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**Degree Project in English Studies and Education**  
15 Credits, Advanced Level

**Digital gaming as an extramural English activity**

A study regarding gaming habits and the impact of playing digital games in English on Swedish third graders' English vocabulary

*Digitalt spelande som en extramural engelsk aktivitet*  
*En studie om spelvanor och effekter av att spela digitala spel på engelska sett i*  
*svenska årskurs tre elevers engelskvokabulär*

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## **Abstract**

Any activities where English can be encountered in outside of school, have been labeled by Sundqvist (2009) as “extramural English activities”. One of these activities is playing games (both digital and board games), which in accordance to the research by Sundqvist (2009) and Sundqvist and Sylvén (2012) has a great impact on the learner’s English proficiency. In accordance to these prior findings, the focus of this degree project is on the gaming habits of year three students in Swedish elementary school. After presenting a theoretical background and key elements from earlier research, I examine to what extent the students play digital games, what type of games are played and most importantly; do students in year three play digital games in English? Further on, I investigate the student’s vocabulary proficiency and connect the two parts of my research together, searching for correlations between time spent gaming and vocabulary depth. This degree project also includes a gender aspect and compares gaming habits and vocabulary proficiency of girls and boys, along with interviews with four teachers and their perception on students’ participation in extramural activities and English motivation.

Key words: Extramural English, L2 acquisition, L2 development, foreign language learning motivation, CLIL, vocabulary development, implicit and explicit learning, young language learners, receptive and productive vocabulary, gaming habits, gender differences in gaming

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## **Abbreviation list**

L1 – first language

L2 – second language

EE – extramural English

SLA – second language acquisition

CLIL – Content and language integrated learning

# **1. Introduction**

For this degree project I have chosen to focus on extramural English and its impact on students' English proficiency. My research is conducted with a specific focus on gaming and vocabulary. I have chosen this field of research as I find it a very interesting and up-to-date. In today's Swedish society English can be found almost everywhere: on TV, in stores, in games etc. Therefore, children encounter and intercept English at an earlier age than ever before. As English is used in many media around us, many activities outside school involve English, leading to an unconscious English acquisition. Extramural English has both positive and negative effects on how English education is perceived by the students in school and I believe that this field of research is highly relevant for teachers of English, not only in the higher grades, but even in elementary school.

## **1.2. Aim and Research Questions**

In this degree project, I will investigate the term extramural English and examine how it intertwines with general L2 acquisition and its effects on a learner's language attitude and motivation. In my own research the connection between extramural English and how it affects the students' English proficiency is examined – with a particular focus on playing digital games in English and the development of English vocabulary.

My work is founded on three main research questions:

1. How does playing digital games in English impact students English vocabulary?
2. What is the relationship between the time spent playing digital games and English vocabulary?
3. Are there any notable gender differences in time spent playing digital games, games genre and vocabulary proficiency?

## **1.3. Research methods**

Inspired by earlier research by Sundqvist and Sylvén (2016), I will combine qualitative and quantitative research approaches in my degree project. To be able to do this I will conduct my research in three schools, located in different types of environments. One school is in a medium-sized town, one is in a suburb of a bigger town and one is in a small town. Typically, there are one or two grade three classes in each school, with an approximate estimate of 25 students per class. My research was done in four different grade three classes and a total of 101 students and four teachers participated.

To have both the qualitative and quantitative methods represented in my research I chose to use following methods:

1. Questionnaires – for all the student participants. (*quantitative*)
2. Vocabulary test – for all the student participants. (*quantitative*)
3. Interviews with teachers. (*qualitative*)

## **2. Theoretical background**

In this part of the degree project I will define concepts used throughout this thesis and present previous research relevant to my own. I will briefly explain terms such as extramural English and second language education and development. I will also tackle the aspect of motivation as a factor for language learning, look into different vocabulary types and examine gaming as an EE activity.

### **2.1 Defining extramural English**

In this degree project I have chosen to adopt Sundqvist and Sylvén (2016) definition of what extramural English is. Sundqvist and Sylvén (2016) explain the meaning behind extramural English and its Latin origin, as the word extramural is build up with two words put together – extra and mural. In Latin, the prefix *extra* means outside and the stem *mural* means wall. The word extramural can therefore be directly translated to *outside the walls*. Applied to English learning the term extramural English means: *English outside the walls*, referring to the English that learners encounter outside of school. Sundqvist and Sylvén (2016) stress that an important factor for defining and explaining extramural English is that the contact with language is not initiated by the teacher. The contact lies with the learner him/herself and is therefore voluntary, which according to Sundqvist and Sylvén (2016) can help the learner to develop a genuine interest in English.

In present day Sweden, there are plenty of opportunities to come across English outside of school and hence many extramural English activities learners can engage in. Sundqvist and Sylvén (2016) define numerous types of extramural English activities, some of which are: reading, watching Tv, browsing the web and playing games. In this degree project I have chosen to focus on studying the connection between students' habits of playing digital games in English and their vocabulary development.

### **2.2 L2 definition, acquisition and development**

In this section I would like to explain the term second language and briefly present some theories and research on second language English acquisition and development. Furthermore, I will examine motivation as a factor for successfully acquiring a second language and problems that can occur along the way.

A second language is any language that is learned by a child or an adult after the acquisition of a first language – one's mother tongue. As reported by Sundqvist and Sylvén (2016) second language acquisition has been studied since the 1970s and since then many theories

have been formed. It is interesting to notice the change since the start of research in the field of SLA, as the research has shifted from explaining L2 learning psychologically to socially. This change has been named as the *social turn* by Block (2003). In short, before the *social turn* L2 learning was explained by cognitive theories, where the learning is assumed possible because of the environmental stimuli to the individual's brain – therefore becoming an individual accomplishment. After the *social turn* L2 learning has been viewed as a social accomplishment, emphasizing that knowledge is highly dependent on social factors and gaining new knowledge is only possible through sociality.

Unsworth (2006) argues that the acquisition of L1 and L2 differs, as when acquiring L2 the learner already has command of one language. In accordance to Unsworth (2006) a learner's first language can impact the second language acquisition, since the language patterns and grammar may, or may not be transferred from L1 to L2. Although first and second language acquisition follow different development curves, there are some similarities to how the languages are learned. Unsworth (2006) claims that input is one of the crucial factors for successfully acquiring both L1 and L2. This claim is in line with Sundqvist and Sylvén (2016) work, where input, output and/or interaction are stated to be the essential components for L2 learning.

## **2.3 Motivation**

In contrast to L1, motivation plays a key role in successful second language acquisition. Unsworth (2006) explains that a child will learn his or her mother tongue naturally, just by being immersed in it, but L2 is learned under different circumstances. Second language is often taught in school, or in other more formal settings and not used outside of that environment; at least not to the same extent as one's L1. In accordance to Unsworth (2006) the input and usage of the second language is therefore scarcer in comparison and without motivation to master and use the language, the learner cannot achieve full fluency. For that reason, I will present motivation's significance and impact on L2 acquisition in the next section.

### **2.3.1 Pre-millennium motivation theories**

The first phase of L2 motivation studies was dominated by Gardner and Lambert (in Gardner 2009), who conducted an array of research on second language learning. Throughout the years Gardner and Lambert (in Gardner 2009) concluded that there are two most important factors – language aptitude and motivation. These two factors are not the only ones to be taken into account when researching L2 acquisition, but according to Gardner “a good practice will

have a greater influence on students with high levels of language aptitude and motivation” (2009, page 5). Gardner (2009) claims that there are two factors for motivation, that can be devised from their research. First factor is referred to as *educational context* and the second factor as *cultural context*. The *educational context* refers to the educational environment of a learner, for example the general language learning environment and attitude towards language learning in the learner’s school. The *cultural context* is described as the social world surrounding the learner and it includes aspects such as: cultural beliefs concerning language learning and language importance, home background etc. According to Gardner (2009) these features are expressed in the individual’s attitudes, beliefs and ideas as they are faced with the challenge of learning a second language.

In their research Gardner and Lambert (in Gardner 2009) combined the above-mentioned factors and developed two concepts affecting L2 learning – *integrative motivation/integrativeness* and *instrumental orientation*. *Integrativeness* can be explained as the learner’s interest in foreign languages, orientation in language study and favorable attitudes toward the target language community. While *instrumental orientation* reflects the functional value of L2 such as the advantage of knowing a second language to get a good job. The majority of Gardner and Lambert (in Gardner 2009) studies showed that *integrative motivation* had a key role in the successful learning of a second language.

During the same period researchers Deci and Ryan (1985) developed a different theory of learning motivation; the *self-determination* theory. Their studies included research on *intrinsic* and *extrinsic motivation*, which were previously frequently used in L2 research. *Intrinsic motivation* is explained by Deci and Ryan (1985) as the type of motivation where the learner initiates an activity for his/her own sake. The intention is to enjoy the activity and get satisfaction by completing it. In their research *intrinsic motivation* showed improved learning outcomes, as the learner was motivated and found the learning activity meaningful and fun. *Extrinsic motivation* can be seen as the opposite and defined as performing a task as a means to an end. An example of this would be to study hard to get good grades, or to pass an exam. Deci and Ryan (1985) claim that *extrinsic motivation* can also play a positive role in L2 learning, but the learner must have a different degree of self-determination and clear goals for it to do so.

### **2.3.2 Post-millennium motivation theories**

At the beginning of a new millennium some researchers began to question the past L2 learning theories. Dörnyei states that “Put simply, L2 motivation is currently in the process of

being radically reconceptualized and re-theorized in the context of contemporary notions of self and identity.” (2009, p. 1) One of the reasons for this, is the development of English and the languages new status as a global language. Sundqvist and Sylvén (2016) describe that among others *integrativeness* was questioned, as there was no longer a specific community associated with using the language. The focus of research within second language acquisition therefore shifter to focus on motivational changes. According to Sundqvist and Sylvén (2016) this new phase became known as the *process-orientated period*.

Resent research conducted by Ryan and Mercer (2011) examine how different learner mindsets impact on the learner’s behavior and motivation for learning L2. Ryan and Mercer (2011) focus on the *natural* in language learning – either natural aptitude or natural acquisition of a L2 outside of the classroom. They question the fact that if a learner believes that successful language acquisition requires a natural talent and/or spending time in a country where the language is spoken, how and to what extend will the learner then be motivated to learn the L2 in the classroom. In countries where internet access is high and where TV programs and other entertainment is in English, the language has a constant background presence. Ryan and Mercer (2011) claim that in these countries a *naturalness* towards the language is likely to evolve, as learners have numerous encounters with English and can participate in EE activities frequently. Therefore, they may feel that they learn English more *naturally* and easily outside of school, decreasing their motivation for leaning the language in classroom settings.

Motivation is not something that always stays constant and it is therefore difficult to measure and generalize motivation for second language learning. Researcher Dörnyei (2009) has therefore focused his work on developing a model for measuring motivation in language learning. As a result of his research he produced the *L2 Motivational Self System*. Dörnyei (2009) explains that the base hypothesis for his model is that: if proficiency in the target language is a part of one’s ideal self-image, it will serve as a powerful motivator to learn the language. He further elaborates that this is a result of our psychological desire to reduce the difference between our current self and possible future selves. According to Sundqvist and Sylvén (2016) Dörnyei’s (2009) L2 Motivational Self System is a great breakthrough in the research field of L2 motivation.

Dörnyei’s (2009) L2 Motivational Self System model includes three dimensions: *ideal L2 self*, *ought-to L2 self* and *L2 learning experience*. The *ideal L2 self* represents the L2 component in an individual’s general ideal self-image. If an individual’s ideal self-image is

the type of person who can fluently speak a second language, the *ideal L2 self* would become a powerful motivation factor for learning L2. The *ought-to L2 self* is linked to the qualities a learner believes he/she should possess. An example would be to get good grades in language tests, to meet social expectations. The last dimension of Dörnyei's (2009) model is the *L2 learning experience*. This third dimension is somewhat different from the first two as it includes fixed, executive motives related to the direct learning environment and experience of a learner. These executive motives could for example be: the impact of the teacher, the curriculum and the peer group. As motivation is not seen by Dörnyei (2009) as something static, it must be stressed that a learner's motivation can be different at different points in time. Results relevant for one learner may therefore not be applicable to another.

### **2.3.3 Approaches to foreign language learning and motivation.**

Henry (2014) states that the foreign language approach of the teacher and the method for teaching English used in the classroom, has a high impact on the learner's motivation. He describes that a study conducted by the Swedish school inspectorate in 2011, observed mostly secure and supportive language environments in grade 6 to 9 English classrooms. However, the inspectors found little evidence of activities that aroused the learner's interests and provided language challenges. Henry (2014) explains that only a handful of teachers used authentic materials and the learner's interests were seldomly included in class. Many class activities only involved answering right or wrong questions and translating sentences into Swedish or English. Furthermore, the learners had few opportunities for oral interaction. In interviews conducted with students, Henry (2014) found that many found the English lessons to be mundane, predictable and with quite low learning standards. The students also pointed out that they could not make use of their out-of-school English experiences in the classroom and were generally more comfortable using English outside of school.

Henry (2014) claims that this situation is not unique in Sweden, as other research points out similar problems in other countries. The fact that learners can participate in an increasing amount of EE activities outside of school, provides teachers on English with new challenges in providing learning opportunities that can create and sustain interest and motivation for learning English in school. Henry (2013) describes this problem in his work and states that learners are most likely reluctant to engage in English classroom learning as the activities lack authenticity and meaning. Henry (2013) further argues that outside of school EE activities

such as gaming, provides the learners with real, meaningful identity-confirming activities, while the classroom English is perceived as artificial and distant from learner's reality.

#### **2.3.4 CLIL approach**

As reported by Sundqvist and Sylvén (2016) *Content and language integrated learning* – abbreviated to CLIL, is one of the L2 learning approaches that has become widespread in Europe. The CLIL approach covers diverse learning areas, where a language other than a learners L1 is used as the medium of instruction. According to Henry (2014) the CLIL approach can trigger learner's motivation for L2 learning and give them a sense of authenticity; as CLIL is a communicative, integrated and interactive approach to language learning. He states that teaching subjects in English using CLIL radically changes the teaching conditions and students' perceptions of the learning situation. In accordance to Henry (2014) the communicative aspect of CLIL is meant to bring back the meaning to the act of learning in school. Sundqvist and Sylvén (2016) also claim that implementing the CLIL model, allows for a greater exposure to the target language, in comparison to language teaching in the normal school setting. However, Sundqvist and Sylvén (2016) further elaborate that even though comparatively little research has been conducted on CLIL in Swedish settings, the existing studies show that having English as the target CLIL language does not greatly benefit the Swedish learners. Sundqvist and Sylvén (2016) point out that several researches performed in Sweden present findings on negative effects CLIL might have on learners. These findings are: the students L2 proficiency does not develop beyond that of non-CLIL learners, CLIL students L1 may be negatively affected, the content of knowledge in CLIL subjects may be compromised. Considering both the negative and positive effects CLIL might or might not have on a learners L2 acquisition, further research in the field is needed for a better understanding of how to implement CLIL in the most efficient way and if the approach can be improved.

#### **2.4 Vocabulary**

As mentioned before, in this degree project I have chosen to focus on how the EE activity of playing digital games in English impacts the learner's vocabulary. This choice is made in consideration of Sundqvist (2009) findings that the correlation between EE activities and expanded vocabulary is the most straight forward and therefore easily detected. Sundqvist (2009) points out that there is a difference between vocabulary in speech and in writing, as people tend to use a smaller vocabulary when talking compared to when writing texts.

Considering that my research will evolve around recognizing written vocabulary, I will define a few vocabulary types relevant for my research and touch upon how to measure a learners' vocabulary.

#### **2.4.1 Receptive and productive vocabulary**

According to Sundqvist (2009) the most general level of knowing a word contains the form, meaning and use of the word. The terms *receptive* and *productive* can be used when examining a learner's vocabulary. Shortly these two terms can be summarized as follows: the *receptive* knowledge of a word implies that a learner can recognize the word in its spoken or written forms. The learner would also know what the word means in specific contexts and perhaps be able to recognize its common arrangement. The *productive* knowledge of a word signifies that the learner can say or/and write the word. Moreover, the learner should be able to use the appropriate and correct forms of the word, both in writing and speaking and use it in different contexts. Sundqvist (2009) indicates that according to the results from several studies, a learner's receptive vocabulary is greater than his/her productive vocabulary. Additionally, there are evidence that an increased vocabulary size, does not necessarily mean an increase in vocabulary use. Accordingly, Sundqvist (2009) concludes that although different types of vocabulary knowledge correlate with each other, they develop in different ways.

#### **2.4.2 Measuring vocabulary**

There are few different ways in which a learner's vocabulary can be tested, for my research the most relevant way is to examine the *lexical sophistication*. Sundqvist (2009) defines lexical sophistication as the percentage of "advanced words" a learner uses when producing text. Text is here used in its broader meaning, referring to both written and spoken contexts. The quality of words a learner uses is closely related to what is commonly regarded as *lexical richness*. Measuring a learner's lexical richness can help understand to which extend he/she is using a varied and large vocabulary. The term lexical richness also includes a learner's use of infrequent words, the so called "difficult words". Sundqvist (2009) explains that especially in a L2 context, the usage of low frequency words is often seen as a sign of high language proficiency in the target language. The target group for my research are grade three students in Swedish elementary school, therefore, the students in question have not yet developed English writing skills. My study will therefore test the learner's ability to recognize "difficult words" that they should have not learned in class settings. As follows, my test will investigate

if the students EE activities has impacted their vocabulary volume and if any *incidental learning* has occurred. The term *incidental learning* is defined by Laufer and Hulstijn (2001) as learning – for example vocabulary, without the intension to learn. It is therefore closely related to extramural English activities.

## **2.5 Gaming as a medium for EE learning**

Since my research is based on how gaming in English affects a learner's vocabulary, in the following section I will present some existing research in this field and define a few different game types.

According to Sylvén and Sundqvist (2012) gaming is an activity that is most commonly associated with teenagers, but in reality people of all ages play games. Internet access has become common and Henry (2014) claims that in 2010, 61 percent of 9 to 16-year-olds have a computer in their bedroom, meaning that even younger children have opportunities to be online and/or play games. Sylvén and Sundqvist (2012) point out that the default language of interaction in many games is English, which can be challenging to anyone who does not have English as their L1. As a result, they form a hypothesis: "...that successful and frequent players of such games who do not have English as their mother tongue acquire some of their English L2 proficiency in the activity of gaming." (Sylvén and Sundqvist, 2012, p. 3). The results of their research correlate with this hypothesis, since both Sundqvist (2009) and Sylvén and Sundqvist (2012) found a clear connection between playing games in English and development of English vocabulary. In her study, Sundqvist (2009) observed that the two most influent EE activities on a learner's vocabulary were playing video games and surfing the internet. Sundqvist (2009) also notes that vocabulary proficiency was one of the areas where boys outperformed girls, a possible explanation for this would be that boys spend more time on playing games and surfing the Internet.

It is interesting to notice that a gender difference in the time spent playing games and the type of games played was found. Sundqvist (2009) describes that boys generally prefer to play multiplayer online role-playing games, while girls prefer to play offline single-player games. Sundqvist (2009) further explains that boys chose to play games in the so called "physically oriented" category and girls chose to play "traditional, thoughtful" games.

### 2.5.1 Defining game types

When discussing games and their impact, it is necessary to understand what genre or type of games are available to the learners. Kinzie and Joseph (2008) suggest a framework that consists of six activity modes to describe different types of game play: *active*, *explorative*, *problem-solving*, *strategic*, *social* and *creative* play. Typical *active* play games are “shooter” games such as Counterstrike. As the name suggests, *active* type of games require the player to be active in one way or another. According to Sylvén and Sundqvist (2012) a game can consist of more than one mode; an example is the game The Sims which contains both *strategic* and *creative* modes. The *strategic* and *creative* modes in the game allows the player to create environments, simulate virtual worlds and take care of the world’s inhabitants – making decisions and controlling their lives. Sylvén and Sundqvist (2012) further state that online role-playing games such as World of Warcraft include all six modes defined by Kinzie and Joseph (2008). This is in line with Henry (2014), who declares that games such as World of Warcraft encourage and often demand, cooperation and communication with others in order to advance in the game. Playing an online role-playing game therefore demands a development of sophisticated knowledge and skills and user-generated input.

As my research is focused on a younger audience, I assume that not all game types are available for the targeted age group. Some types of online-roleplaying games might be too hard for a grade three student to understand in English and games such as The Sims are available to play in Swedish. I will therefore not immerse myself in what different games the students in my study are playing, but simply look at the genre and distinguish between online and offline games.

### **3. Methodology**

Inspired by the works of Dörnyei (2007) and Sundqvist (2009) I have chosen to use both *qualitative* and *quantitative* research for my degree project study. All results and conclusions drawn from my own research are based on a methodical data collection and, in line with Alvehus (2013) all the data has been correctly examined to access its validity. In this chapter I will present the research methods used in my study and explain why I have chosen these as the base for my research.

#### **3.1 Qualitative and quantitative methods**

The *qualitative* part of my research consists of semi-structured interviews with the teachers. I have chosen to have interviews as a part of my research in accordance with the works of Alvehus (2013) and Dörnyei (2007). The interview questions for the teachers were open-ended. Dörnyei (2007) states that a semi-structured interview approach encourages the interviewees to elaborate their answer, therefore providing a chance for more in-depth, detailed answers.

The *quantitative* part of my research consists of a questionnaire that is combined with a small glossary test. The questionnaire was done by all the students participating in my study. The first part of my study allows me to get an insight in the game-playing habits of third-graders and see possible gender differences. From the data gathered in the second part I can examine whether there is any relationship between whether a student plays games or time/genre of game played and their vocabulary proficiency. I can also investigate if there are any gender differences that my study uncovers.

#### **3.2 Interviews**

I chose to conduct all the interviews in Swedish, as it is the standard language used in school and would not intimidate or create language barriers, with the teachers and students who participated in my study. All the interviews are translated into English when featured in this degree project. A total of four teachers – one from each class I visited were interviewed. The interviews with the teachers took around ten minutes and consisted of eight questions. I chose to both document the interviews by recording them on my phone and using a Google forms questionnaire. The recorded materials can be re-viewed and transcribed for later analysis. I chose to complement the recordings with the Google forms document, since it provided me with the opportunity to make notes directly during the interview and have these available online for later reviewing. According to Alvehus (2013) and Dörnyei (2007) having more

than one source of collected data to turn to for future analysis, can help strengthen the validity of the materials and conclusions drawn from these.

### **3.3 Questionnaires**

The questionnaire was designed to measure the students' involvement with gaming as an EE activity and test their vocabulary on a very small-scale level. The questionnaire was written and filled out in Swedish, the results referred to in this degree project are translated to English. All students in each of the four classes I visited, completed the questionnaire and were encouraged to answer honestly and truly to reality and their knowledge. The questions featured in the questionnaire were influenced by the questions in Sundqvist (2009) research, but re-modeled to suit a research group of third-graders. I believe that having similar questions can help me when comparing and analyzing my materials, with help of other studies on a bigger scale. The general form, content and processing of the data gathered through this method is based on the book by Dörnyei and Taguchi (2010).

The first part of the questionnaire consisted partly of yes/no questions and partly of multiple-choice questions. The yes/no part included questions regarding gender, playing games overall and playing games specifically in English. The multiple-choice part of the survey dealt with aspects such as: how many hours one spent on gaming per week and what genre of game one played. The second part of the questionnaire contained a small vocabulary test of ten words. The vocabulary test was designed to test whether the students knew common gaming words. These words are commonly used in different types of games and usually not taught in the lower grades of elementary school. The words were deliberately chosen by me and since the words are game-specific, they do not reflect the students overall English vocabulary knowledge. I hope that this small vocabulary test can indicate some parallels between the time spent gaming and vocabulary proficiency.

### **3.4 Methodological considerations**

Including both qualitative and quantitative methods in my study has been as rewarding as it has been challenging. The process of making the questionnaire and forming interview questions have been educative and pleasurable. However, it was also time consuming and therefore, contributed to the overall stress for completing the research and handing in the degree project in time.

The questionnaire worked well and served its purpose, as the participants understood the questions and could complete it on their own. The interviews with teachers worked well but were constrained by the time limit, within which the teachers wanted to finish.

I hope that by having three participating schools, in three different areas made my research results heterogenous and therefore, according to Alvehus (2013) applicable within a larger context. But, since the study for this degree project has a rather small amplitude, it cannot be used to draw any general conclusions.

## **4. Results**

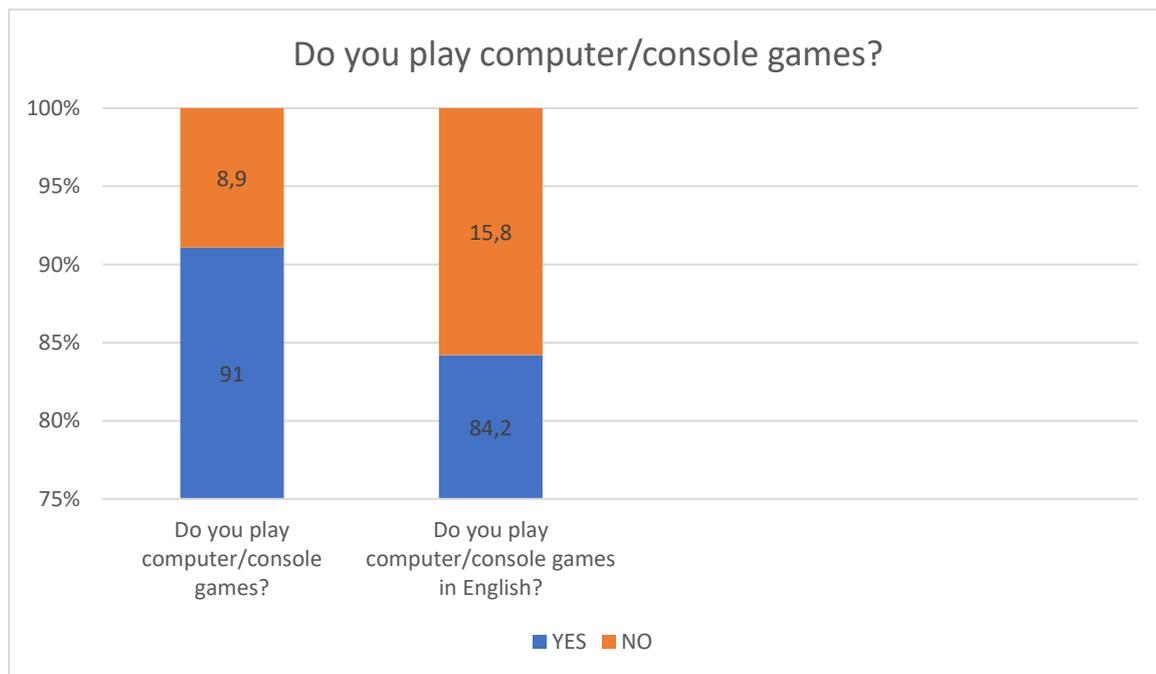
In this section of my degree project I will present the outcome of my research. The results are divided into two parts: questionnaire with the students and interviews with teachers. This break down of results should provide a clear basis for the following analysis part of the project. The results discussed and analyzed in the next chapter.

### **4.1 Questionnaire with students**

A total of four grade 3 classes participated in my study, which generated 101 responses to the questionnaire. The gender spread was almost equal, boys being somewhat overrepresented with being responsible for 52.5% of the answers, whereas girls representing 47.5%. As the questionnaire was divided into two parts: *gaming habits* and *vocabulary test*, I chose to present the results under two different titles. The first will cover the results connected to the gaming habits of students. The second one will contain results from the ten words vocabulary test. Possible gender differences in answers discussed in a separate part of the degree project.

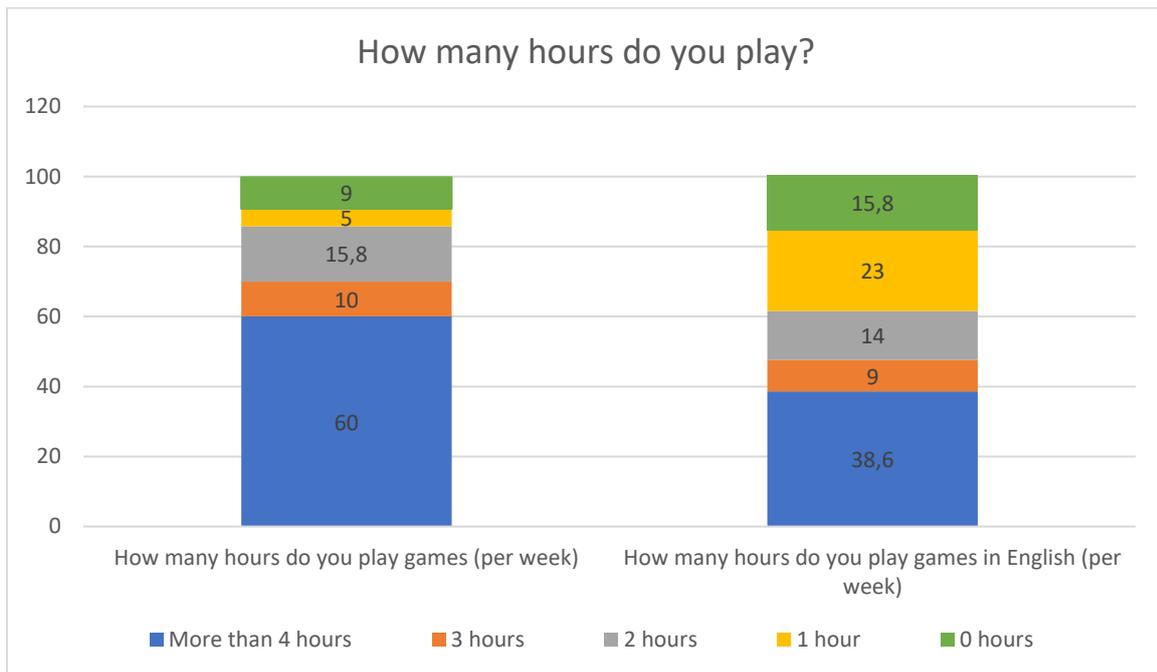
#### **4.1.1 Part one – gaming habits**

The first important piece of data to examine is whether students in grade three of elementary school play computer or console games and if they play any games in English. As seen in the chart below a staggering 84.2% of the students who participated in my research play digital games. Only 15.8% of participants do not play any type of digital games. From these results it can be concluded that a vast majority of students play digital games in their spare time, but do they play games in English? Let's turn our attention to the second column in the chart, which covers this question. From the second column we can deduce that even here, most participants have answered yes to the question. Meaning that 75.2% of students play digital games in English and 24.8% do not.

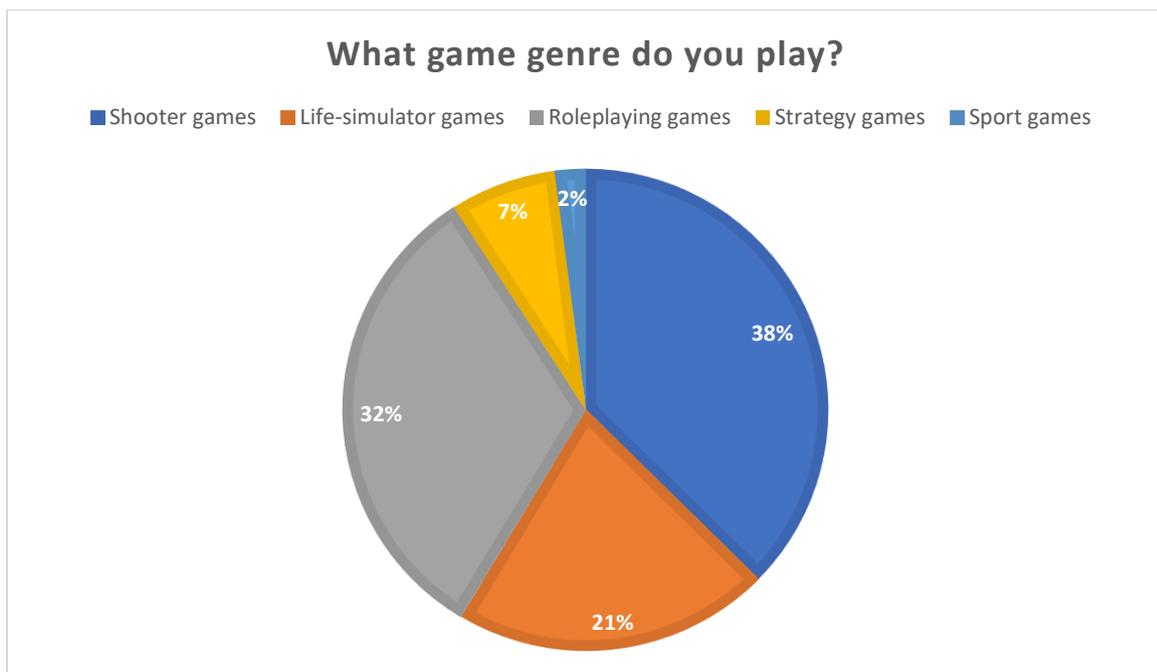


From this data we can also observe that the percentage of students who do not play any digital games at all, and the percentage of students who do not play games in English varies. There are more students who do not play games in English, than these who do not play games. In total 9 of 101 participants do not play any type of games, leaving us with 92 students who play games. From these 92 students 16 do not play games in English. Thus, out of total 101 students who participated in the study 76 students play English games. Meaning that 75% of all the participants play games in English.

Next lets' look at the answers from the question "how many hours do you play (per week)". Similar to the previous question, this question was recurrent, and the students had to first answer how many hours they played digital games in total, and then how many hours they spent playing specifically in English. From the chart below we can conclude that a majority of students, more exactly 60% played digital games more than 4 hours a week. 15,8% of students played games 2 hours a week and 10% played 3 hours a week. These values change for the next question "How many hours do you play games in English (per week)". From the chart we can see that there is a bigger spread and there are several students who never play games in English. Only 38,6% of all the participants in the study play games in English for more than 4 hours a week. 14% play English games 2 hours a week, 9% play 3 hours a week and 23% play 1 hour a week. Compared to the overall number of students who do not play any digital games at all, which is 9%, 15,8% of the 101 participants do not play any games in English.



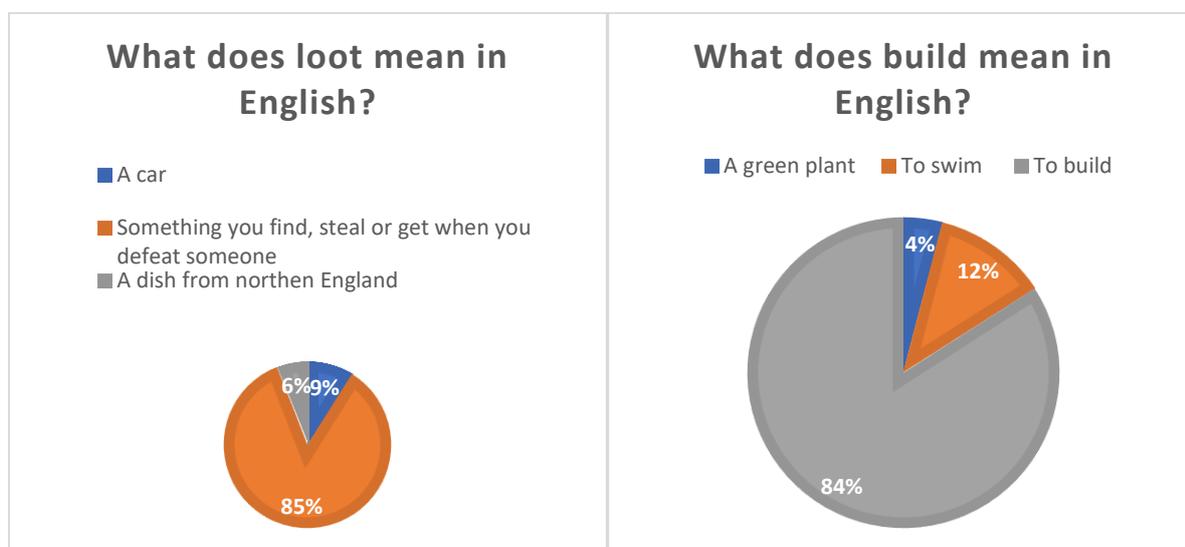
Other factors I decided to include in the questionnaire about game habits, was whether the participants played online or offline and what type of games they played. The result data shows that 69.6% of the students play online games and only 30,4% play offline. As can be seen in the chart below, there are three game genres that are almost equally popular among the students. Shooter games being most popular with 37,4% of players. Number two in popularity are Roleplaying games with 32,3% and in third place are Life-simulator games with 21,2%.

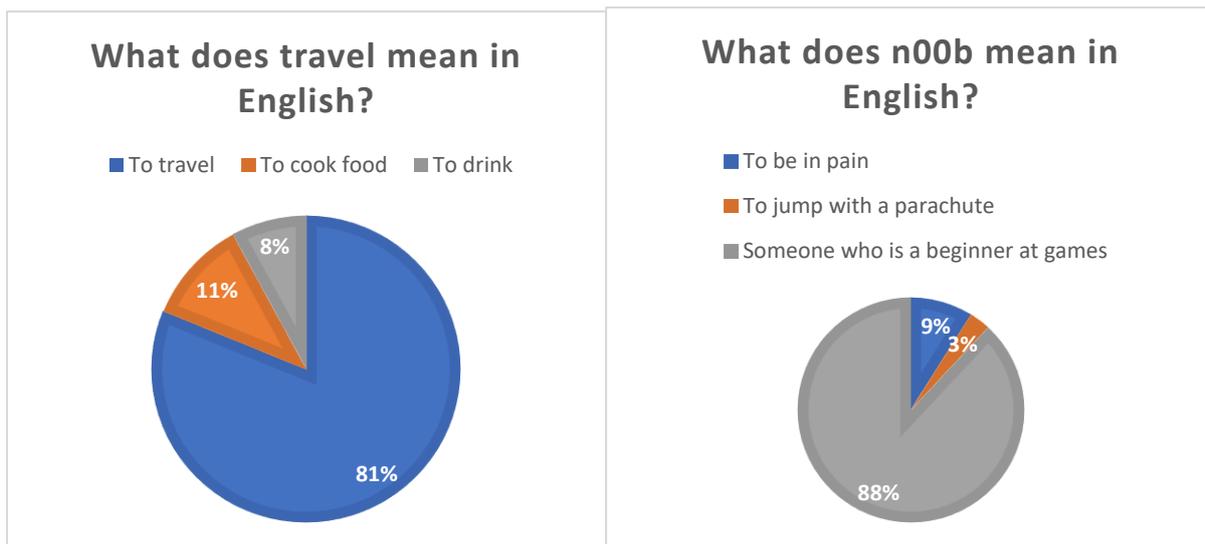


#### 4.1.2 Part two – vocabulary test

For this part of the questionnaire I chose to do a small vocabulary test. The students were presented 10 English words and had to answer what these meant in Swedish. The vocabulary test questions were multiple choice and the students could choose between three Swedish words for each English word. The English vocabulary I included in the questionnaire were game related words, that are typically not taught in the primary years of Swedish elementary school.

The words that were included in the questionnaire were: cheat, continue, loot, download, save, build, travel, level up, load, n00b. Out of these 10 words only 4 words had less than 90% correct answers. These four words are: loot, build, travel and n00b. As can be seen in the charts below, the word with the fewest correct answers is travel with an accuracy rate of 81%. In second place is build with 84% correct answers. In third place is the word loot with an accuracy rate of 85% and the word with most correct answers of these 4 words is n00b with 88% accurate answers.





The answers to the other 6 words had an average accuracy rate of 92%, the word that had most correct answers was continue with 96% of the students choosing the appropriate answer.

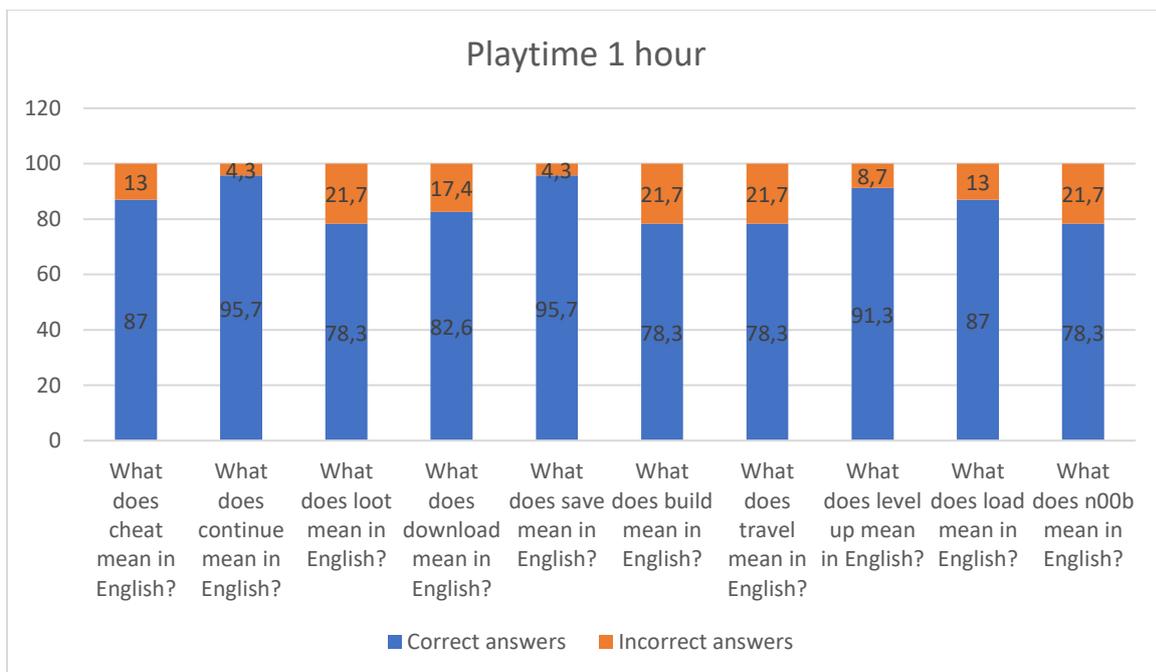
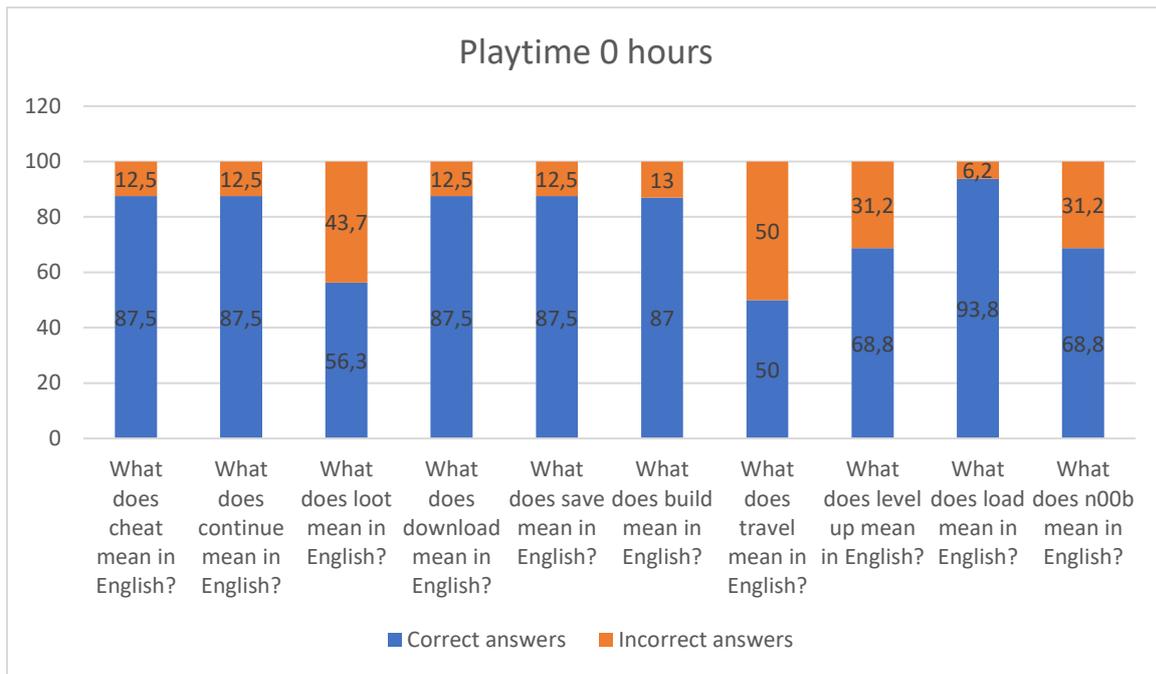
#### 4.1.3 Summary for the questionnaire data

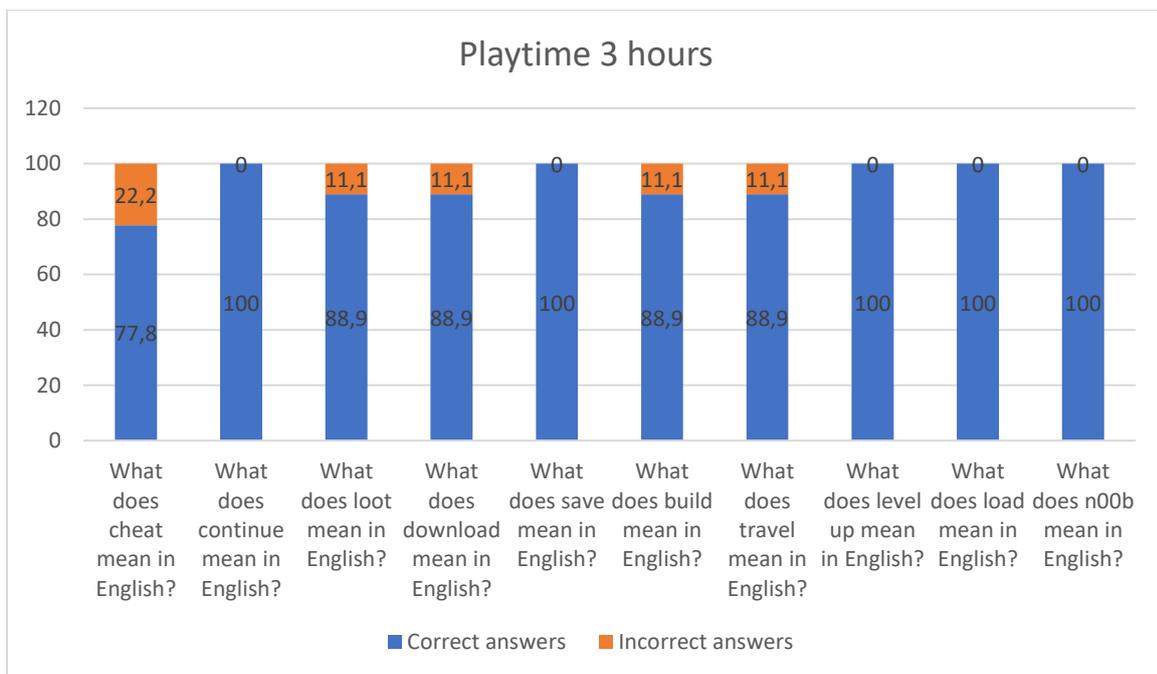
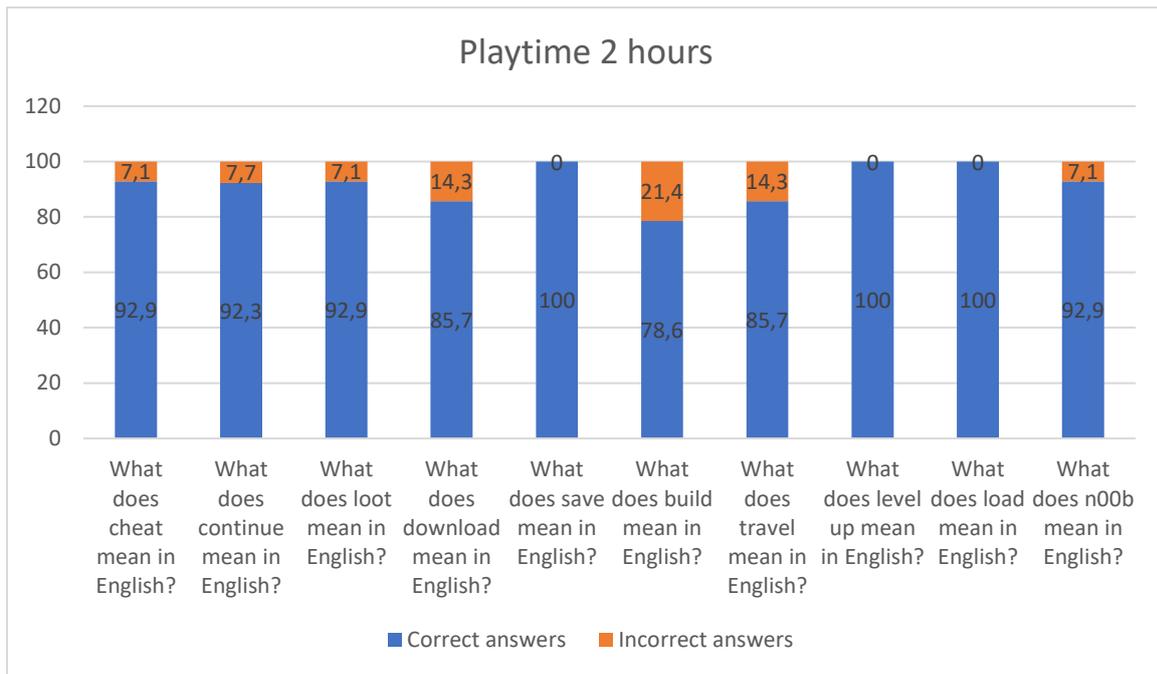
From the first two charts presented above we could conclude that the majority of students in grade three of elementary school play digital games. Furthermore, even though there are fewer students who play games in English, most of the students do. Generally, most students play games more than 4 hours a week, playtime for English games being a little scarcer. It is more popular to play games online and the most popular game genre to play are Shooter games.

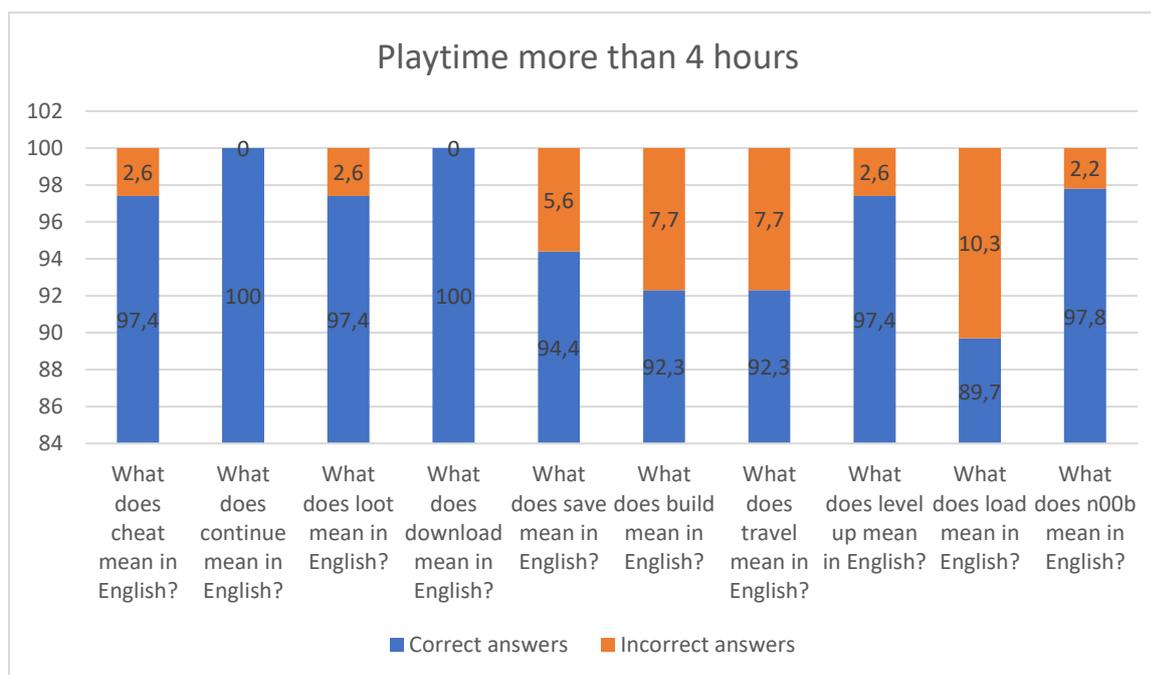
Out of 10 words 6 had an accuracy rate of 90% or more. Only 4 words had an accuracy rate below 90% and no words had an amount of correct answers below 80% mark.

#### 4.2 Relationship between EE activities and vocabulary proficiency

The purpose of the questionnaire was not only to examine the playing habits of students, but also to see if there is any relationship between the time spent on an EE activity – gaming and the vocabulary proficiency level. In this section I will therefore examine possible connections between the time, that students spent on digital games and the amount of correct answers on the vocabulary test. Below I present charts with percentage of correct answer to the vocabulary test, divided by how many hours the students play English games per week.







From these charts we can read that least amounts of mistakes were made by the students who played English games for 2 or 3 hours a week. Best scores belong to the student who played 3 hours and the least correct answers can be found in the chart where students played 0 hours.

It is interesting to observe that the students who spent 3 hours playing English games outperform these who spent more than 4 hours. Out of the 10 words tested, the answers from students who played 3 hours weekly had 5 words with a staggering 100% correct answers. In comparison students who played more than 4 hours only had 2 words with an accuracy rate of 100%. A possible explanation can be that there are only 9 students who claim to play 3 hours a week and 39 students who claim to play more than 4 hours. The increased number of students who play more than 4 hours might give more room for typos and mistakes, in case some of the students were in a hurry and did not take the time to read the questions.

As the vocabulary that was tested in the questionnaire was game related, I had anticipated that the students who do not play any digital games in English would get lower scores. This hypothesis is proven correct, as these students did perform slightly worse than the other groups. Even though the results of this observation are not conclusive; as it is done on such a small scale, there is a clear tendency that the students who play digital games more are inclined to have better vocabulary understanding.

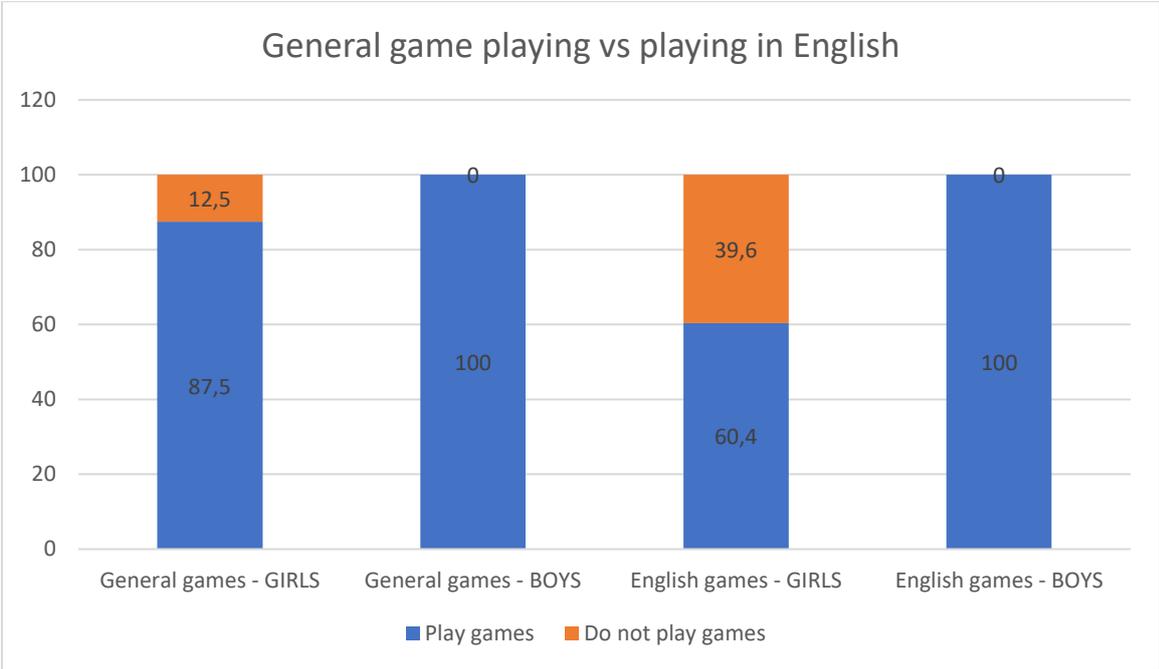
### 4.3 Gender aspect

In this part of the degree project I will compare some interesting aspects of the students gaming habits and gender. I will focus on three parts of the questionnaire: the difference in

time spent gaming - overall and English games, the game genre played and vocabulary proficiency for boys versus girls.

**4.3.1 Time spent playing games**

As can be seen in the chart below boys play digital games to a greater extent than girls. This is the case both for general games and specifically games in English. Only 87,5% of girls reply that they play games, comparatively a much higher percentage - 100% of boys play games. Similarly, a lower percentage of girls play games in English. Girls playing English games represent only 60,4% of the total participants, whereas 100% boys claim to play games in English.

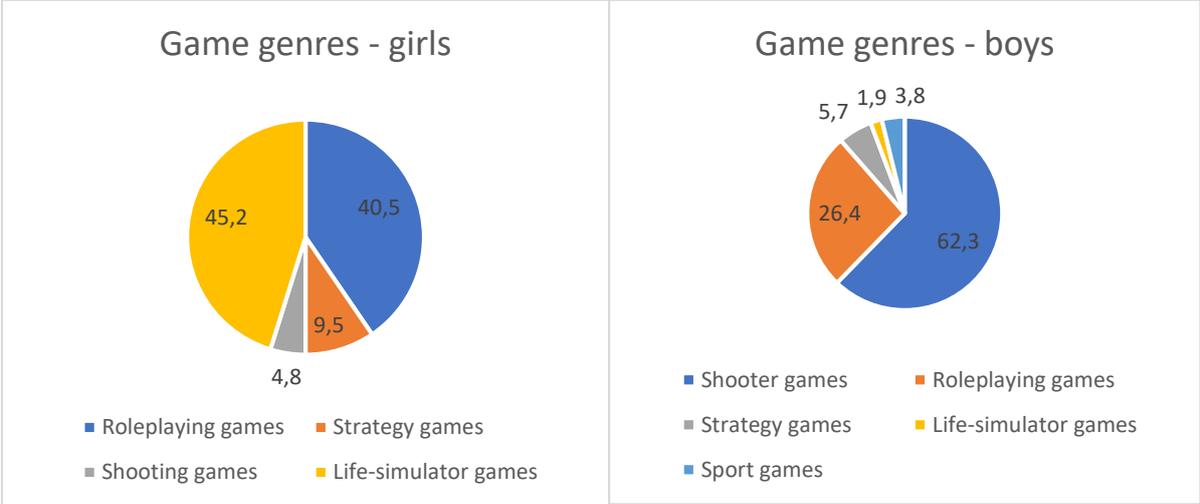


If we look at participant numbers, the 12,5% of girls who do not play any digital games are represented by 6 of 48 girls who took part in the study. From the 42 remaining girls who claim to play games, 18 do not play any games in English. Based on the previous studies conducted in this field of research, I anticipated that boys superior in the time they spent on playing digital games. As can be seen from the chart 100% of boys claim to play games and an equal number claim to play games in English. Based on this data, this hypothesis stands to be true.

**4.3.2 Game genres played**

From the two charts below, we can conclude that the game genres which are most popular with girls and boys differ. 45,2% of girls in the study prefer to play life-simulator games, closely followed by the 40,5% which prefer role-playing games. The majority of the boys

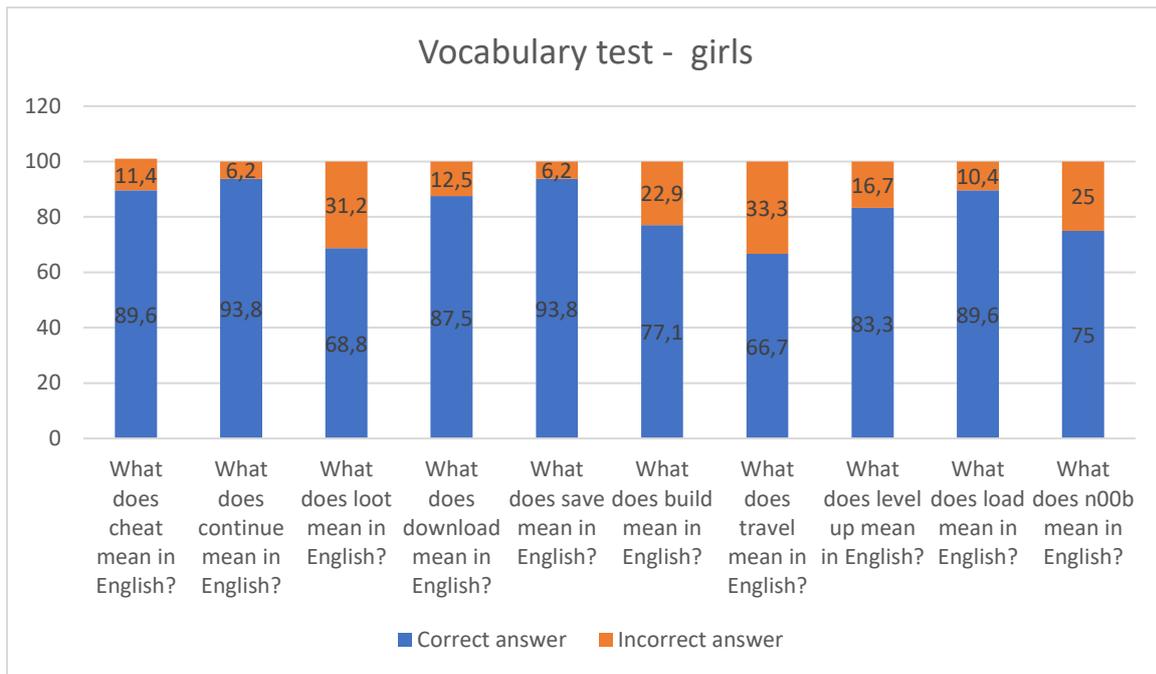
prefer to play shooter games with 62,3% choosing that answer. Number two choice of games for boys are the same as for girls, as 26,4% of boys chose role-playing games.



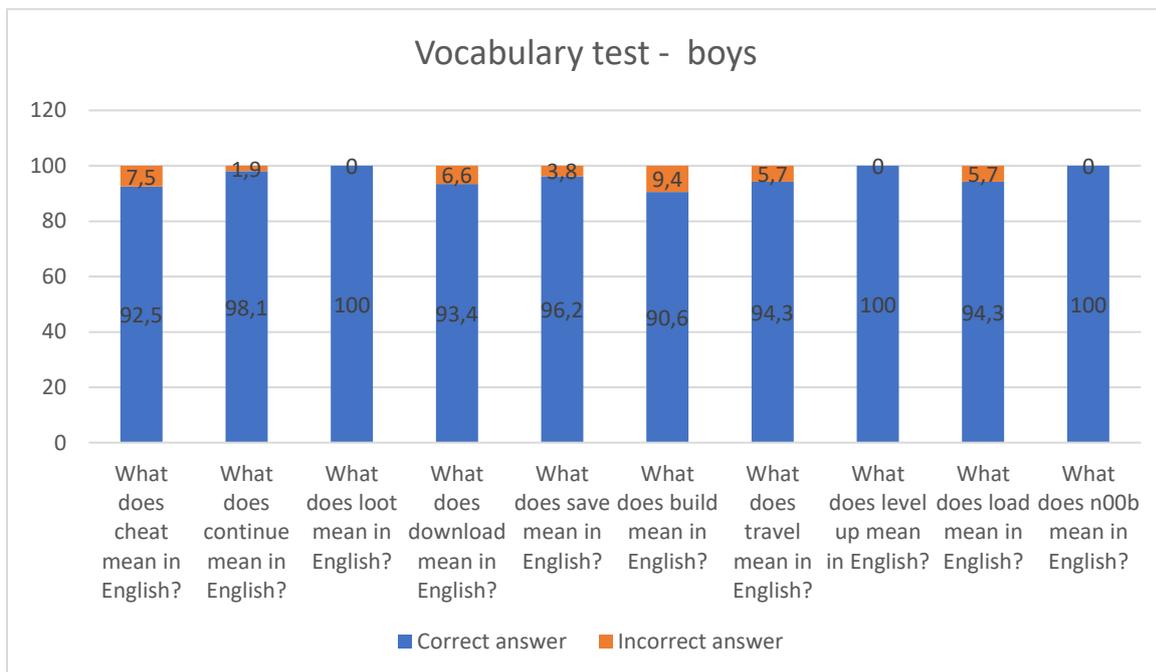
It is interesting to observe that boys have a larger spread in their choice of game genres and there are 5 game categories present in their chart, whereas girls only have 4. According to the data collected in this study, no girls play sport games. If we compare the two charts together, shooting games that are very popular with the boys are not at all as popular with the girls. Only 4,8% of girls claim to play shooter games, in contrast 62,3% of boys chose this game type. On the contrary, life-simulator games are most popular choice for girls with 45,2%, but are the least popular choice for boys, having the smallest percentage of answers with 1,9%. The difference in the game genres that can be seen in my research, goes hand in hand with the research of Sundqvist (2009) where similar results were found.

**4.3.3 Vocabulary proficiency**

In this section I want to examine the possible gender differences between how girls and boys performed on the vocabulary test. As shown in the charts below, the vocabulary test results are clearly in the favor of the boys. Although girls show an impressive knowledge of all 10 words with no word having more than 33,3% incorrect answers, boys clearly outperform them with 9,4% incorrect answers being the highest error number. Furthermore, boys have 100% correct answer rate for 3 different words, namely: loot, level up and n00b. In comparison, girls answered 68,8% correct on loot, 83,3% correct on level up and 75% correct on n00b. Since these three words are closely associated with shooting games and role-paying games - which were not popular among girls, it can be a possible explanation to the girls lower scores.



The words that girls struggled with most are: loot, build, travel and n00b. All of these have over 20% incorrect answers.



Boys also had troubles with the word build, which has the highest rate of incorrect answers at 9,4%. Other words with high count of wrong answers are: cheat, download, travel and load. All these words have at least 5% incorrect answers.

I had assumed that boys would know words cheat, download and load, as these are common in both shooter and role-playing games. It might be that this generation of young players does

not yet cheat or download, therefore not being in contact with these words. It might also be mistakes made due to not having enough patience to answer/read all the questions. Girls answers match my expectations, as I had expected words such as loot and n00b not to be used in the games that girls play.

#### **4.5 Interviews with teachers**

There were eight questions I asked each teacher and the interview developed from there. Here I would like to present a summary of the data I collected. To anonymize the teachers who took part in my research I will name them as teacher A, B, C and D.

The first question I asked every teacher was how long they have been teaching English. Three out of four teachers have only been teaching English for the past 4 or 6 years, meaning that they only have had one or two grade three classes. Teacher C had 22 years of experience teaching English. Next, I asked about what materials were used in the classroom. This was done to establish an image of how the education was formed and carried out in each class I visited. Teacher C and D informed me that they frequently used textbooks, teacher B had used a textbook before but had stopped and moved to alternative methods. All four teachers used digital media in their teaching. The teachers mention using films, from sources like YouTube and Utbildningsradio skola – a Swedish media company that produces various content usable in school. Three out of four teachers also told me that they make their own materials, such as stencils to fit in their lesson plans.

Next, I asked if the teachers had changed anything in their lecturing over the years. All four teachers stated that they have started to use digital resources more and tailored the lessons to a higher degree to fit the students' needs. This question led the conversation to how and if the students have changed, compared to a few years back. Even here all the teachers agreed upon the fact that the majority of students now came to school with a much higher knowledge of English. Teacher C elaborates that: "The YouTube generation of children know much more English than children used to. They play more digital games and it helps them develop their language." (Teacher C, personal communication, March 7, 2019). As a follow up question, I asked all four teachers if they know if any of their students expose themselves to any EE activities and if yes, to which ones? The answers I got from the teachers were very similar. All the teachers mentioned games and YouTube, one teacher also informed me that her students listen to music and travel a lot.

Since majority of students understand English and engage in EE activities outside of school, I wanted to know what the teachers think of the student motivation towards the learning language in school settings. All four teachers found that students were generally highly motivated to learn English in school. Teacher B stated that, even though most students are motivated, English class is a bit of a challenge for her, since it is difficult to find a subject to equally engage all the students. She further elaborated that “The level of students’ knowledge varies and the gap between the weaker and stronger students has grown. Therefore, it’s sometimes hard to plan a lesson where both students groups can develop their language.” (Teacher B, personal communication, March 7, 2019). Teacher B also felt that English is somewhat underprioritized and wishes she had more time to plan English lessons.

The final question I asked was whether the teachers had the impression that students EE activities had an impact on their language skills and vocabulary. Retrospectively, this question seems to have an obvious answer, but I will nevertheless include it here as a last statement. All teachers believed that EE activities outside of school undoubtedly have a great impact on students’ language proficiency. They also agreed upon the fact that these students who spent more time performing EE activities, had better vocabulary and overall language knowledge.

## 5. Discussion

There are several interesting aspects of my study I would like to discuss in this section. Both methods for conducting the study, studies process and the result data debated. I will start by going through the questionnaire with the students and then move on to discuss the results from the teacher interviews.

Even before I presented my questionnaire to the students, I knew that it had some limitations. Two examples are: students could only choose four options to answer how much time they spent on gaming per week and could only choose one genre of games they played. This was a conscious choice as I wanted to limit the study, to get clearer and straight forward answers. Of course, these choices also generated issues, questions and opinions from the students, that I was not prepared for. In two out of three schools I overheard that some students played games for 7 or even 10+ hours a week. Before conducting the study, I had not anticipated that students in grade three would spend so much time playing digital games, and this was an interesting discovery for me. A similar problem arose when students were asked to choose just one game genre and answer whether they played online or offline games. Numerous students wished to pick more than one game type and played both online and offline games. I solved this problem by telling these students to pick the alternatives they played most of the time. This solution worked fine for my study, but it can be debated whether it impacts the outcome in a way that makes the result data less reliable.

As for the results of the questionnaire, most of the data I gathered matches my expectations. Before I conducted my research, I had assumed that most of the students would play digital games. This image is one I got from my own experience, being around students at school. This is well matched with the data I collected, since over 80% of the students who participated in my study played digital games. It was interesting to see that so many played games in English, as I had imagined it to be a smaller number and I was somewhat shocked at the fact that many students played for longer time than I had anticipated. In my study girls played digital games to a lesser extent than boys. This is a result that I had expected after studying previous research in this field. Similar results can be found in several studies, some examples are: the research of Sundqvist (2009), Sundqvist and Sylvén (2012) and Kinzie and Joseph (2008).

The word test that I included in the questionnaire was well received among the students and many found it quite easy. When choosing the words for the test, I specifically chose words

that would be present in different types of games and judging from the high percentage of correct answers I made appropriate choices. I find it curious that words like travel and build gave students troubles, since these words are often seen in game genres such as: roleplaying and strategic games. Considering that roleplaying games were played by 32% of the students and strategy games were played by 7%, I believe the percentage of correct answers for words build and travel could have been better. A possible explanation to why these two words proves to be difficult can be that even though they are present in the games, these words are not often used in spoken, in game communication. Therefore, students may have seen these words, but never actually used them themselves, having only a receptive knowledge of the word in a certain context.

While most of the boys knew the words n00b and loot, many girls had troubles with their meaning. I assume that a possible reason for this might be that these words are often associated with online games and are considered to be slang. If a student is not exposed to an environment where these words are frequently used, the chance of knowing these are quite small. In my study, a smaller number of girls played roleplaying games and many played games offline. Hence, these girls would not encounter words such as loot and n00b often and probably never use them in speech.

It would be interesting to see if the results of my study would have been different if I had chosen a different test method. In my current research I included multiple choice answers, where the students could choose from three Swedish words to fit the meaning of the English word. If I had chosen to have students write the answer themselves, I believe the results would have been different. Hypothetically, I consider that students only know the ten gaming words I included in my vocabulary test as receptive vocabulary. Hence, as stated by Sundqvist (2009) when the words were seen in a familiar context the students could recognize them and link the English word with the Swedish word. But without the aid of the multiple choice structure where the correct answer is given in one of the choices, I believe more students would struggle to produce correct answers.

The interviews with the teachers were very straight forward and simple. I wish that I had more time to ask questions and give the teachers the opportunity to elaborate their answers, but with the time limitations of my study and the teachers busy schedule it was unattainable. The data collected from the interviews support the results gathered from the questionnaires. All four teachers claimed that their students spend time playing digital games in their spare time and believed it had a great impact on their English proficiency. Even though the teachers worked

with English in different ways, their perception of student's motivation and engagement in the subject was mostly homogenous. One teacher stated that she felt that students were sometimes disappointed in the English lesson content, as their expectations and ambitions were too high. It is alarming that two teachers felt that they didn't have the time to plan English lessons to the extend they wished for and only one teacher actively worked to include students interests in English class. As described in the work of Henry (2013), the difference between school English and the English students encounter outside of class seems to be a reoccurring problem, causing some students to lose their motivation for learning the subject in school. This clearly indicates that depending on the school, English might not be one of the prioritized subjects in elementary school and the teaching methods and contents for the subject vary.

In the interviews, the teachers also mentioned other EE activities such as: music, movies and YouTube were mentioned as well. As concluded in numerous researches in this field, for example Sundqvist (2009), all EE activities are contributing factors to a learner's language development. Undoubtfully, the students in my study had more than one source of English input and learned not only from games they played. It would therefore have been interesting to broaden my research and include other EE activities and factors for language learning.

## 6. Conclusion

Writing and collecting data for this degree project has been a very rewarding experience. Not only did I achieve what I was striving for, I also got an insight on how different schools and teachers work with English in their classrooms and explored the student's relations with gaming.

As a result of my study, I can conclude that a vast majority of students in grade three of elementary school in Sweden play digital games and it does impact their English knowledge. As 84,2% of the students who participated in my study played digital games and 75,2% of them played games in English. The results also show that boys play digital games more than girls and have a better understanding of gaming vocabulary. Clear gender differences in areas such as the preference of game genre and time spent gaming have also been found. The findings in my study are in line with the findings in previous research conducted by Sundqvist (2009) and Sundqvist and Sylvén (2014).

The research part of my degree project is very limited, but the results share many similarities with previous research in this field and no irregularities were found. In hindsight, I wish I had the time to do a pilot study. The reason being that I soon noticed some flaws in the questionnaires form and answer possibilities. These minor issues were addressed directly after receiving feedback from the first group of students and were not an obstacle in the overall research process. Nevertheless, it would have been best to test out the survey beforehand. There were two errors that were noticed in the design of my study. The first one was that I required the students to answer all the questions before they could submit the form. As one of the questions in the beginning of the questionnaire was: "do you play games?" and one could choose yes/no, it made no sense to have to pick what type of game genre one played if the answer to the previous question was "no". The second error I have made, was not including enough game genres to choose from. I chose to have four game genres as the multiple-choice alternatives but missed the sports genre. Apart from these two issues the questionnaires were received positively from the research participants.

As the interviews with the teachers were mostly semi-structured, the follow up questions to the four teachers I interviewed varied. In a way it might have given me a broader information base to analyze, but it might also made it harder to compare the answers to each other. In the interviews I conducted with the teachers it became clear that, although English is taught in Swedish elementary school, it does not have the same status and is not as prioritized as

subjects like mathematics or Swedish. I see this as a big problem as learning English is an important part of school education. If the subject is neglected in the elementary school the motivation for learning it decreases and the students might lose the interest to learn English in school even in higher grades. This is especially problematic now, since in line with Sundqvist (2009) and Henry (2013) students can engage in many EE activities outside of school and find these to be much more appealing than the English taught in the classroom. As teachers we must therefore try to close the gap between out-of-school and in-school English and make the students engaged in learning English in class. I am assured that the modern teachers need to understand the importance of fun and captivating English lessons, especially in lower grades where students are still only starting their language journey. More modern approaches to language learning and tools/media that can be used should therefore be introduced in the teacher training program and courses on how to improve the English teaching in classroom should be available for professional development of active teachers.

I believe that even though it is limited, my research has some value, as it complements the previous research and proves that even younger children have the same EE habits and benefit from these, alike their older peers. In the future I hope there will be more research on how EE activities impact students in lower grades. Further research in this field should be of great importance for students, active teachers and the board of education, as I believe both lesson plans/contents and the curriculum have room for improvement.

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