their view of them was worse: "A lot of women took the loneliness and awkwardness of males to exploit them both in the game and financially irl and didn't take kindly to potential competitors ..".

However, there were also positive changes: some participants had stopped caring about what other people thought about their gaming, some had learnt to be more understanding of their spouse for playing video games or had been introduced to more games by their male friends, and some had noticed that their understanding of video games and gaming in general had improved. What makes this interesting is that the number of positive experiences is as high as the highest negative category, both totalling at nine occurrences. I had somewhat expected there to not be a significant number of positive points, in fact, I expected the number of negative effects to have been substantial due to the high number of negative experiences. An interview would have

allowed me to obtain much better data on this topic, although the topic seems to be sensitive and it may be difficult to find participants because of it (Dufva, 2011: 133-134).

4.8 Conclusions

In this chapter, I will briefly summarise the results and discuss them from a broader perspective. In addition, I will go through the limitations of the study and make suggestions for future research.

4.8.1 Results

The study consisted of a total of 84 women, most of whom were under 30-years-old and spoke Finnish as their first language. Almost all of them played mostly in English, although it should be noted that most games are not available in Finnish in the first place. With almost all the participants playing up to 15 hours a week on a good week (110/141), it was not surprising that the majority found language significant in the games they played in multiple ways and that they felt they had learnt various areas of language through playing. Interestingly, however, when asked how much time the participants spent on game related activities on a good week, the majority of participants spent less than five hours per week, with 38 spending up to an hour a week. In this, women spend much less time on such activities on a weekly basis which may or may not have an effect on their language learning. This is a topic that should be studied further.

More specifically, out of all the categories for the importance of language in games (operational, story, communication, and general enjoyment), all were rated highly across the board with over half rating each category at 3 (Likert's scale 1-7, with 7 being irrelevant) or higher. The only exception was communication, which was not only not important, but 94/164 answers found it to be completely irrelevant to the games they played. Considering that the most popular form of playing was alone (105/201), it makes sense that communication was not rated highly. These results are also in line with previous research where it was found that between 10-19-year-old men and women, 47.5% of men played online games, meanwhile only 6.7% of women did

(Mäyrä et al., 2016: 57). These numbers have significantly increased with up to 19.15% percent of women in the same age group playing online games (Kinnunen et al., 2022: 94). At the same time though, playing offline with family or friends was also fairly common (40/201), which may suggest that the participants did not count communicating with other people in the same space as part of communication in video games, even though they may have discussed the game or how to proceed. It is important to discover the reasons why women do not seem to like playing online with other people and whether, and how, that affects their language learning. It would also be important to find out whether feeling less accepted and less values are part of the reason, and if so, how to begin changing people's attitudes towards girls playing.

In accordance with Mäyrä et al.'s (2016) study, the participants preferred game genres that are traditionally rich in story, and, therefore, linguistic elements (action, RPG, and adventure). As a result, it is not surprising that all the categories for language learning (Pronunciation, Listening, Vocabulary, Using the language, Reading) were rated highly with over half of the participants rating most categories at 4 or higher. However, considering the results of Uuskoski's (2011: 32) study, wherein RPGs had the highest correlation with good English grades in high school aged boys, I would have expected those results to carry onto the current study. Yet, the participants were split on whether video games had affected their grades positively or not (27 yes, 27 no). As it was optional to list reasons why, there were, unfortunately, not a lot of replies, which leaves for an obvious gap in research.

Returning to the topic of the only poorly rated category, Pronunciation, similar to the reasons for why Communication was not rated highly, I suspect that the poor rating is due to the participants preferring to play alone. However, considering that playing offline with people in the same room was the second most popular form of play with 40 participants choosing to play in that manner, it is also possible that the participants did not consider these situations as improving their language skills, even though, as research shows, different types of games improve different types of language skills (Reinhardt, 2018: 104-114).

When questioned about the perceived differences between male and female players more closely, about half of the participants thought that there were differences, about half thought that there were no differences or they were not big ones, and some could not say or did not answer the question. In detailing the differences, most popular was that women were less accepted (55/146)

or devalued (30/146) as players of video games, which aligns with previous studies of women having negative experiences in video games (Saarela, 2010; Korhonen, 2014). Typically, female players were told they did not belong in the world of video games or they were viewed as being worse than men at the same games, although on a more positive note, some participants noted the treatment had improved in comparison to before. However, these negative experiences had affected a little less than half of the participants enough to make them change their gaming behaviour negatively (e.g. some would not reveal their gender online or would not speak in voice chat), although there were also some participants that had simply stopped caring about the opinions of others. Unfortunately, this particular question was poorly formulated and should have been split into two questions as participants tended to answer the example given in the question rather than the question itself. This, too, leaves for a very obvious and important gap in research as it may explain why women do not seem to enjoy playing with others, at least not online. This could also explain the difference in received grades as, as shown by Uuskoski (2011), male high school students who played video games tended to get better grades at English.

4.8.2 Limitations

As discussed previously, the choice between conducting interviews and a questionnaire was not an easy one. On the one hand, there is too little quantitative data for it to be of any real relevance, and on the other hand, the qualitative data is not extensive enough. However, I concluded that what I could have achieved with interviews, I could also achieve through a questionnaire if I included some open-ended questions. In retrospect, I am not convinced this was the best course of action for several reasons. First, including the open-ended questions added the element of interpretation, which lowered the reliability of the data to a degree. Second, the open-ended questions caused issues in investigating correlations as the data analysis program used, *IBM SPSS*, seemed to assign incorrect values to some questions. This meant that all comparisons had to be made manually, which increases the likelihood of human error and lowers the reliability of the correlations as well as adds a higher workload. For example, using a mixed methods approach in the questionnaire led to having to analyse over 50 in depth answers for several questions. Finally, the questionnaire may have been too long. It is also clear that more care should have

been taken in designing the questionnaire. Although the questionnaire was piloted, there were some simple errors or poor formulation of questions that were not caught and, after receiving more replies in general, it was clear that participants required a closer frame of reference to consider certain questions (e.g., effects on grades). In retrospect, an interview might have allowed for better results.

4.8.3 Future research

In retrospect, instead of using mixed methods in a questionnaire as I did, other methods such as visual storytelling, might have yielded equally good or even better results. For example, visual representations of women's experiences as gamers could have been an interesting approach to the topic and is a method to consider for future studies. At the same time, even in-depth interviews on women on these topics would be a meaningful addition to current research.

However, there is and has been a clear gap in research on women in the field of video games in general, and the current study has answered some of those gaps, focusing on language learning specifically. Moreover, the current study has also revealed new gaps that should be researched. Having learnt much about video games and their learning potential throughout the writing of both my bachelor's and master's theses, I have come to believe in the enormous, still largely untapped, potential of video games as tools both for learning and for teaching. In order to make use of video games in teaching, I believe it is important to further study both the topics that I have covered here and the new ones I uncovered. It is my sincere hope that in the future, no one will have bad experiences in video games simply due to their gender and that studies will not simply brush women aside as people who allegedly do not play video games. Further down the line, I wish video games can be a fun way of learning used in schools that everyone can enjoy.

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Appendices

Appendix A: The questionnaire, English

Language learning and attitudes of girls who play video games

Welcome to the survey on language learning and attitudes of girls who game. This survey is aimed at girls who play video games (any game that's played on an electronic platform is considered a video game (e.g. Farmville, Candy Crush, and so on).

The purpose of this survey is to gather data for my master's thesis that focuses on the perceived effects playing video games have on the language learning of girls, as well as their general experiences of and attitudes towards playing. I believe it's an important topic and that's why I'd truly appreciate it if you could tell me whether you think you've learnt languages through playing video games, what types of games you prefer to play, how you prefer to play, your general experiences and attitudes towards playing games, and so on.

There are no right or wrong answers; simply different ones. The survey is available in Finnish and English. You can change the language at the top of the page.

Natalia Korhonen

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1. Age

- 18-years-old or younger
- 19-23-years-old
- 24-28-years-old
- 29-33-years-old
- 34-39 years-old
- 40-years-old or older

2. First language

(This refers to the language you are the most skilled in, e.g. your mother tongue is Finnish but you speak Swedish better than Finnish)

- Finnish
- Swedish
- English
- German
- Russian
- French
- Italian
- Spanish
- Other, what? _____

3. Which language/s do you play in?

- Finnish
- Swedish
- English
- German
- Russian
- French
- Italian
- Spanish
- Other, what? _____

4. How important or necessary is language in the games that I play for... E.g. I couldn't do x without language. (1 = not at all, 3 = somewhat, 6 = very, 7 = not applicable to the games I play)



1 2 3 4 5 6 7

Moving between areas/levels/maps

Playing the character

(moving, using skills, tooltips etc.)

Following the storyline

Learning about the gameworld/lore

Communicating with other players

(WRITTEN)

Communicating with other players

(SPOKEN; voice chat)

User interface + HUD

(Menu, character info, inventory etc.)

General enjoyment of the game

5. Does the language you play in vary depending on what you play and whom you play with, if so, how? E.g. The game you play is in English but all of your friends speak Finnish or vice versa.

6. If you play a game that's in English with people who speak Finnish or some other language, do you borrow terms from English, i.e. do you codeswitch? To what extent and why? E.g. Instead of saying "Herätä mut henkiin" (resurrect me), you'd say "Ressaa mut" (ress me)?

7. Anything to add or clarify? If not, feel free to move onto the next question.

8. What are your all-time favourite games?

9. What was particularly enjoyable about these games? If you can't think of any specific reason, feel free to move onto the next question.

10. How do you prefer to play? Note: The option "Online by myself" has been added with games such as Diablo III, Guild Wars 2 and Black Desert Online in mind, where you can play with other people if you so wish, but don't have to.

- Online with IRL friends and/or family
- Online with online friends
- Online with other people
- Online by myself
- Offline with friends and/or family
- Offline by myself
- Other, what? _____

11. How much would you estimate that you play on a normal week? E.g. You have some work to do but you also have free time. You can choose multiple options to better reflect your gaming behaviour, e.g. you might play a lot when a new game you like is released but barely at all after you've finished the game.

- Less than 1 hour a week
- 1-5 hours a week
- 6-10 hours a week
- 11-15 hours a week
- 16-20 hours a week
- 21-25 hours a week
- 26-30 hours a week
- 31-35 hours a week
- 36 or more hours a week

12. Anything to add or clarify? For example, you might play a lot one week but not feel like it the next. If not, feel free to move onto the next question.

13. How much time would you estimate you spend on game related activities (e.g. reading or talking about games/gaming) on a normal week? You can choose multiple options to better reflect your game related activities.

- Less than 1 hour a week
- 1-5 hours a week
- 6-10 hours a week
- 11-15 hous a week
- 16-20 hours a week
- 21-25 hours a week
- 26-30 hours a week
- 31-35 hours a week
- 36 or more hours a week

14. Anything to add or clarify? For example, you might read or talk about a game a lot when you first start playing it or you only talk about playing games with certain people. If not, feel free to move onto the next question.

15. Do you think playing has improved your language skills?

- Yes
- No
- Not sure

16. Considering the languages I use when I play, my language skills have improved in the following areas...

(1 = not at all, 3 = somewhat, 6 = a lot, 7 = not sure)

	1	2	3	4	5	6	7	8
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		

Pronunciation

Listening

Vocabulary

Using the language

Reading

17. If you think your skills have improved, how? E.g. Your reading speed increased, you learnt more vocabulary.

18. Why do you think that is?

19. If you look back on your grades thus far, do you think the improvements may have affected them positively? Why, why not?

20. Can you briefly describe your experiences as a girl who plays video games? For example, do you think there are differences between how male and female players are treated, and if so, what are they and why do you think that difference exists?

21. Do you think that those experiences, good or bad, have affected your playing habits? E.g. how much you enjoy it and so on.

Appendix B: The questionnaire, Finnish

Pelejä pelaavien tyttöjen kielenoppiminen ja asenteet

Tervetuloa vastaamaan tyttöjen kielenoppimiseen ja pelaamiseen liittyvään kyselyyn. Kysely on suunnattu tytöille, jotka pelaavat videopelejä (mikä tahansa peli, jota pelataan elektronisella alustalla luetaan videopeliksi, esim. Farmville, Candy Crush ja niin edelleen).

Tämän kyselyn tarkoitus on kerätä aineistoa maisterin opinnäytetyöhöni, jossa tutkin tyttöjen havaintoja heidän omasta kielenoppimisestaan videopelien avulla ja heidän yleisiä kokemuksiaan ja asenteitaan pelaamista kohtaan. Mielestäni tämä on tärkeä aihe ja siksi olisin erittäin kiitollinen, jos voisit kertoa minulle omista kokemuksistasi. Koeto oppineesi kieliä pelaamalla videopelejä, millaisia pelejä pelaat mieluiten, kuinka mieluiten pelaat, millaisia yleisiä kokemuksia sinulla on pelaamisesta, millaisia asenteita sinulla on pelaamista kohtaan, ja niin edelleen. Ei ole olemassa oikeita tai väärää vastauksia; vain erilaisia. Kysely on saatavilla suomeksi ja englanniksi. Voit vaihtaa kieltä sivun yläosasta.

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1. Ikä

- 18-vuotias tai nuorempi
- 19-23-vuotias
- 24-28-vuotias
- 29-33-vuotias
- 34-39-vuotias
- 40-vuotias tai vanhempi

2. Äidinkieli (Tällä tarkoitetaan sinun vahvinta kieltäsi, esim. virallisesti äidikielesi on suomi, mutta puhut ruotsia paremmin kuin suomea)

- Suomi
- Ruotsi
- Englanti
- Saksa
- Venäjä
- Ranska
- Italia
- Espanja
- Muu, mikä? _____

3. Millä kielillä pelaat?

- Suomi
- Ruotsi
- Englanti
- Saksa
- Venäjä
- Ranska
- Italia
- Espanja
- Muu, mikä? _____

4. Kuinka tärkeä tai tarpeellinen kieli on pelaamissasi peleissä asian x kannalta... Esim. asia x ei onnistu ilman kieltä. (1 = Ei ollenkaan, 3 = Jonkin verran, 6 = Erittäin, 7 = Ei päde pelaamiini peleihin)



1 2 3 4 5 6 7

Liikkuminen eri alueiden/tasojen/maiden tai karttojen välillä

Hahmolla pelaaminen

(liikkuminen, skillien/taitojen käyttäminen, tooltipit jne.)

Tarinan seuraaminen

Pelimaailmaan tai sen tarinaan perehtyminen

Toisten pelaajien kanssa kommunikointi (KIRJALLINEN)

Toisten pelaajien kanssa kommunikointi (SUULLINEN, esim. voice chat)

Käyttöliittymä + HUD

(menu, hahmon tiedot, inventory/tavaralista)

Pelistä nauttiminen ylipäätään

5. Vaihteleeiko pelikielesi sen perusteella mitä tai kenen kanssa pelaat? Jos kyllä, miten?

Esim. peli on englanniksi, mutta kaikki pelikaverisi puhuvat suomea tai toisinpäin.

6. Jos pelaat peliä, joka on englanniksi, mutta pelikaverisi puhuvat suomea, lainaatko termejä englannista, eli vaihdatko koodia? Kuinka paljon ja miksi? Esim. sen sijaan, että sanoisit "Herätä mut henkiin", saattaisit sanoa vaikkapa "ressaa mut".

7. Onko sinulla mitään lisättävää tai haluatko selventää? Jos et, voit siirtyä seuraavaan kysymykseen.

8. Nimeä neljä kaikkien aikojen suosikkipeliäsi

9. Mikä oli erityisen miellyttävää näissä peleissä? Jos et keksi syytä, voit siirtyä seuraavaan kysymykseen

10. Miten pelaat mieluiten? Huom. "Online yksin" vaihtoehto on lisätty huomioimaan sellaiset pelit kuten Diablo III, Guild Wars 2 ja Black Desert Online, jotka toimivat netissä, mutta joissa muiden pelaajien kanssa toimiminen on pitkälti valinnaista.

- Online IRL kaverien ja/tai perheen kanssa
- Online nettikavereiden kanssa
- Online muiden ihmisten kanssa
- Online yksin
- Offline kaverien ja/tai perheen kanssa
- Offline yksin
- Muuten, miten? _____

11. Kuinka paljon arvioisit pelaavasi normaalina viikkona? Esim. kun sinulla on jonkin verran töitä, mutta myös vapaa-aikaa. Huom. Voit valita useamman kuin yhden vaihtoehdon kuvaillaksesi pelikäyttämistäsi paremmin, esim. Jos pelaat paljon silloin, kun odottamasi uusi peli tulee markkinoille, muttet juurikaan pelin läpipelattuasi.

- Alle 1 tunnin viikossa
- 1-5 tuntia viikossa
- 6-10 tuntia viikossa
- 11-15 tuntia viikossa
- 16-20 tuntia viikossa
- 21-25 tuntia viikossa
- 26-30 tuntia viikossa
- 31-35 tuntia viikossa
- 36 tuntia viikossa tai enemmän

12. Onko sinulla mitään lisättävää tai haluatko selventää? Esim. saatat pelata paljon yhtenä viikkona, mutta seuraavalla viikolla ei enää huvita. Jos sinulla ei ole lisättävää, voit siirtyä seuraavaan kysymykseen.

13. Kuinka paljon arvioisit käyttäväsi aikaa pelaamiseen liittyviin aktiviteetteihin (kuten pelaamisesta tai peleistä lukemiseen ja puhumiseen) normaalina viikkona? Huom. Voit valita useamman kuin yhden vaihtoehdon kuvaillaksesi pelaamiseen liittyviä aktiviteettejasi paremmin.

- Alle 1 tunnin viikossa
- 1-5 tuntia viikossa
- 6-10 tuntia viikossa
- 11-15 tuntia viikossa
- 16-20 tuntia viikossa
- 21-25 tuntia viikossa
- 26-30 tuntia viikossa
- 31-35 tuntia viikossa
- 36 tuntia viikossa tai enemmän

14. Onko sinulla mitään lisättävää tai haluatko selventää? Esim. saatat lukea tai puhua pelistä paljon aloitettuasi kyseisen pelin pelaamisen tai puhut peleistä vain tietyn tai tiettyjen henkilöiden kanssa. Jos sinulla ei ole lisättävää, voit siirtyä seuraavaan kysymykseen.

15. Onko pelaaminen mielestäsi parantanut kielitaitoasi?

- Kyllä
- Ei
- En osaa sanoa

16. Ottaen huomioon ne kielet, joilla pelaan, kielitaitoni on parantunut seuraavilla osa-alueilla...

(1 = Ei ollenkaan, 3 = Jonkin verran, 6 = Todella paljon, 7 = En osaa sanoa)

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		
1	2	3	4	5	6	7	8

Ääntäminen

Kuuntelu

Sanasto

Kielenkäyttäminen tai tuottaminen

Lukeminen

17. Jos kielitaitosi on parantunut, miten? Esim. osaat lukea aikaista nopeammin, opit lisää sanastoa, ja niin edelleen.

18. Osaatko sanoa, mistä se voisi johtua?

19. Jos mietit arvosanojasi tähän mennessä, uskotko kielitaidon parantumisen näkyneen niissä positiivisesti? Miksi, miksi ei?

20. Voitko kertoa lyhyesti kokemuksistasi tyttönä, joka pelaa videopelejä? Esim. onko mies- ja naispuolisten pelaajien välillä mielestäsi jotain eroja ja jos kyllä, mitä ne ovat ja mistä luulet niiden johtuvan?

21. Ovatko nämä kokemukset, hyvät tai huonot, mielestäsi vaikuttaneet pelikäyttäytymiseesi? Esim. kuinka paljon pelaat, kuinka paljon nautit siitä ja niin edelleen.

Appendix C: The data for tables 13, 14, 15, and 16.

Table 13. The perceived reasons behind the improvements.

Why the improvements took place	Frequency
Practice	26
Using the language	8
Repetition	6
Amount of output	5
Time spent	4
Practice	2
Request	1
Required to	22
Different vocabulary/situations	19
Have to	17
Vocabulary	17
Speed of dialogue	3
Objects/situations	2
International setting	1
Teamwork	1
Environment/visuals	11
Pictures/visual cues	5
Immersion	2
Reading while listening	2
Semi/realistic setting	1
Audio cues	1
Motivation	11
Motivation	8
Self-boosting	2
Confidence	1
Enjoyment	10
Fun/pleasant	7
Interest	2

Relaxing	1
Miscellaneous	8
Encounter different types of language	3
Context	3
Developers' efforts	1
Addiction	1
Total answers	215

Table 14. The reasons behind whether video games had had a positive effect or not.

Reasons	Frequency
Grades were already good	13
Hard to differentiate from other media	10
Haven't played much	9
Not applicable to school	6
Nothing to compare grades to	4
Not much language in games played	1
Total reasons	43

Table 15. What the differences in treatment were perceived to be.

*1 = keeping one's gender a secret or avoiding its revelation, *2 = demeaning jokes like "go make us a sandwich", or "there are no girls online" et cetera, *3 = games that are considered girl games and not real games, for example, the sims, *4 = from the context, it was clear that this was not perceived negatively, however, it was unclear whether it was perceived positively or neutrally. This applies to the women positive/neutral section as well, *5 = The contents in this category were debatable as they were seen as positive by some, but negative by others, *6 = two women stated that they are not as good at playing video games as a male player they knew or males in general.

Differences	Frequency
Less accepted	55
Men's/boys' thing	8
Gender secrecy *1	7
Inappropriate for girls	5
Gaming less acceptable	5

Attitudes	4
Assumed male	4
Odd/exotic/taboo	4
Can't tell the player's gender	4
Surprised that the player is a girl	4
Designed for men	3
"Jokes" *2	3
Women not accepted in the world of gaming	2
Keep gaming a secret	1
Geek label	1
Devalued	30
Belittled	6
"Girls" games *3	5
Told they don't know how to play	5
Have to prove themselves	4
Not taken seriously	3
Sexism	3
Negative comments	2
Told to shut up	1
Opinions devalued	1
Men positive/neutral *4	16
Play more	7
More social/team players	4
Goal oriented	3
Talk more	1
Different tastes	10
Genres	7
Men's/boys' games	2
Priorities	1
Just different *5	9
Positive attention	4
Get more help	2

"Positive" attention	1
Avatar affects	1
Improvements	9
Things have gotten better	7
Hardcore gamers don't care	2
Harassment	7
Harassed	3
Asked to send nudes	3
Followed	1
Women negative	6
Not as good at playing *6	2
Trick/lead on men	2
Blackmailing men	1
Treating other women badly	1
Men negative	5
Jerks	1
Impulsive	1
Flip out more easily	1
Must get to be macho	1
The way men talk to women	1
Women positive/neutral *4	3
Don't make a big deal out of playing	1
Women less irrational	1
Women smarter	1
Misc	4
Highlight gender (either do or don't)	1
Oversexualisation	1
Online games scary	1
Not invited to LAN-parties	1
Total	76/146

Table 16. How the participants' gaming habits were perceived to have been affected.

How gaming has been perceived to be affected	Frequency
Talking	9
Don't talk about gaming	3
Don't join voicechat	3
Careful who talk to	1
Talking to men frustrating	1
Don't talk	1
Positive	9
Don't care what other people think	6
Less annoyed at spouse for playing	1
Introduced to more games by male friends	1
Understand games and gaming better	1
Secrecy	8
Gender	6
Hide gaming	2
Negative	7
Labels	3
Afraid of being judged	2
Turn down help	1
Online anxiety	1
Attachment to company	7
More attached to guild/community	3
Don't play with strangers	2
Enjoy playing alone	2
Games	5
Switch games	2
Don't enjoy certain genres	1
Avoid popular games	1
Game choices	1
Time	2
Affects when I play	1

Transistor	GTA 5	Outlast	Amnesia	Crash Team Racing	Little Big Planet	Lego Harry Potter	Ace Attorney	Professor Layton	The Legend of Zelda	Mario (fighting)	Starcraft
1	5	1	1	2	1	2	1	2	9	2	1

Minecraft	Osu! Mania	League of Legends	World of Warcraft	Hearthstone	The Longest Journey	Overlord	Ratchet and Clank	Crash Bandicoot	Okami	Lord of the Rings	HayDay
1	1	1	5	2	1	1	1	3	1	1	2

Chip&Dale	Trine	Candy Crush	Frizzle Frazzle	Total War	Fallout	Red Alert	Sacred	Star Wars: Old Republic	Saint's Row	Dead or Alive	Mortal Kombat
1	3	6	1	1	3	1	1	2	1	1	2

Dumb Ways to Die	Chrono Trigger	Until Dawn	Heroes of Might and Magic	Let it Die	Solitaire	Point & Click	Riddles	Star Wars: Knights of the Old Republic	E-mail Roleplaying	Uncharted	NHL
1	1	1	2	1	2	1	1	1	1	1	2

Beyond: Two Souls	Worms Armageddon	Asphalt 8: Airborne	Piano Tiles	Wordbase	Call of Duty	Super Mario Kart	Destiny	The Stanley Parable	Bastion	Aion	n
1	1	1	1	1	2	3	1	1	1	1	1

