

DIGITAL GAMING PREFERENCES AMONG  
FINNISH PRIMARY SCHOOL STUDENTS AND  
THEIR CONNECTION TO ENGLISH  
LANGUAGE LEARNING

Bachelor's thesis  
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# JYVÄSKYLÄN YLIOPISTO

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<b>Tiivistelmä - Abstract</b> <p>Digitaaliset pelit ovat vuosikymmenien kuluessa kehittyneet paljon ja samalla nousseet suureen suosioon ja yleiseksi harrastukseksi Suomessakin. Viihdearvon lisäksi niistä on kuitenkin myös koulutuksellista hyötyä niiden sisältämän kielimateriaalin ja niiden ympärillä tapahtuvan kielenkäytön vuoksi. Aiemmissä tutkimuksissa on nimittäin todettu, että koulun ulkopuolella tapahtuva vapaa-ajan englannin käyttö voi olla hyödyllinen ja merkittävä osa opiskelijan englannin oppimista. Tämän vuoksi pelien ja englannin oppimisen yhteyttä oli mielekästä tutkia, ja kohderyhmäksi valikoitui aiemmissä tutkimuksissa huomiotta jääneet alakouluikäiset.</p> <p>Tutkimuksen kohteena oli läntisessä Suomessa sijaitsevat alakoulun yhteensä 48 oppilasta neljännestä kuudenteen vuosiluokkaan. Tutkimus suoritettiin oppituntien aikana paperisella kyselyllä, jossa oppilaat ilmoittivat muun muassa pelaamistottumuksiaan. Kyselyn avulla oli tarkoitus löytää vastauksia tutkimuskysymyksiin, jotka pyrkivät selvittämään 1) oppilaiden pelaamistottumuksia ja niiden yhteyttä englannin arvosanoihin, 2) oppilaiden mielipiteitä pelaamisen yhteydestä englannin oppimiseen, sekä lisäksi 3) oppilaiden pelatessaan eniten käyttämiä pelilaitteita ja sitä onko käytetyillä laitteilla vaikutusta arvosanoihin ja mielipiteisiin.</p> <p>Tuloksia analysoitiin kvantitatiivisin menetelmin kolmen eri tutkimuskysymyksen näkökulmasta. Päätelmät myötäilivät aiempia tutkimuksia, joillakin eroilla. Oppilaat olivat melko yksimielisiä siitä, että pelit ovat hyödyllinen apuväline ja motivaattori englannin oppimiseen. Arvosanat eivät kuitenkaan olleet sitä parempia mitä enemmän oppilaat pelasivat, vaan sen sijaan maltillinen pelaaminen oli avainsana. Enemmän pelaavien englannin arvosanojen keskiarvo oli kuitenkin parempi kuin vähemmän pelaavien, eli jonkinlainen positiivinen yhteys pelaamiseen oli arvosanojenkin osalta. Pelien ja kielitaidon yhteys on siis syytä ottaa huomioon jatkossakin, niin opetusta kuin tulevia tutkimuksia suunniteltaessa.</p>	
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# TABLE OF CONTENTS

<b>1 INTRODUCTION.....</b>	<b>3</b>
<b>2 DIGITAL GAMES AS EXTRAMURAL ENGLISH.....</b>	<b>4</b>
2.1 Digital games and extramural English.....	4
2.2 From learning a language formally to acquiring it via digital games .....	5
2.3 Connecting digital games and English skills in Finnish studies .....	6
<b>3 THE PRESENT STUDY .....</b>	<b>7</b>
3.1 Aim and Research Questions.....	7
3.2 Methods .....	8
3.2.1 <i>Participants</i> .....	8
3.2.2 <i>Data Collection</i> .....	9
<b>4 RESULTS AND DISCUSSION .....</b>	<b>11</b>
4.1 Gaming preferences and course grades .....	12
4.2 Perceived connection between gaming and English skills.....	15
4.3 Preferred gaming devices and their effect on language learning.....	18
4.4 Background factors .....	20
<b>5 CONCLUSION .....</b>	<b>21</b>
<b>BIBLIOGRAPHY.....</b>	<b>25</b>
<b>APPENDICES .....</b>	<b>27</b>
Appendix A: The questionnaire in Finnish .....	27
Appendix B: Abridged translations of the questions in English.....	34

## 1 INTRODUCTION

Digital games have developed quite significantly during the last few decades, from the simple white dots moving on a black screen to vast audiovisual worlds one can explore in movielike experiences. This development has brought some changes to the field of digital games. For instance, while games have spread into countless styles and devices, the userbase has expanded significantly and digital gaming has become a hobby for many. In fact, well over half the population in Finland plays digital games actively, with an ongoing increase in the number of players (Mäyrä, Karvinen, and Ermi 2016: 2).

Another significant change is of course the amount of language, for example English, a game can have within itself but also in the communication between gamers. Thus, digital gaming has become another extramural activity. Extramural English, a term coined by Sundqvist (2009), includes all kinds of activities where English is used outside of school in informal contexts, like watching movies, browsing the internet or discussing with a foreign friend. These can be valuable language learning opportunities, as previous studies have shown. For example, Uuskoski (2011) and Erkkilä (2017) have researched the connection between digital games and English learning among Finnish upper secondary school students, with encouraging results. With these positive findings, digital gaming as a growing pastime among young people, and the global role of English as a lingua franca, it is important to study this topic further.

The present study aims to join the earlier digital game studies by exploring an age group that has been left out before in Finnish research, primary school students. The focus is on finding out their digital gaming preferences and possible connections to the pupils' English skills, in addition to their perceptions of the usefulness of digital gaming in relation to language learning. These aspects will also be analyzed via the lens of different digital gaming devices. Due to the small scale of the study, the aim is not to produce statistically significant generalizations but rather to find valuable insight on the topic with young learners, for possible use by parents, teachers and future research.

The following chapter will introduce the key concepts used throughout this study, as well as offer some previous studies and their results as a background reference for the present study. Then, in chapter three, the aims and research questions of the present study will be explained in more detail, followed by the methodology chosen to support the aims. In the next chapter, the results of the study will be presented along with some discussion in relation to the research questions. Finally, the main findings and their validity will be summarized and discussed in comparison to the previous studies, in addition to a brief look at potential future research.

## **2 DIGITAL GAMES AS EXTRAMURAL ENGLISH**

In this chapter, the key terms digital games and extramural English will be introduced and explained in light of the present study. In addition to the effects of extramural English on language learning, theoretical background will also be offered on English language learning specifically in Finland. Introducing previous Finnish studies on the connection between digital games and language learning will complete the background overview.

### **2.1 Digital games and extramural English**

For the purposes of the present study, digital games are any games played through a digital screen, whether a television, mobile device, computer or a digital gaming console screen, by electronically controlling what is happening on the screen. The term digital game will be used instead of for example video game and computer game, because of its general nature regarding the device being used to play such games, as Erkkilä (2017: 13-15) notes. However, if needed, the terms console game, computer game and mobile game will be used to differentiate between the digital games played on different platforms: video game consoles, computers and mobile devices respectively.

Also an important concept for the present study is Extramural English, a term coined by Sundqvist (2009). It includes English language activities that are not part of the formal education inside the classroom, but rather something done in English outside of this setting.

For example, listening to a song in English, watching a movie, traveling to an English-speaking country or even just browsing through the internet. Of course, the extramural English activity that is the point of interest for the present study is playing digital games. These activities can be done to actively pursue English language competence, but very likely the English language skills learned from these activities are just a byproduct.

## **2.2 From learning a language formally to acquiring it via digital games**

Finnish students have, at least in theory, the option to choose among many foreign languages to start studying in primary school. However, most of them choose English (Perusopetuksen 1-6 luokkien A-kielivalinnat), one probable reason being its status as a global lingua franca. Even the Finnish national core curriculum (Perusopetuksen opetussuunnitelman perusteet 2014: 219) highlights its position as a global communication method and names it separately from other foreign languages.

Aside from English being a prominent part of education in Finland, its special role is also easy to spot in Finnish society, which encourages students with their studies. For example, while southern Europeans watch their American TV shows dubbed in the local languages, Finnish people have the privilege of both hearing the original English voices and reading the subtitles in Finnish. Thus, even in their daily lives, students are already more invested in English, doing all kinds of extramural activities with the language, especially in the internet. The importance of these learning situations happening outside of official education has been established for example by Sayer and Ban (2014), whose study in Mexico found that children having their own interests in pastimes utilising English made them more motivated to study the language in school, while those formal studies in turn gave them more tools to use English outside of school. Thus, increased motivation through a personal connection and goals attached to a language and learning it are important aspects and advantages in extramural learning. However, the kind of a motivational circle the situation causes makes it more difficult to track the original source of language proficiency. While a positive problem in practice, it adds a challenge to research in the field of extramural studies.

One of the extramural activities is digital gaming (Sylvén and Sundqvist 2012). Despite there also being digital games with the purpose of educating, the focus of the present study is on games in which learning a language is not the main point of interest. However, some students might see that as an important aspect, actively participating in the learning process, for example by using a dictionary as a guide while playing (Sayer and Ban 2014). There are of course a variety of digital games that require very differing amounts and styles of English comprehension and production skills. Nevertheless, most of them contain at least some English words or require reading English in some other form to access the games, and as such provide language learning opportunities. As a popular pastime with the percentage of active digital game players in Finland increasing from 52,5% in 2013 to 60,1% in 2015 (Mäyrä et al. 2016: 2), there is an incentive to look into the effects it has on language proficiency.

### **2.3 Connecting digital games and English skills in Finnish studies**

Such is the popularity of digital games and the interest towards their effects on language learning, that even in Finland, there is research about the connection between playing digital games and English skills. For example, Uuskoski (2011) conducted a study with a questionnaire among 495 upper secondary school students, which found a statistically significant positive correlation between playing digital games and English course grades. According to the study, those who played more, had better academic success in English. A clear difference was also found between the proficiency of girls and boys, which could be explained with both boys playing more than girls, as well as them gearing towards different digital game genres. The study mentions for example role-playing games and MMO (Massively Multiplayer Online) having a positive correlation with English skills, likely because of the text-heavy nature as well as the self-produced communicative side of these kinds of digital games.

A similar study by Erkkilä (2017) studied 779 mostly upper secondary school students' perceptions of digital games affecting their language skills via an online questionnaire, concluding that many found the hobby helpful in this regard. The overall results were in

line with Uuskoski's (2011) study, with a greater focus on personal experiences. Again, boys seemed to generally play and thus acquire more English than girls, with an even greater emphasis on the game genres affecting these results. In addition, vocabulary seemed to be the part of language that most benefited from gaming, although other areas were improved as well. The results are not overly surprising as similar personal experiences and opinions also played a role in creating the idea and interest for the present study. In fact, both previous studies end with a notion that more research in the field is needed.

However, where studies have been made among both upper and lower secondary school students, primary school seems to be uncharted territory in Finland, which is why the aim is to shed more light in that direction with the present study. Young learners can also offer valuable insight to an age group, whose possible gaming habits have formed more recently, and who are still maybe not as invested in various extramural English activities, as for example secondary school students could be. In addition, with the rapid increase of mobile devices (Suomen virallinen tilasto 2015: 2.1 Internetin käyttö matkapuhelimella) and the growth of mobile gaming market (Mäyrä et al. 2016: 3), it would be interesting to see how much do students spend time playing with the different devices (console, PC, mobile). The question is whether the effects of these different channels of digital gaming on English grades and perceptions of what has been learned differ.

### **3 THE PRESENT STUDY**

#### **3.1 Aim and Research Questions**

The aim of the present study is to get a better understanding of the connection between playing digital games and learning English, especially for younger learners. This knowledge can then also be taken into account by teachers and parents of young children in deciding if and when to let or recommend them to play digital games. However, as the present study cannot be a conclusive source of information on the matter, at the very least it can offer some extra knowledge in a changing environment and a relatively new field of study, to aid with



further research. As the gap that the present study aims to find answers to is especially young Finnish learners' digital gaming preferences and their connection to perceived English skills, the main research questions are as follows.

- 1) What kind of digital gaming preferences do Finnish primary school students have, and is this reflected somehow in the English course grades?
- 2) Do students themselves think there is a connection between their digital gaming and English skills?
- 3) What are the preferred devices (consoles, PC, mobile) for playing digital games among primary school students, and is there a difference in the language skills or thoughts about learning between the students with different device preferences?

While the first two research questions are the main focus of the study, the third question was also added because of the evolving digital gaming space. In fact, with the rise of smart devices, the digital gaming culture has also shifted in that direction. On one hand, some have possibly changed their gaming habits to prefer mobile devices, as they are usually at hand, do not require extra physical purchases of devices or games, and because of the quick and easy to play whenever and wherever nature of the digital games on those devices. On the other hand, there could be an increase in casual gamers who would not play otherwise, but now do as the devices and games are easily available and quick to learn. Thus, it was also interesting to see whether this phenomenon would be reflected in the young learners' answers, and if that kind of gaming culture could have an effect in the results of the present study.

## **3.2 Methods**

### **3.2.1 Participants**

Primary school students were chosen as an ideal target group for the present study, as they are still in their first years of English studies. This means that a gaming hobby, if started at

an early age, could be potentially seen in the results more clearly, than for students already in the higher levels of English education and possibly increased English activity outside of school. In addition, the target demographic have lived through their childhood in the digital age with the expanding smart phone market and the mobile gaming it offers. This was also an important aspect and a point of interest in the present study, to see whether there is a positive or negative connection to English skills, when compared to the more traditional digital gaming media.

Due to the small scale and time constraints of the present study, a manageable group of test subjects was chosen from a primary school in Western Finland. The target group consisted of 48 young learners from primary school, fourth to sixth grades, with 22 boys and 26 girls. The number of girls and boys was almost equal even within the separate age groups. The biggest gap was with fifth grade students, of whom there were five more girls compared to the total of seven boys. These grades were chosen among those in the primary school, firstly to be able to take the pupils' English grade into account in the analysis, as children in Finland do not receive numerically evaluated grades during their first years of formal education. The second reason was to have a group who already have some experience in formal English education and have had a good chance to play digital games in their lives and even form a hobby in the extramural activity. After all, the connection between these two was the main point of interest, so the pupils needed to have had sufficient time to experience both as well as be able to properly reflect on their own experiences and thoughts regarding any connection there might be between digital gaming and English skills.

### **3.2.2 Data Collection**

The method of collecting data was a questionnaire (see Appendix A), consisting mostly of multiple-choice questions, handed to the pupils on a paper during a normal school lesson. The students then filled out the questionnaire without a time limit but within the lesson, in the presence of the researcher, a choice made so that those filling the questionnaire could have ample time to finish answering and ask for any clarifications regarding the questions.

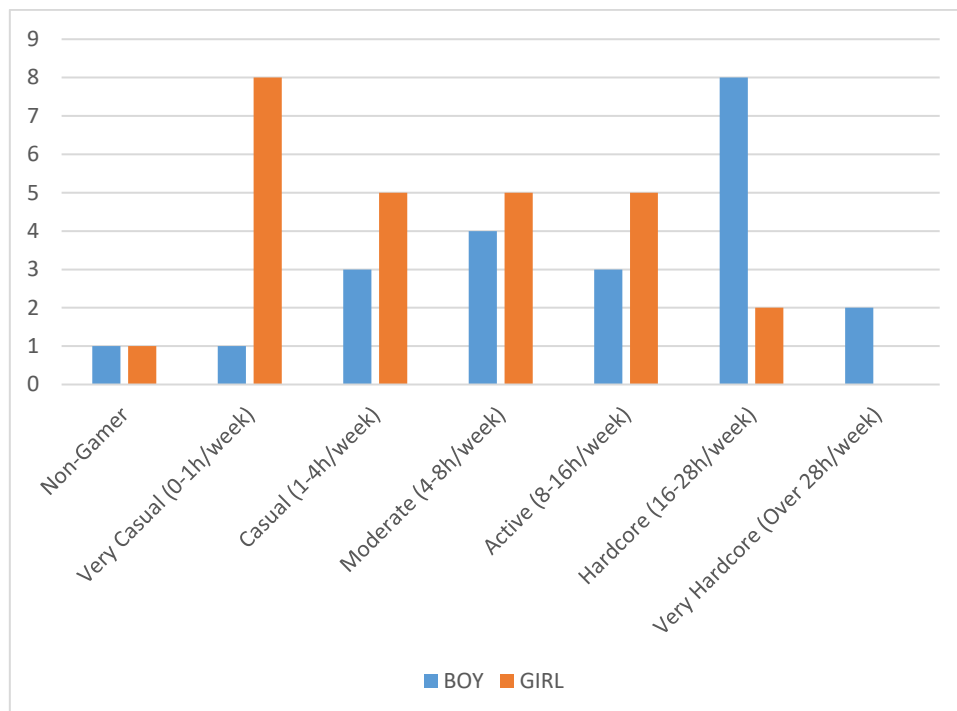
The questions within the questionnaire were chosen from those in the questionnaires used by Uuskoski (2011: 63-69) and Erkkilä (2017: 96-104), and modified to fit the particular age group and research questions, while some new ones were also added to accompany a new point of view in the research questions.

The questionnaire consisted of 17 questions on seven pages, although some of the questions were aimed only at those who had experience in digital gaming while others were meant only for the ones who did not play digital games at all. On the first pages of the questionnaire, in addition to basic background information, the students were asked to report their previous English grade as well as the time and devices they use to play digital games. The answers to these questions were essential in analyzing the findings for research questions one and three. To get analyzable material for the second research question, the questionnaire also included questions about the pupils' own perceptions on formal and informal language learning and their connection. In addition, the students could freely describe the possible learning outcomes of playing digital games in their own experience. Other extramural English activities were also considered in the questionnaire and analysis.

This method was chosen to get a good amount of easily analyzable quantitative data (Kalaja, Alanen and Dufva 2011: 160) for a rough general idea of the connections and comparisons mentioned in the research questions. While it was clear from the beginning that statistically significant generalizations would not be possible due to the nature of the small scale study, nevertheless being able to see a general trend among young learners and comparing it to the earlier statistically significant results among secondary school students motivated the present study. Via statistical analysis, the aim was to find, if any, connections between gaming preferences (how much, mostly on which digital gaming devices, what kind of games etc. does the target group generally play digital games) and English course grades, as well as perceived learning outcomes.

## 4 RESULTS AND DISCUSSION

Within the participants, the number of boys and girls being almost equal helped in having a more balanced study group, as stereotypically boys have been seen as more likely to play digital games, a claim that is starting to fade (Erkkilä 2017: 22). This fact was apparent from these results as well (Figure 1), as even though boys were more likely to play more, both sexes still had a range of non-gamers and gamers within them.



**Figure 1 - Weekly playtime estimates between boys and girls**

For those that played digital games, rough estimates for weekly playtimes in hours were created by combining answers in questions four and five (see Appendix A and B), asking the pupils' gaming sessions' frequency and length, respectively. With these estimates, it was possible to categorize the participants to 'Non-Gamers', 'Very Casual Gamers' (0-1 hours a week), 'Casual Gamers' (1-4 hours a week), 'Moderate Gamers' (4-8 hours a week), 'Active Gamers' (8-16 hours a week), 'Hardcore Gamers' (16-28 hours a week), and 'Very Hardcore Gamers' (over 28 hours a week). This categorization was created for the purposes of the present study to get a general understanding of how much the students played on a weekly

basis, and to use these estimates in the analysis. Overall, there was a good number of respondents in all the categories, with the exception of the extreme ends of the spectrum, 'Non-Gamer' and 'Very Hardcore Gamer', having only two respondents each. The number of pupils in all the other categories ranged between eight and ten, with 'Hardcore Gamer' being the largest category, so the group seemed to be quite diverse in their gaming habits.

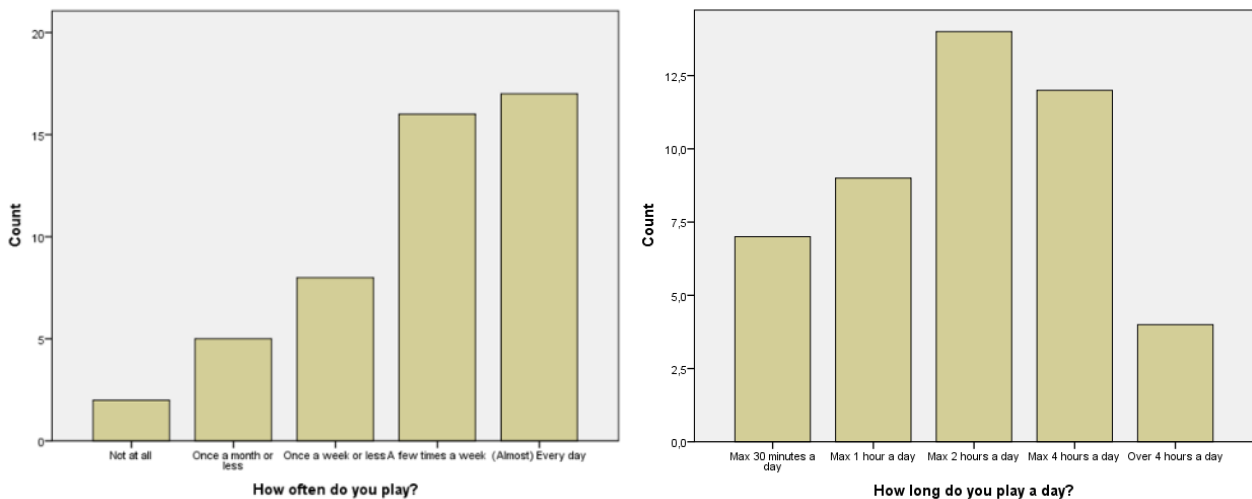
Finally, as one point of interest for the study were the students' previous English grades, those were of course part of the questionnaire. However, whereas for fifth and sixth grade pupils that was possible, those on the fourth grade would receive their first numerical English evaluation only after the current semester had ended, and it was therefore not possible to get their answers on that question. Otherwise, excluding some of the open-ended questions, most participants answered all the questions aimed at them, although the questions directed at non-gamers did get some extra answers from gamers.

Next, the results shall be discussed with each separate section focusing on one of the three research questions, in conjunction with the appropriate questionnaire items. After that, discussion of background factors will take place.

#### **4.1 Gaming preferences and course grades**

The widespread popularity of digital gaming has been noted before for example by Mäyrä et al. (2016: 2) and this phenomenon can be seen clearly in these results as well. Only two students among the 48 respondents had not played any digital games, and a further three of the gamers claimed to not play digital games that have English language within them, although that number did not seem quite right when looking at the games they played. Thus, as can be seen in Figure 2, almost everyone had at least some experience with digital games. Moreover, the number of answers was bigger than the last in every option with a more frequent gaming pattern, making the option with the greatest gaming frequency also the most popular choice among respondents. The same pattern did not repeat with the amount

of time per play session, however, as seen in Figure 3. The length of play sessions seemed to be more normally distributed, with the shortest and longest play sessions having the least respondents. Last, when these two statistics were combined to categorize the students into groups according to their estimated play time per week, a new pattern emerged. In Figure 1, apart from the 'Non-Gamer' and 'Very Hardcore Gamer' groups having the least members, the other groups ranging from 'Very Casual Gamer' to 'Hardcore Gamer' all had roughly the same number of members. With a distribution like this, it was easier to compare the groups to each other for analysis.



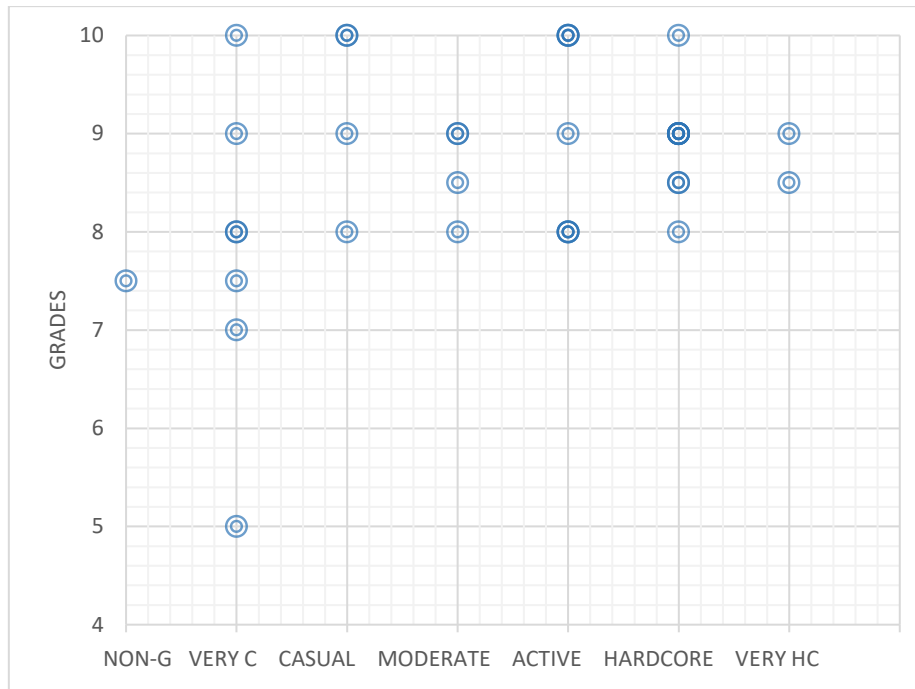
**Figure 2 and Figure 3 - Digital gaming habits**

Of course, the most interesting point to analyse in the first research question is the possible connection between grades and gaming preferences. Regrettably it was not possible to take all the answers into account in this regard, as the youngest respondents did not yet have a numerical evaluation, but in the very least the fifth and sixth graders' answers shall provide some insights. Interestingly but understandably those in the fourth grade also played less digital games overall, with two of the 12 respondents not playing English language games or any games at all, so the possible connection might have been more difficult to see on their part, as well. In any case, the grades provided by the students of fifth and sixth grades proved to be impressive overall, with only one student having a grade of five and others having at least seven, most eight or over, as shown in Table 1.

**Table 1 - English course grades**

		Students	Percent	Grade Percent
Evaluated	5,0	1	2,1	2,9
5th and	7,0	1	2,1	2,9
6th grade	7,5	2	4,2	5,7
students	8,0	8	16,7	22,9
	8,5	4	8,3	11,4
	9,0	12	25,0	34,3
	10,0	7	14,6	20,0
	Total	35	72,9	100,0
	4th grade students	13	27,1	
	Total participants	48	100,0	

Even with a relatively small study group, some comparisons and connections could be made and seen. First, all four students who had a grade below eight, were from groups 'Non-Gamer', 'Very Casual Gamer' or 'Casual Gamer', in other words played almost no digital games at all. Second, despite students with grades between nine and ten being found in all of the gamer groups other than 'Non-Gamer', only five out of these 19 respondents played less than four hours a week ('Very Casual / Casual Gamer'), whereas others played more, with almost half of them, i.e. eight pupils from groups 'Very Hardcore / Hardcore Gamer'. Third, on one hand as already seen in Figure 1, while boys tended to be more on the 'Hardcore Gamer' side of the spectrum, they did not receive as many grade 10 results as girls who generally were more on the 'Casual Gamer' side. On the other hand, the only four participants having a grade of under eight happened to be girls. Figure 4 shows the frequency of English course grades between different gaming groups, with a darker circle denoting a higher frequency.



**Figure 4 - Frequency of English grades between gaming groups**

As a conclusion, despite there being a clear connection with sex and how much a respondent generally played digital games, this connection did not carry over as much to the grades, at least for the grade 10 range. Rather, those playing either casually or actively seemed to fare best in this regard, as both extreme ends, i.e. those playing excessively and those with the least experience were least likely to get a grade 10. Thus, a moderate amount of gaming seems to be connected to the best grades among these respondents. However, while 'Very Casual Gamers' had the lowest grades overall, 'Hardcore Gamers' scored grade 9 most consistently, so even though playing a lot might not result in a perfect score, the results are nevertheless good, especially when compared to those with the least gaming experience.

#### **4.2 Perceived connection between gaming and English skills**

Even though without an actual language skill test it would be difficult to compare the concrete English skill levels of the pupils and see the results of playing digital games that way, it was a valuable insight to ask whether the students themselves saw games as something that affected their school work, and vice versa. After all, the aim of the present



study was to find out if there is any connection between the two, and if the students themselves realize the possible benefits from either source. The results shall be discussed via four points of view, the first being digital games' effect to school English, the second concentrating on the effect to outside of school use, with the third being formal English learning environment's effect to digital games and finally the focus will be on the actual learning outcomes as realized by the students.

First, among those 43 respondents who played digital games, only one of them thought that their English skills had not improved at all through playing, and that the games did not have any positive impact to English lessons at school. However, the negative views of this participant could be explained by the fact that their time spent with digital games was minimal ('Very Casual Gamer') and that their English grade was the lowest among the respondents. Therefore, without greater amount of experience in gaming as well as not having an overall feeling of success in the English lessons, this was not too surprising an outcome.

All the other students answered that digital games had increased their English skills at least a little. When asked if this had helped them during English lessons, the situation was quite similar, although in that case, the impact was seen as slightly less than with overall language development. When inquired about their views on motivation to study English at school, the number of students that saw digital games as helpful in that regard decreased, five of them not seeing a connection between the two. In any case, the majority still saw at least a slight increase of motivation to study English at school because of digital games. As for those who had no experience themselves of digital games, or only played non-English games, still all believed digital games would be at least slightly helpful in learning English.

Second, the positive impact of the English skills developed via digital games was overall seen more in extramural use rather than in the school environment. While the same number of respondents thought that they were not more motivated to study English outside of

school because of digital games, the number of respondents who saw a great boost in motivation was double the number of those who saw the same boost in school motivation. In addition, the number of those seeing digital game based English learning to be a great aid in extramural English use was more than those who saw the helpfulness in classroom use.

One possible explanation for this difference could be the content, for example vocabulary of digital games, differing from the content of English lessons in a way that it is simply not helpful, whereas in other media and daily life the same kind of content is more prominent. It is also possible that for the students, because of a drastically different environment and context of use in school, the level of helpfulness of language learning based on digital games might be more difficult to accurately realize, even if it exists. However, as the numbers have shown, the students were not oblivious to at least some extent of language aid from digital games, both in school and out of school contexts.

Third, the effects of formal English education on digital gaming habits were also inquired. While most of the gaming respondents seemed to think their English skills were improved upon playing digital games, all of them agreed that English learnt at school was at least partially helpful while playing. However, this did not translate into motivation to play digital games. Rather, the idea of playing seemed to come from somewhere else, even though learning English at school probably gave the students a better reason and tools to play. Thus, with English learned at school being especially helpful while playing digital games, and the games giving motivation to study more English at school, there seems to be a positive symbiosis between the two.

Finally, the students were also given the option of providing their view on which language skills had improved via digital games. By far the most mentioned learning outcome was some form of vocabulary acquisition with 23 out of 43 stating that. This is not surprising as it is one of the more tangible areas within a language to realize the learning of. However, it

is possible that this great number of respondents is slightly skewed as it was also the example given to students if someone asked about the meaning of the question. The next most common answer, communication, had five responses. All the pupils who had that answer, mentioned at least the game Fortnite as a game that has helped develop their English skills via online communication. This is an important point that reflects earlier findings that the communicative nature of many online multiplayer can be a significant factor in one's language development. Other answers included pronunciation, grammar and culture knowledge, although these kinds of answers were not common, receiving only one or two mentions. Interestingly, most of the respondents who left this question blank were girls, whereas a specialty only written by boys was speech skills, i.e. communication and pronunciation. Naturally, girls' lower interest in digital gaming could explain the first point in question, while the longer play times and specific gaming interests of boys in the form of communicative online games can be found in conjunction with these answers.

All in all, in broad terms the respondents seemed to agree that there indeed is a connection between English learnt from digital games and other English use. As a positive sign, the skills learnt at school seemed to be important while playing digital games at home, whereas these kinds of habits helped with motivation to study at school in turn. The positive effects of gaming were generally more prominent in boys' answers, who also had the tendency to play more. While a bias cannot be ruled out, the opinions cannot be dismissed, either. After all, a personal view on the topic was important in the present study, and those with a better understanding of the topic at hand, i.e. digital games and language learning, have a valid opinion on that.

### **4.3 Preferred gaming devices and their effect on language learning**

The overall results show that in this study group, the dedicated game consoles, for example PlayStation 4, Xbox One and Nintendo Switch, are still the most popular means of digital gaming, with 23 respondents out of 46 choosing those as the platform most often used for digital gaming. However, mobile devices were the second most popular option with 20

responses. Out of the three options, computers were clearly the least used digital gaming devices, as only four students chose that as their main way of gaming. The number of pupils not playing at all with computers was also quite high with 11 responses, when compared to the respective five and three responses in the other two categories. To not disregard any other possible digital gaming options, the participants also had an option to mention any other devices they use. However, that option was not used, so it is quite safe to say these three categories were enough to chart the gaming device usage.

Some connections could be seen between the preferred gaming devices and course grades as well as the views on the usefulness of digital gaming regarding English learning. Those pupils whose course grade was 10, tended to play more on mobile devices, whereas those with grade nine preferred game consoles, with grade eight receiving students distributed more evenly between the groups. In contrast, among console gamers there was a high tendency to think that digital games have improved their English skills, whereas mobile gamers had opposite tendencies in their ways of thinking. These results are not too surprising, considering that game consoles were favoured by those who tended to play more, whereas the first choice for the more casual gamers was mobile devices, as expected because of the availability of the devices and easy usability. The console gamers' views on the topic are understandable, because if digital gaming is a larger part of one's life, it will most likely affect other areas in one's life in turn, although there certainly could also be a bias to see the effects in a more positive light.

Although computers seem to have lost screen time for mobile devices in young learners' hands, at least regarding digital gaming, they did not lose in usefulness. In fact, those who played the most on computer, also were the most inclined to think that the skills obtained from digital gaming sessions were helpful both in and outside of school. This could be explained in part by the socially connected nature of computer gaming, as there are many online multiplayer games where the players discuss with one another via text or speech, and where English often functions as a lingua franca. This has been discussed for example

by Erkkilä (2017) as well. Thus, the communicative language use learned is bound to help in actual everyday language use situations.

To conclude the discussion in this topic, there seems to be a connection between mobile devices, more casual gaming habits and a lower level of language acquisition from digital games, when compared to game consoles and computers. This is understandable, as the most popular mobile games are usually quite light in language use and encourage short bursts of gaming. The preference of mobile devices or game consoles is also connected to girls and boys, respectively. This can help explain in part why the first group has higher grades while the other group has a more positive view of the benefits of digital gaming. As girls have traditionally fared better in school (Sundqvist 2009: 20), they might be more likely to get good grades because of internal factors and thus not feel the benefit of digital games as strongly as boys, or even not have a need for an external learning source. However, the pupils who got the weakest grades in this study group also happened to be girls who preferred casual gaming on mobile devices or none at all, so there really seems to be a connection between preferred gaming devices and their effect on language learning, even if the causality might be more difficult to determine.

#### **4.4 Background factors**

To take into account the background factors of the respondents, at least the native language or residential history in an English-speaking country were not factors in the linguistic success of students. In other words, everyone mentioned Finnish as their native language and stays in English-speaking countries were either short in nature or non-existent. Generally, other extramural English activities seemed to an extent coincide with digital gaming habits and better English grades, so it is not possible to exactly pinpoint the source of language learning. However, the present study did not seek to find out the causal relationship between digital games and English skills, but rather a connection, if one exists. Thus, the results cannot be disregarded because of these background factors.

## 5 CONCLUSION

The aim of the present study was to find out whether digital games are seen as a helpful tool in language learning. This was achieved with a questionnaire given out to primary school students in a school located in the Western Finland. The study group was chosen because of their young age and early stages of formal English education. The point was to understand young learners' opinions on the matter, as they are a less researched group within the Finnish field, as well as at an ideal stage regarding the research questions at hand.

Due to the resource limitations within this small-scale study, the study group was quite small and not chosen by random. Instead, it was limited to three classes and age groups of students from the same school. Thus, statistically significant generalizations are not possible with this amount of quantitative data. However, the results show clear general tendencies, which should be taken into account when considering the importance of extramural English learning and future studies on the topic.

There were three research questions the study aimed to find answers to, the main findings of which will be summarised here. The first research question aimed to find out whether a connection between digital gaming preferences and course grades exists. The results showed that the best course grades were generally awarded to those who play moderately, while those who tended to play the least also generally scored the lowest grades. In other words, playing excessively did not result in the best evaluations but even so their results were better than those of the inexperienced gamers. The second research question delved into the students' own opinions on digital games' usefulness in language learning. Aside from only one student, all the respondents attributed at least some usefulness to digital games as a medium to learn English from. In addition, those with the tendency to play more also had overall more positive views on this connection. When asked about specific areas of language development, vocabulary was the most prominent answer, but communication skills also received a few answers with a game called Fortnite found to be helpful in all these answers. The third and the last research question concentrated on the usage preferences of

different digital gaming platforms and their effect on the earlier points of interest. While dedicated digital gaming consoles were the most popular option, the use of mobile devices coincided with more casual gaming habits. Thus, in connection to the earlier findings, students preferring consoles also had a more positive view of their gaming affecting their English skills, even though they did not as often score the best grades. However, out of those evaluated, console gamers' average grade was 8,77 whereas the average grade was a slightly lower 8,5 for mobile gamers.

With these results it seems, then, that generally those who play more digital games, tend to be boys and prefer console games, and their view on the positive effects are higher while they also score good grades more consistently. In contrast, the casual gamers, who are more often girls, tend to prefer mobile gaming, and while some of them have higher grades, the group is more likely to also consist of lower grading students. Of course, these are only rough generalizations made from a small group, but nevertheless the tendencies are interesting to consider. The general conclusion to the analysis is that students think digital games and language learning have a positive connection, and there is also a connection with playing digital games moderately rather than casually and the likelihood of a good English grade. However, playing more does not seem to have such a negative impact either, in these regards.

These results have similarities to the previous studies conducted by both Uuskoski (2011) and Erkkilä (2017). Like with their studies, a positive attitude toward the usefulness of digital games for language learning was clear. In addition, boys seemed to dedicate more time to digital gaming. Slightly similarly, boys also had a more consistent, better average grade when compared to girls, with averages 8,8 and 8,5, respectively. Although this could partly be explained by digital gaming habits, the difference in the present study was that playing more did not automatically result in better grades. Even so, it is an important observation that even though these earlier studies concentrated on upper secondary school students, the results received from quite a different, younger study group do not greatly contradict the earlier research findings.

Although the present study had fruitful results and seemed to reflect the findings of the previous studies on the field, it was not without its difficulties and practical issues that could be improved upon. For example, the inexperience in creating questionnaires and using statistical analysis programs caused the process of inputting and analysing the results of the study to take more time than expected. In addition, the use of a questionnaire on a paper made it possible for some answers to not be entirely usable or accurate because of a respondent misunderstanding a question or the structure of the questionnaire. Fortunately, some confusion could be avoided because the researcher was present to answer any possible questions. Interestingly, one frequently asked question was about the meaning of the word “mother tongue”.

Of course, the young age of the study group can be an explaining factor to some extent in the previously mentioned issues, as it does also create at least one unique factor to consider. The answers might not reflect entirely the actual opinions of children (Aro 2003: 281), as they might prefer to answer a question rather than ask for a clarification even if they are not sure of a meaning, or the questions might direct their thoughts in a certain way if they have not formulated their opinions on the matter previously. In any case, the answers provide a window to their thinking processes at one point in time, and do not have a completely random pattern, and as such are still valid results.

The results of the present study will hopefully be helpful for parents and teachers when considering the ways in which their children and students interact with digital games. With these results it is safe to encourage at least a moderate level of gaming, as it seems to reflect positively in their attitudes and motivation towards English language learning. Although the causality is not clear, a positive connection exists also with their English grades. Of course, this connection should be studied further in future research, as digital gaming is an important part of the lives of many young people. One possible area that future studies could concentrate on are young learners at a greater scale. In addition, with the present study those who played the most were not always the best with their grades, so effort could be made to see if there are any problematic sides to playing excessively. As



the positive implications are clear as seen in the present study and the earlier studies, the negative side effects should not be forgotten in this field of research either.

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## APPENDICES

### Appendix A: The questionnaire in Finnish

Täyttämällä kyselyn suostut siihen, että vastauksiasi käytetään tutkimuksessa. Tämä ei ole koe, enkä minä, opettaja, vanhempasi tai kukaan muukaan tiedä kuka on vastannut mitään, joten vastaathan rehellisesti. Näin tutkimuskin onnistuu paremmin. Kiitos!

#### 1. Oletko tyttö vai poika?

- Tyttö
- Poika

#### 2. Kuinka vanha olet?

\_\_\_\_-vuotias

#### 3. Mikä oli viimeisin englannin numero todistuksessasi?

\_\_\_\_\_

Seuraavissa kysymyksissä digitaalinen peli tarkoittaa kaikkia videopelejä, tietokonepelejä ja mobiilipelejä, eli pelejä joita pelaat joko pelikonsolilla TV:n kautta tai käsikonsolilla, tietokoneella, puhelimella, tabletilla tai muulla vastaavalla digitaalisella laitteella. Esimerkiksi lautapelit ja korttipelit eivät siis ole digitaalisia pelejä.

#### 4. Kuinka usein YLEENSÄ pelaat digitaalisia pelejä?

- Pelaaan joka päivä tai lähes joka päivä
- Pelaaan useita kertoja viikossa
- Pelaaan kerran viikossa tai harvemmin
- Pelaaan kerran kuukaudessa tai harvemmin
- En pelaa ollenkaan digitaalisia pelejä (jos valitsit tämän, voit mennä suoraan kysymykseen 13)

**5. Kun pelaat digitaalisia pelejä, kuinka kauan YLEENSÄ pelaat saman päivän aikana?**

- Enintään puoli tuntia
- Enintään tunnin
- Enintään kaksi tuntia
- Enintään neljä tuntia
- Kauemmin kuin neljä tuntia

**6. Rastita ruudukkoon eri laitteet siihen järjestykseen, millä pelaat eniten, kun pelaat. Jos pelaat kahdella laitteella suunnilleen yhtä paljon, voit laittaa rastin samaan kohtaan toisen laitteen kanssa. Muista rastittaa myös ne laitteet, joilla et pelaa yhtään tai vain hyvin vähän.**

	Pelaan näillä laitteilla eniten	Pelaan näillä laitteilla toiseksi eniten	Pelaan näillä laitteilla kolmanneksi eniten	Pelaan näillä laitteilla vain ihan vähän	En pelaa näillä laitteilla yhtään
<b>Pelikonsolit</b> (esimerkiksi PlayStation 4, Nintendo Switch, Xbox One, Nintendo 3DS, PlayStation Vita, Nintendo Wii yms.)					
<b>Tietokoneet</b> (pöytäkoneet ja kannettavat tietokoneet)					
<b>Mobiililaitteet</b> (puhelimet ja tabletit)					
Jokin muu, mikä?					

**7. Minkälaisia digitaalisia pelejä pelaat eniten? Voit valita useamman.**

- Massiivimoninpelejä** (World of Warcraft, RuneScape, Club Penguin yms.)
- Urheilu- ja autopelejä** (NHL, Rocket League, Mario Kart yms.)
- Roolipelejä** (Skyrim, Final Fantasy, Dark Souls yms.)
- Strategiapelejä** (Civilization, Age of Empires, Fire Emblem yms.)
- Räiskintäpelejä** (Call of Duty, Overwatch, PlayerUnknown's Battlegrounds yms.)
- Tasohyppelypelejä** (Super Mario, Sonic, Crash Bandicoot yms.)
- Pulmapelejä** (Tetris, Angry Birds, Candy Crush yms.)
- Taisteluareenamoninpelejä** (Heroes of the Storm, League of Legends, Dota yms.)
- Toimintaseikkailupelejä** (The Legend of Zelda, Assassin's Creed, Uncharted yms.)
- Rakentelu- ja elämäsimulaatiopelejä** (The Sims, SimCity, Animal Crossing yms.)
- Musiikkipelejä** (Guitar Hero, SingStar, Just Dance yms.)
- En osaa sanoa, tai muu tyyllilaji (listaa pelien tai tyyllilajien nimiä):

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**8. Kerro 3 digitaalista peliä, joita pelaat tai olet pelannut eniten. Jos et muista pelaamiesi pelien nimiä, voit kuvailla niitä muulla tavoin. Jos et ole pelannut yli kolmea peliä, kerro kaikki mitä olet pelannut.**

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**9. Esiintyykö pelaamissasi digitaalisissa peleissä englannin kieltä tai käytätkö englannin kieltä pelatessasi? Voit vastata 'kyllä' myös, jos itse käytät esimerkiksi pelin chat-ominaisuuksia englanniksi kirjoittaen/puhuen, vaikka pelissä ei muuten olisi englannin kieltä.**

- Kyllä
- Ei (jos valitsit tämän, voit mennä suoraan kysymykseen 13)

**10. Se, että pelaa digitaalisia pelejä englanniksi, saattaa auttaa englannin tunneilla koulussa ja englannin käyttämisessä muissakin tilanteissa. Mieti, oletko huomannut itse asian pelattuasi. Rastita taulukkoon jokaisen kysymyksen kohdalla se vaihtoehto, joka mielestäsi parhaiten vastaa kokemuksiasi.**

	Paljon	Jonkin verran	Vähän	Ei ollenkaan
Koetko, että digitaalisten pelien pelaaminen on kehittänyt englannin kielen taitojasi?				
Onko digitaalisissa peleissä oppimistasi englannin taidoista ollut sinulle hyötyä koulussa englannin tunneilla?				
Onko digitaalisten pelien pelaaminen antanut sinulle intoa opiskella englantia koulussa?				
Onko digitaalisten pelien pelaaminen innostanut sinua oppimaan englantia koulun ulkopuolella?				
Onko digitaalisista peleistä oppimistasi englannin taidoista ollut sinulle hyötyä muualla kuin koulussa tai pelatessasi? Esimerkiksi kotona, vapaa-ajalla, matkoilla, internetissä.				
Ovatko koulun englannin tunneilla oppimasi asiat auttaneet sinua digitaalisia pelejä pelatessasi?				
Ovatko koulun englannin tunneilla oppimasi asiat innostaneet sinua pelaamaan digitaalisia pelejä?				

**11. Onko yksi tai useampi digitaalinen peli ollut mielestäsi erityisen hyödyllinen englannin oppimisen väline? Jos on, kerro sen tai useamman pelin nimet tässä.**

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**12. Millaisia englannin kieleen liittyviä asioita olet mielestäsi oppinut tai missä olet kehittynyt pelatessasi digitaalisia pelejä englanniksi? Kirjoita vapaasti.**

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**Voit nyt mennä suoraan kysymykseen 15 (kysymykset 13 ja 14 koskevat vain heitä, jotka eivät ole pelanneet englanninkielisiä digitaalisia pelejä)**



**13. Kuinka paljon uskot englanninkielisistä digitaalisista peleistä olevan hyötyä kielen oppimisessa?**

- Paljon
- Jonkin verran
- Vähän
- Ei ollenkaan (jos valitsit tämän, voit mennä suoraan kysymykseen 15)

**14. Kerro, millaisia englannin kieleen liittyviä asioita uskot pelaajien oppivan tai missä uskot heidän kehittyvän kun he pelaavat digitaalisia pelejä englanniksi? Kirjoita vapaasti.**

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**15. Mikä/Mitkä on äidinkielesi?**

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**16. Kuinka pitkään olet YHTEENSÄ asunut tai oleskellut (esimerkiksi lomamatkalla) englanninkielisissä maissa (esim. Kanada, Australia, Iso-Britannia)?**

- En yhtään
- Alle kuukauden
- 1-3 kuukautta
- 3-12 kuukautta
- Yli 12 kuukautta

**17. Missä tilanteissa kohtaat englantia koulun ulkopuolella ja kuinka usein? Rastita taulukkoon.**

	Joka päivä tai lähes joka päivä	Useita kertoja viikossa	Kerran viikossa tai harvemmin	Kerran kuukaudessa tai harvemmin	En ollenkaan
Katson englanninkielisiä elokuvia, sarjoja, videoita yms.					
Katson englanninkielisiä elokuvia, sarjoja, videoita yms. <b>englanninkielisillä tekstityksillä tai ilman tekstitystä</b>					
Kuuntelen englanninkielistä musiikkia					
Luen englanninkielisiä kirjoja, lehtiä yms.					
Puhun englantia ystävän, sukulaisen tai jonkun muun kanssa					
Viestittelen englanninkielisillä keskustelufoorumeilla, chateissa tai muualla					
Selaan englanninkielisiä internet-sivustoja					
Teen jotain muuta englanniksi. Kirjoita alle mitä.					

**Kiitos paljon vastauksistasi! Jos olet jo valmis, voit vapaasti piirrellä tai kirjoittaa muita terveisiä tähän tai paperin toiselle puolelle. Piirrä tai kerro vaikka lempipeleistäsi :)**

## Appendix B: Abridged translations of the questions in English

(Questions for everyone)

1. Sex
2. Age
3. Previous English course grade
4. How often do you usually play digital games?

(Questions for Gamers)

5. For how long do you usually play digital games?
6. With which devices are you most and least likely to play digital games?
7. What are your preferred digital game genres?
8. What are the names of the 3 digital games you play the most?
9. Do the digital games you play include English or do you use English while playing?

(Questions for Gamers who encounter English while playing digital games)

10. A) Has playing digital games developed your English skills?  
 B) Have the English skills learned from digital games helped you at school?  
 C) Has playing digital games motivated you to study English at school?  
 D) Has playing digital games motivated you to study English outside of school?  
 E) Have the English skills learned from digital games helped you outside of school?  
 F) Have the English skills learned at school helped you in digital games?  
 G) Have the English skills learned at school motivated you to play digital games?
11. Have you found specific digital games to be helpful in learning English?
12. What kinds of English skills have you developed while playing digital games?

(Questions for Non-Gamers and Gamers who do not encounter English while playing digital games)

13. How helpful do you think digital games are for language learning?
14. What kinds of language skills do you think digital games develop?

(Questions for everyone)

15. What is your mother tongue?

16. For how long have you stayed in English speaking countries?

17. In what kinds of situations do you encounter English outside of school?