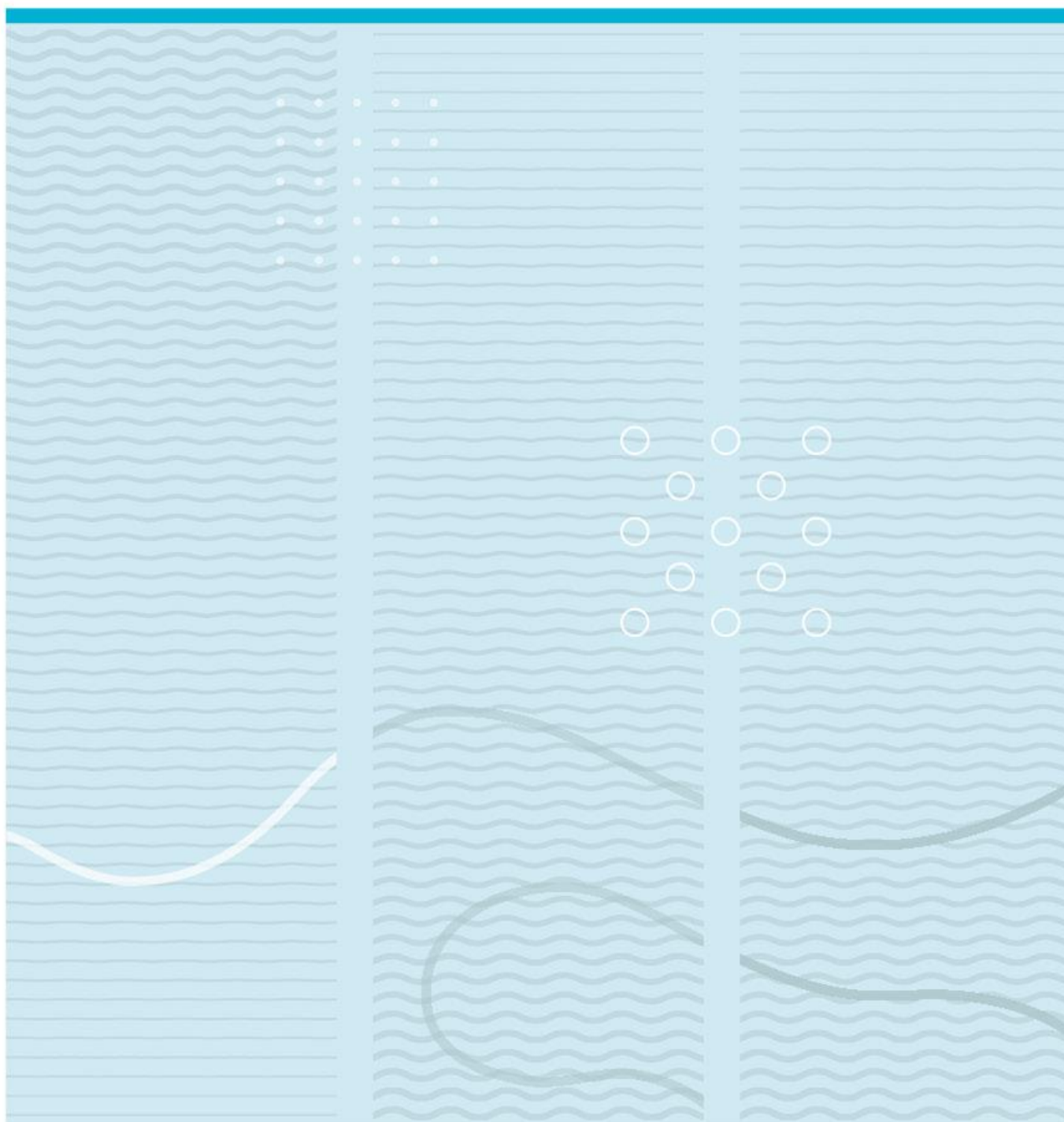


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# EFL Vocabulary through Gaming

How pupils learn new words through playing videogames



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This thesis is worth 30 study points.

## Summary

This study focused on finding correlations between playing different genres of videogames and their receptive and productive English vocabulary. It also delved into how the use of Metacognitive Learning Strategies impacted the students' vocabulary. The study used a new scale for collecting information on the Metacognitive Learning Strategies used. Lastly it found connections to how gaming influenced the students' habits of consuming and producing English media content.

This was a quantitative study done using a questionnaire with the participants being in 8<sup>th</sup> to 10<sup>th</sup> grade (n=116). The students were from one school in the south-east of Norway.

The aim of the study was to find out if gaming finding place outside of the classroom and school activities had a positive influence on the students' English learning. With the new curriculum changing the focus of what is important to focus on in the English classroom today, this study tries to change the opinions on gaming as a valid learning method. It is important for students that their hobbies are validated by the adults around them, and by doing so there might be an increase in motivation.

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## Foreword

First and foremost, I want to thank my supervisor, Raees Calafato. Without your feedback and insights into academic writing, I would not have been able to finish this thesis. Your knowledge of building questionnaires and writing academic texts has been indispensable in the process of writing my master's thesis. I also want to thank you for showing me that my interest in gaming could be used in an academic setting and guiding me through the process of creating research questions. A thank you must also be given to the participants of this research as without you, I would not have been able to finish this thesis.

Additionally, I want to thank my lecturers and fellow students for giving me ideas and keeping my mood up. I would not have made it through the five years of university without all of you. Thank you all for the new knowledge you have provided me with. I also want to express my gratitude for the many discussions we have had during our five years together.

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# 1 Introduction

The research topic of this master thesis was to investigate if there was a connection between students playing videogames and their vocabulary knowledge, both receptive and productive. The study was based on the concept of extramural English and the main objectives were to find out, specifically, if playing different genres of videogames outside of school and students' use of metacognitive vocabulary learning strategies when playing such games were predictive of their vocabulary knowledge. Lastly, the study sought out to examine if gaming affected the amount of other English media (i.e., excluding videogames) the students reported consuming. It is important to mention here that the students' playing of videogames, or gaming, as explored in this research, was done outside of school and not as part of their homework. The data gathered covered their time spent with games and what types of strategies the students used to learn vocabulary when gaming. To collect the information needed to answer these questions, a questionnaire was created that helped gather the necessary data.

My motivation for choosing this topic for my master's thesis stems from my own consumption of videogames, as well as books, TV-shows, and movies. After reflecting on my experience with videogames and how they have influenced my English knowledge I wanted to research the connection between what types of game genres are played and vocabulary development. I have also been an avid reader both as a child and as an adult. By looking back at how I became interested in fantasy books and movies, I could see that many of these stories were either adapted into or adapted from videogames, or they had similar worlds or stories as the games I had played before. There is also a difference between how a player and a reader/viewer interact with a given story. Videogames have a certain level of interactive environment dependent on both genre and the game itself. Books, movies, and other such media has a more passive way of consumption where the author or screenwriter decides what information the consumer is to learn. In several videogames on the other hand the player can decide how much information they want to engage with. This makes it so that different players will get different amounts of new vocabulary knowledge from any given game.

While working in school both as a practice student and as a substitute teacher the belief that playing any videogames could transform someone into a proficient and confident user of English, started to fade. This was due to talking to students who played videogames for hours on end yet

were still uncomfortable speaking English in front of other people, or students gaming a lot but still lacking the proficiency of speaking English with their peers. These reflections were part of the reason for why I wanted to not just focus on how much students played videogames, but also what *genres* they were playing as well what *strategies* they used when they encountered new vocabulary when gaming.

## 1.1 Research questions

I explored the following research questions (RQs) as part of my research project:

RQ1: *What is the relationship between playing different genres of games and vocabulary knowledge?*

By answering this research question, I was looking at the possibility of there being a correlation between how much time students used playing videogames and their vocabulary knowledge.

RQ2: *How is the use of different strategies for learning new words while gaming predictive of students' vocabulary knowledge?*

The focus of research question two was to try to find out if the active, conscious and subconscious, use of metacognitive learning strategies had an impact on the students' vocabulary knowledge gains.

RQ3: *To what degree do videogames encourage the consumption of other forms of English media among students?*

The reason for the last research question was to look for correlations between the time used playing videogames and the time spent on other English media activities.

## 1.2 Implications of research

The English subject in Norwegian schools is changing rapidly, as evident in the new curriculum (Kunnskapsdepartementet, 2019), as well as the growing influence of English in Norway in general. Many professions now require the people who apply to be fluent in English. The new curriculum focuses on how students are supposed to use their own language to connect with the rest of the



world and encourages teachers to provide students with a larger amount of autonomy. This can be seen in aims such as the need to “explore and present the content of cultural forms of expression from various media in the English-speaking world that are related to one's own interests”. (Kunnskapsdepartementet, 2019). Games are a form of media and can have several different cultural forms of expressions. The importance placed on getting students to express themselves “with fluency and coherence with a varied vocabulary and idiomatic expressions adapted to the purpose, recipient and situation” (Kunnskapsdepartementet, 2019) in the curriculum can be realized by playing online games where the players are required to cooperate, especially since the main language of online gaming these days is English.

I found it interesting to see how the aims of the core curriculum could possibly be fulfilled, even if partially, by playing certain types of videogames. It would of course be important that the game in question included English text, chat or spoken dialogue. What this thesis aimed to shed light on was how videogames could contribute to learning new vocabulary and if it had any value as a language learning resource. The implications of this research, if particular game genres and vocabulary learning strategies are shown to have a positive relationship with vocabulary knowledge, are how teachers could change their views about using videogames as a learning resource at school and encourage their students to play games outside of school while recommending certain strategies and genres.

Even though this thesis did not focus on students’ motivation to learn English, I still found it important to mention that videogames can be a motivating factor for students to develop their English vocabulary. Gaming can be described as a tool for developing both intrinsic and extrinsic motivation since “intrinsic motivation was related to students’ interests and goals, that is, when they develop a skill for a task because it is their will. In contrast, extrinsic motivation consists of external stimuli that influence students’ behaviour regarding the language.” (Redondo & Martin, 2015, p 127-128). When looking at videogames we can easily observe that gaming can be interesting for teenagers and a form of external stimuli that introduces them to new English vocabulary.

## 2 Theory and prior research

Before discussing the theories that support this research project and reviewing the literature on gaming and language learning, it was important to clarify some of the terms and concepts that will be used in the thesis. This chapter will then introduce relevant theories and prior research.

### 2.1 Definitions

#### 2.1.1 Videogame genres

The questionnaire included questions concerning the different genres of videogames that students played, and these genres were described for students when completing the questionnaire. It is also important to define the different genres of videogames for the reader. The genres are as follows: RPG, Sport, Strategy, Adventure, Vehicles, Shooters, Party games, Sandbox/Survival, Platformer, MOBA and Puzzle. It is important to remember that the definitions of these genres may change with time and that this is how I explained the different genres to students asking for definitions while answering the survey. "Like examples in other media, video game genres also emerge from similar characteristics, but the choice of characteristics has varied over time. Among the first to tackle game categorization were game developers and scholars." ("Why Video Game Genres Fail: A Classificatory Analysis - Syracuse University") (Clarke et al., 2017, p. 447).

- RPG is short for Role-Playing Game and comes in both multiplayer and single player versions. They are based on the player taking the role of a character and developing the story of the game through actions and decisions. There are also often extensive customization possibilities, both cosmetic changes as well as combat options. Examples of an RPG are "Skyrim", "The Witcher" and "Fable".
- Sport games are all games where the player is controlling either a single athlete or a team of sport players. Examples of this genre are "FIFA", "NBA" and "NHL".
- Strategy is a broad genre which includes aspects of both fast paced and slow games. Strategy as a genre is also often used in conjunction with other genres such as RPG's or Shooters. Examples of Strategy games are "Chess", "Stellaris" and "Civilizations V".

- Adventure games can at first seem similar to RPGs, but they do not include the same level of customization and the story is often driven by puzzles instead of extensive combat. Examples are “Portal”, “Heavy Rain” and “The Secret of Monkey Island”.
- Vehicles as a genre was an option for the students who play any sort of games where the main focus of the game is to drive any type of vehicle such as motorbikes or cars. Examples here are “Gran Turismo”, “Rocket league” and “F1”.
- Shooters are games where the core gameplay revolves around firearms. This includes both first-person and third-person Shooters. “Call of Duty”, “Battlefield” and “Fortnite” are games that can be classified as Shooters.
- Party games is a genre where the main objective of the game is to either collaborate with or win over other people. Most games considered as party games have the option of couch coop where people can sit in the same room, look at the same screen and play together. Examples are “Mario party”, “Ultimate Chicken Horse” and “Speedrunners”.
- Sandbox/survival is a genre where there is little to no restrictions on the player. They are free to explore and influence the virtual environment around them. Examples are “Minecraft”, “Garry’s Mod” and “Factorio”.
- Platformer is a genre where the main objective of the game is to get from one place to another. The main obstacles of the games are trying to find the correct route from point A to point B often accompanied by collectibles spread around the game world. Examples are “Mario Bros”, “Crash” and “Spyro”.
- MOBA is short for Multiplayer Online Battle Arena and are a collection of real-time strategy games where the player is a part of a team where the goal of the game is to destroy the home base of the enemy team. Examples are “Overwatch”, “League of Legends” and “DOTA”.

- The last genre is Puzzle and is a genre where all or most of the gameplay revolves around solving progressively harder puzzles. Examples are “Cypher”, “Human: Fall Flat” and “Portal”.

### 2.1.2 Other important terms

#### *Native tongue/mother tongue:*

- “This equals the first language for many children, the home language which their parents speak and which they consequently acquire from early childhood, and in which they eventually become entirely comfortable.” (Krulatz et al., 2018, p. 33) I explained the term mother tongue, to the students who asked, as the languages their parents spoke at home and which they themselves felt the most comfortable speaking.

#### *Console:*

- Gaming machines like the PlayStation, X-box and Nintendo Switch. Older generations of gaming consoles were originally meant for just playing games, but this has changed during the later years with the ability to stream movies and series on them as well.

#### *VR:*

- Stands for Virtual Reality and creates a virtual world around the player broadcasted to a set of VR goggles or glasses. Here the player gets a 360-degree view of the surroundings by moving their head. It is also normally possible to walk around the world using either a controller or walking around the room in real time.

#### *Twitch/streaming:*

- Twitch is a streaming service, whereas streaming is live video sharing where the creator normally interacts with the audience in real time. It is normal for the people watching to join the chat where they can interact with the streamer and other audience members.

#### *Text/voice chat*

- Text and voice chat are in-game features where the player can communicate with other players by writing text or talking to each other using a microphone. The player is also able,

in most online games, to turn chat on or off, or decide to only chat with people they have already added as friends in the game.

### *Gameplay*

- Gameplay is the actual action of a videogame. This can include the movement in the game, how weapons are used, and if there is an interactive physics system in the game. How combat is used, if there is any, and a level system can also be included in the term gameplay.

### *Cutscene*

- Cutscenes are short, edited video sequences in videogames where the player loses control of the game character. They are used to further the plot or give information about the world or the games' characters.

### *Campaign*

- Is a term that describes the story-based game mode in game types that focus heavily on the player versus player multiplayer experience. Campaigns can both be single player and multiplayer but are often limited to the amount of people that can play together at the same time.

### *L1, L2, L3...*

- Means first, second and third language. A first language can be explained as being the same as a Native or mother tongue. L2 learning is then the process of learning a second language. This continues with third languages as so on.

### *Gaming meta*

- Means that there are certain strategies, team builds, and item builds that are seen as being the best in games. This can range from having specific weapons in a shooter to playing certain characters in MOBA's. The meta can change when new characters are introduced, or the abilities and statistics of weapons are changed during the run of a game.

## **2.2 Receptive and Productive Vocabulary Learning**

Receptive vocabulary is the part of a person's vocabulary where the person knows what a word, phrase or sentence means. This does not mean that the person can comfortably use this knowledge on their own while talking or writing. Receptive vocabulary may be taught in school by teachers telling "learners the meaning of a word, provide a definition, or use the word in a sentence, but they are less likely to use an item apart from spelling or pronouncing it." (Webb, 2005, p. 34). This is different from productive vocabulary where the person can comprehend a word on a deeper level. This means that the person understands how to use words and phrases in their own productions. Productive vocabulary learning can be taught in school by working with tasks "such as cloze exercises or writing tasks." (Webb, 2005, p. 34). Receptive vocabulary knowledge often grows faster than productive vocabulary knowledge. The latter also demands active participation as the learner must produce language to develop their productive vocabulary.

## **2.3 Gaming's relation to vocabulary acquisition.**

This section introduces two studies where the focus was investigating the relationship between playing certain genres of videogames with learning vocabulary.

### **2.3.1 Comparing gamers', and non-gamers' vocabulary knowledge.**

A limited number of studies have explored the connection between gaming and receptive and productive vocabulary. In the Scandinavian context, Sundqvist (2019) examined "the relation between playing commercial-off-the-shelf (COTS) games in the wild and L2 English vocabulary and to offer comparisons with non-gamers' vocabulary" (p.87). Her use of the term "in the wild" refers to gaming outside of school. The study had a mixed method approach and indicated that frequent gamers scored higher on both productive vocabulary tests as well as receptive vocabulary tests. Sundqvist also found that frequent players of multiplayer games scored higher than players of MMORPG's, who had higher scores than those who played single player games, who, in turn, had higher scores than those who did not play games at all.

My project differs from this previous research in that I look at different game genres and, more importantly, the use of vocabulary learning strategies while gaming, for which a custom scale was

developed. This is an important distinction as there might be a significant difference in how much English vocabulary knowledge is required to play different videogame genres. For example, platformers or RPG's, even though both genres can be played single player or multiplayer. When playing multiplayer shooters, gamers might use different strategies to learn vocabulary. This vocabulary might be more technical, for instance in the form of weapon statistics and descriptions, as well as soldier classes and characteristics. There can also be an aspect of communicating with teammates, but this communication is not always required to be in English if the player is gaming with Norwegian friends or with the voice chat turned off.

### 2.3.2 Vocabulary learning strategies used by Malaysian MMORPG players.

Ng and Raghbir (2021) conducted a study with the two following research questions:

1. What are the VLS used by ESL players in MMORPG?
2. What are the functions of the VLS employed by Malaysian ELS players in MMORPG?

The study employed Gu and Johnson's (1996) categorisation of English as Second Language (ESL) Vocabulary Learning Strategies (VLS). This categorisation was "modified according to the exhibited behaviour during online gaming." (Ng & Raghbir, 2021, p. 97). The categorisations were modified by changing the meaning of the original "Metacognitive" definition:

1. From "Selection" and "Self-initiation" into "Meaning making".
2. "Cognitive", meaning "Guessing", "Using dictionary" and "Note-taking" into the umbrella term "Word acquisition" including "Consultation" and "using Online Dictionary".
3. Then "Memory" consisting of "Rehearsal" and "Encoding" was changed to "Word Comparison".
4. Lastly, "Usage of words in various contexts" was changed into "Incorporating Words with Real-World Contexts (p. 98-99).

The data collection done by Ng and Raghbir (2021) consisted of taking notes while observing the gameplay as well as video recordings of four game-play sessions. The study discovered among other findings that the most used VLS during these sessions was "Consultation". These findings showed that "the online gaming environment assisted these ESL learners in acquiring new English words or vocabulary." (Ng & Raghbir, 2021, p. 101). The study concluded that gaming motivated ESL learners to learn new vocabulary. They also concluded that gaming could enhance the learning capabilities

of English learners as a learner-centred platform. Ng and Raghbir ended the article by recommending later research to involve a bigger sample size as well as investigating the use of VLS in correlation with other ESL learner groups, and other online gaming platforms.

## **2.4 Incidental learning**

In this section I first defined the term incidental learning and shed light on some of its benefits and limitations. I then introduced three different studies, with their results, done on the subject. One of which is a master thesis which focused on Incidental L2-Vocabulary learning. The two other studies are articles that investigated incidental learning through video viewing and the use of captions and subtitles respectively.

Incidental learning in general terms mean “learning that occurs unintentionally, from activities where learning is not a conscious goal for the learner. For example, when someone plays a sport just for fun, but ends up improving their skills over time, they’re engaging in incidental learning.” (Shatz, n.d.). When looking at incidental learning in conjunction with L2 vocabulary learning, it means that the person is learning new words by partaking in activities meant for fun or entertainment or some purpose other than learning. This is the exact opposite of intentional learning which occurs when doing an activity where the main goal is to learn something.

There are different benefits to incidental learning. For example, “It can be more effective, for example if someone lacks confidence in their ability to learn, and consequently avoids intentional learning.” (Shatz, n.d.) It can save time by being a part of the student’s daily routine or hobby. It can also increase the motivation of the learner if the method of practising is a part of an activity they already enjoy doing. There are limits to incidental learning especially when looking at the difficulty of the subject. Studying prefixes, suffixes and morphology is difficult without intentional learning, and the same would be the case for advanced grammar or difficult sentence structures. Learning vocabulary on the other hand can be done in this manner, but there will also be limits here, like how to use unfamiliar words correctly in everyday life if the person does not look it up afterwards. This is something I was also investigating when asking the participants about their strategies when encountering unfamiliar words.



### 2.4.1 Acquiring vocabulary from videogames

Fløan (2015, p.12) investigated if there was a difference between being an active agent playing videogames and doing non-interactive activities such as watching television or gameplay. The participants were 40 Norwegian 7<sup>th</sup> and 8<sup>th</sup> graders. The videogame used in the experiment was “Black and White”. The students did a test where they were to translate 40 words from English to Norwegian. The study also included two questionnaires on gaming habits. After the translation test, the participants were separated into two groups where one group played parts of the videogame while the second groups watched recorded gameplay. After finishing the activity, the two groups were given an identical test to the one done before. The results of the data analysis showed an increase of 7.1% in scores from the tests. “However, the statistical calculations done afterwards showed that there were no significant differences when it came to the various conditions, neither playing nor watching the video game proved being more beneficial than the other.” (Fløan, 2015, p. 33). One of the differences between this study and my project was the period of playing videogames. Fløan (2015) looked at how an average of 29 minutes of gaming versus watching gameplay impacted vocabulary learning, explored how their everyday gaming habits were linked to their vocabulary knowledge as well as how their use of strategies for learning new words while playing videogames predicted this knowledge.

### 2.4.2 Learning through viewing video

Montero Perez (2020) argued for the importance of incidental learning as the amount of vocabulary needed to understand a second language is difficult to reach if all learning were to be intentional. “Therefore, providing learners with opportunities for incidental learning seems crucial to foster L2 learners’ lexical development.” (Montero Perez, 2020, p. 750). The study investigated L2 learners of French and focused on the pick-up rate of new words. The research questions were: “Is there an effect of watching audio-visual input on the learning of new vocabulary by high-intermediate learners of French as a foreign language? And if so, which aspects of word knowledge can learners acquire from watching a documentary?” (Montero Perez, 2020, p. 754). There was also focus on the question of whether a learners’ vocabulary knowledge moderated the limits of incidental learning through audio-visual input.

In the study done by Montero Perez (2020) there were 63 participants separated into two groups. 41 participants were in the group undergoing the experiment while 22 participants partook only in the tests. The experimental group watched an authentic French documentary. The voiceover of the documentary was manipulated to have 95% of the words being part of the 3000 most used word families. The participants took part in both a vocabulary knowledge test as well as three working memory tests before starting the experiment. There were also four different post-tests. The conclusions drawn from the findings were as follows: “this study reveals that watching audio-visual input leads to knowledge of word form and meaning, with the first aspect of knowledge acquired more easily than the latter.” (Montero Perez, 2020, p. 768). The findings showed only small lexical gains, but the author argued that by watching larger amounts of the input, the amount of vocabulary knowledge learnt will also increase. The findings also showed promise for the second research question and showed that participants with more prior vocabulary knowledge had benefitted more from this type of learning. This study was relevant to my thesis as the use of audio-visual input is normally used in videogames as well as, my thesis also included the consumption of other media such as movies and series’.

### 2.4.3 Effectiveness of subtitles and captions

This study investigated the correlation between the use of subtitles, captions, as well as no subtitles and incidental learning. The study also included the use of bilingual subtitles which “involve the simultaneous presentation of L1 and L2 subtitles, with L1 presented on the first line and (“Incidental Vocabulary Learning From Bilingual Subtitled Viewing: An Eye ...”) L2 underneath.” (Wang, & Pellicer-Sánchez, 2022, p. 768). The participants were 106 Chinese learners of English with an average age of 23.42 years. The authors collected data on the proficiency levels according to the participants International English Language Testing System as well as a chosen vocabulary test. It also used eye-tracking software and after viewing the footage the participants completed a comprehension test. The results showed that form recognition was the easiest component for the participants to learn. Following this was word meaning. The findings supported that the use of captions and bilingual subtitles are beneficial for intermediate learners, while L1 subtitles and no subtitles fell behind. Bilingual subtitles were disadvantageous to learning word forms compared to captions. Though bilingual subtitles were helpful in meaning recognition, but not meaning recall. It was stated that “the participants in this study were intermediate to

advanced Chinese learners of English who had experience using bilingual subtitles. Thus, the findings might not be well-generalized to L2 learners with different proficiency levels and L1 backgrounds.” (Wang, & Pellicer-Sánchez, 2022, p. 795). This study was relevant to my research as most games with dialogue has the possibility of adding subtitles, though I did not take this into consideration when creating my thesis. There are also games like “Undertale” or “Zelda: Ocarina of Time” where there are no voice actors, and the only available dialogue is text-based.

## **2.5 Krashen’s language acquisition theories**

Stephen Krashen is a famous American linguist, well known in the field of second-language acquisition and bilingual education. I started this section by introducing four of his hypotheses regarding input for L2 learners. The four theories are called: acquisition-learning distinction, monitor hypothesis, input hypothesis and affective filter hypothesis. I then introduced some claims Krashen’s theories have made.

### **2.5.1 Input hypotheses**

Acquisition-learning distinction means that learners of L2 have two different systems for learning a second language. “The first approach is subconscious language acquisition, and the second approach is conscious language learning.” (Blokum, 2022, P. 5). Subconscious language acquisition is seen as the most important by Krashen. This form of learning creates a sense for a language in the learner which makes it possible for them to distinguish right from wrong by sensing the correct use. This hypothesis is relevant to my research as the learning happening during gaming, watching, and reading, in learners’ free time, often is subconscious except for when a learner actively tries to remember new vocabulary. If these types of media are given as homework or as a part of a school project, the learner understands there is an expectation that they should learn from them, and this learning can then be more goal oriented.

Monitor hypothesis states that the conscious and subconscious language acquisition is used differently. “Subconscious language acquisition initiates utterances, while conscious language learning plays a small part in second language performance” (Blokum, 2022, P. 5). Conscious learning works as a proof-reader. This means that the main body of what a student learns is

subconscious while the formal knowledge learnt through school or other instances works by correcting grammar and ensuring accurate English.

The input hypothesis is similar to Vygotsky's zone of proximal development where the learner has to reach for something that is just a little bit more complex than their prior knowledge. Blokum argues that "It is possible to understand the input by using context, one's knowledge of the world, and extra-linguistic information." (2022, P. 5). The fact that games, movies, series, and many texts are multimodal makes it easier for the learner to understand new words through context. There is also the possibility of using subtitles, but this is not something I have used time on researching in this thesis. Lastly for this hypothesis, it is important to remember that a lot of the input students get through games, movies and other sources are often a bit above their current understanding. This helps them to continue reaching for the "next level" of language knowledge to easier understand the plot points or best strategies going forward.

Lastly the affective filter hypothesis (Blokum, 2022, P. 6) focuses on three variables in particular. For the learner to progress efficiently it is important that they have high motivation, high self-confidence, and low anxiety. According to Blokum there may be a correlation with learners engaging in "English language content on the internet" (2022, P. 6) and having the correct levels of these variables. This can also correlate with students engaging with videogames as well since the stress levels of learning English in games may be lower for some than when in a school setting.

### 2.5.2 Krashen's claims

The claims I focused on were that "Exposure to input is necessary for L2 development. The principal data for the acquisition of language is found in the communicatively embedded comprehensible input that learners receive. Comprehension precedes production in the acquisition process." (Loewen, 2021, P. 312).

The claim that learners of L2 need to be exposed to input is easily explained and was important in correlation with my research. Since videogames as well as books, movies and other media in this context is seen as a sort of input, they can be interpreted as helpful for learning. By consuming different forms of media, students are exposed to English in a multimodal form which makes it

easier for them to understand new vocabulary through context. Loewen agrees that input is necessary for L2 development (2021, P. 312).

The second claim means that to gain more language knowledge, there needs to be new knowledge delivered together with known knowledge. Loewen used the example of “if an English L2 learner is told to Put the cup on the counter, they might not know the word counter.” (2021, P. 312). The learner can then use the context of the environment it is in to understand that they are supposed to put their cup on the flat surface that works in much the same fashion as a table. The theories of what is the primary mechanism for making input understood is divided. “. For Krashen, it is context; for interactionists, it is interaction.” (Loewen, 2021, P. 313). This means that both sides of this discussion view input as crucial, but what type of input differs between them. The reason for why I found this important for my thesis was that videogames have context-based input, but many games can also include interaction-based inputs. This means that the type of input the reader deems most important will not devalue the importance of input.

The last claim I introduced here were the claim that a learner must first comprehend before they can begin producing in the given language. This has even been developed further where “Krashen's input hypothesis has argued that output is a by-product of learning, rather than a source of learning. Thus, the emphasis for the classroom is that teachers should provide rich input without pressuring learners to produce output.” (Loewen, 2021, P. 313). Interactionists disagree with this and claims that output can also promote learning. One of the arguments for this view is that learning through input does not force the learner to pay attention to anything other than the message in the input. On the other hand, the learner needs to pay attention to things like syntax and morphology to create correct output. The theory was useful for my thesis as videogames are normally known for having more output than input. This is often the case, but there are also a lot of multiplayer games where the player is either forced or heavily encouraged to interact with their fellow players which makes them create output as well as consume input. This means that for certain games both input and output is a main understanding of the game and makes it so that it can be seen as a useful learning tool no matter what your opinion on input and output learning is.

## 2.6 Gaming as Extramural English

Extramural English (EE) is a term that can be translated into “English outside the walls”. “The walls” are here referring to outside of school and is seen as a form of indirect learning of English that takes place outside of the teacher-controlled environment. Extramural English is a broad term and includes all sorts of English encounters outside of school. This is the difference from “gaming in the wild” (Sundqvist, 2019) which was introduced earlier in section 2.3.1.

In this thesis I was looking at how gaming was a part of the Extramural English students take part of in their own spare time. Games and gaming communities often have English as their main language. This means that to be able to play an English game “L2 linguistic input must be understood and, therefore, it is not a far-fetched 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 & Sundqvist, 2012, p. 303-304). By looking at gaming as a platform for practicing English, teachers can encourage their students to play games that challenges their existing vocabulary. This can in turn help the students stay motivated to continue learning.

Extramural English is a broad term that covers different free time activities like reading books, listening to music, and playing videogames. According to Sundqvist (2009), activities that require learners to be productive has a bigger impact on the learners’ vocabulary. Videogames, being on the internet and reading text was included in Sundqvist’s productive activities and was according to her a possible path to progress in English. Passive activities like listening to music and watching movies or films on the other hand seemed to have less of an impact on their general English skills. While the results in this study argued for the possibility of gaming being an activity that positively influences the vocabulary size of students, it is also important to mention that the thesis is from 2009 and was started in 2006 which means that Extramural English will have developed and changed a lot since it was written. This does not imply that I found the results to no longer be relevant, but since gaming has developed significantly since then, it meant that as a researcher it was important to look deeper into games and how the different genres affected the students’ vocabulary differently in the present. Moreover, while Sundqvist looked at all activities regarded as Extramural English, I focused on gaming and how different genres influenced the participants differently as well as looking at how they played games by asking them about their strategies when they encounter new words.

## 2.7 Online informal learning of English

Online informal learning of English or OILE (Blokum, 2022) is a sub-group of extramural English and is recognized as different internet-based activities done in English by learners of English. OILE like Extramural English differs from the typical teacher driven learning done in school as this form of vocabulary learning is incidental as the focus of the activities are entertainment or communication. The learners are often not aware that they are acquiring new knowledge as they are partaking in these activities. "OILE encompasses online activities such as streaming, listening to music, online reading, social networking, and other interactive online practices" (Blokum, 2022, p.8). As English is the most accessible often used language used on the internet for most Norwegian users, this means that English on the internet is a part of all our daily lives. This provides users with the possibility to experience English in a more natural setting than they would have encountered in school. The difference in motivation can also be seen as the main goal of the activities are the students' enjoyment and not for learning.

On the other hand, this means that there is no teacher or other adult to factcheck or grammar check the content the English students are exposed to. This has divided the opinions of English teachers. Though a lot of teachers see OILE as a useful addition to opportunities of language learning, "some of the teachers were concerned about the quality of the English learned from online informal sources, as they believed that the most correct form of English was learned in school." (Blokum, 2022, p.47). This divided opinion of OILE is seen partly because of the teachers' different experiences with students who spend a lot of their time on the internet. Some teachers believe students can develop poor grammar or a highly specialized vocabulary if they are only exposed to a specific type of media or text online. Other students can combine the vocabulary they learn outside of school with grammar and vocabulary learned in their lessons at school. This difference in combination with what the students are watching online can create a gap between the students in term of English skills but can also help students who would not perform as well without the inputs from sources from outside lessons.

## 2.8 Other vocabulary learning methods.

In this section I introduced three other vocabulary learning methods and research looking at how they were effective in learning new vocabulary. In the discussion chapter later in this thesis I looked at these methods similarities or lack of similarities to learning vocabulary through playing videogames.

### 2.8.1 Task-based reading

A lesson based on task-based learning “has three phases: Pre-task, the main task and post-task. There are different modes for performance based on the types of tasks and phases. Tasks can be performed in a whole-class context, in pairs, in groups, or by learners working individually.” (Kamalian et al., 2017, p. 33). The pre-task phase includes getting to know the main task, which should have a problem to be solved, different types of interaction and pursue a goal. The task should also be solved in a social environment. The post-task should provide the learners with “an opportunity for a repeated performance and encourages reflection on how the task was performed and encourages attention, in particular, to forms that proved problematic to the learners when they performed the task”. (Kamalian et al., 2017, p. 33). For it to be task-based reading in particular the tasks should be in the form of activities like text completion or pupil generated questions.

The research done by Kamalian et al. (2017) had 47 participants with a mean age of 23. The participants were all chosen from intermediate classes in Iran. The findings of the research showed that task-based reading activities had a high correlation with vocabulary learning and retention. It also helped the students improve their performances through student-to-student interactions. These interactions forced the students to monitor the language they used while also talking about vocabulary with their learning partner. It was also mentioned that the role of the teacher is important for the success of this type of learning method. It is important to mention that the study did not have more than 47 participants, which means that we should be careful of generalizing the findings. Though this may be the case, the article also included a fair amount of earlier research that support their findings.



## 2.8.2 Extensive reading

I decided to include extensive reading given that I am also looking at how videogames can encourage students to read as well as there being quite a large amount of text in certain genres of games for example, RPG's, Adventure, and Strategy. I therefore used this section to introduce both the method of extensive reading as well as a study that looked at extensive reading and how it influenced the receptive and productive vocabulary of the participants. The concept of extensive reading was also relevant in the sense that it relies on incidental learning which learning through playing videogames also relies on.

Extensive reading has had several different terms used to describe it. As for example: supplementary reading, sustained silent reading, free chosen reading, reading for pleasure, and recreational reading. All these terms have the same basis for describing extensive reading as Harold Palmer and described it as "referring to large amounts of reading with a focus on the meaning of the text." (Debbita et al., 2018, p. 352). This accounts to reading a large quantity and reading while focusing solely on the meaning, or message, of the text. There are several criteria listed in Debbita's article that needs to be found in a successful extensive reading programme. The ones I found the most relevant to my thesis were as follows. 1) The material has a wide range and is at the correct difficulty level for the students. 2) The students decide what they want to read themselves and do so for their own pleasure. And lastly, the reading itself is the reward (2018, p. 352).

The article researched the difference between only using extensive reading (READ), versus using extensive reading in accordance with explicit vocabulary study (READ+). The study used two groups (N=14) of Malaysian undergraduates at the ages between 19 and 22. The groups were tested to find out if they could all begin reading at the same graded reader level. They then did the pre-testing before they went through the two programmes. After seven weeks there were post-tests as well as delayed post-tests later. The results of the study showed that both the READ and READ+ methods contributed to the students' receptive and productive vocabulary, both right after the programmes were conducted and after a window of time had passed as well. The study also showed that READ+ "yielded even higher levels of development for both components." (Debbita et al., 2018, p. 358).

### 2.8.3 Multimodal Glossing

The multimodal glossing introduced by Ramezanai et al. (2021) was described in three levels. The level increased by one every time an additional mode to glossing was added. The examples given in the article were “definitions + pictures, definitions + pictures + audios, definitions + pictures + videos + audios” (Ramezanali et al., 2021, p. 106). This meant that the glossing done on the third level included the definition of the word as well as a picture, a video and audio. This sort of multimodal glossing was relevant to my thesis as videogames include most if not all these modes.

Ramenzanali et al.’s study (2021) was a meta-analytic review of glossing modes and L2 learning and sought out to see if there were any correlations between adding glossing modes and vocabulary gains. Further, the study compared vocabulary gains between the different levels of multimodal glossing, and “To what extent do learner variables, gloss, text, and methodological features moderate the overall benefit of an additional glossing mode for vocabulary gains” (Ramezanali et al., 2021, p. 112). The article compared the results of 22 studies and coded the results in different categories including: “Quality of data sample”, “Learner variables” and “Gloss features” (Ramezanali et al., 2021, p. 114). The results showed that using level 2 was as beneficial as level 3 while also creating a smaller workload for the teacher. The use of level 2 multimodal glossing was therefore recommended. The findings also showed “that additional glossing modes (e.g., pictorial gloss) were more effective when added to L2 textual glosses than L1 textual glosses.” (Ramezanali et al., 2021, p. 128).

## 3 Methods

### 3.1 Hypothesis

When I started creating this research project, I had three hypotheses. They all included that videogames would have an influence on the students' vocabulary. The three hypotheses came from both personal experience with learning vocabulary through gaming and talking to young gamers through work and online gaming. I thought that teens, through gaming, would be able to increase their language knowledge.

The first hypothesis was that genres like RPG and Adventure would widen their implicit vocabulary. This hypothesis was supported by some of the earlier research introduced like: Montero Perez (2020) study, where the importance of large amounts of input was described as a necessity for a learner to gain receptive vocabulary knowledge. The study by Sundqvist (2019) had findings where gamers in general did better on both receptive and productive vocabulary test, though her study showed an increase of vocabulary knowledge in students who played multiplayer games. And lastly the study done by Ng and Raghbir (2021) where they concluded that gaming motivated learners of English. Further, these genres are often filled with general dialogue and dialogue options as well. The player would then need to understand what is being said to choose the best answers to questions and situations. They also need to understand what has been said ahead of time to process the story up until these moments. Another factor for why I thought these genres would increase receptive vocabulary was because these genres of games often have deep lore both inside the games as well as other forms of content like comics, videos, and books. From my own prior experiences with games like "Skyrim", and "The Witcher" I knew how captivating virtual worlds and their histories can be. The only doubts I had about learning new vocabulary from these genres was when thinking of how students played games. Few games force the player to pay attention to the story if the player only wishes to engage with combat and/or other gameplay. Unless the games played relied heavily on story, the students could possibly engage less with vocabulary knowledge than I had first assumed.

The next hypothesis was that students who play genres like MOBA and Shooters would practice communicating with other people in English when playing with other people online. Since the typical language spoken in text and voice chats in online games is English, unless they only play with

Norwegian friends. I thought that the students of which played these genres would score higher on productive vocabulary tests. But even though these types of games can strongly encourage the player to communicate in English there is the possibility that their overall productive vocabulary would not increase much since the communication is often based on short bursts of information consisting of game specific words, phrases, and abbreviations. Still, I did think that playing with other English-speaking players could help the students increase their productive vocabulary and make them more comfortable with producing English.

The third hypothesis was the foundation for the second research question. The hypothesis was that not only what the students played had an influence on their vocabulary knowledge, but also how they played these games. As mentioned in the first hypothesis, not all videogames force the player to consume all story elements, dialogue, or lore. This means that the player is in control of how much English vocabulary they are introduced to. Many games give the player the opportunity to skip cutscenes and dialogues. Different games also have varying amounts of written and spoken English. How the students react when introduced to new vocabulary knowledge also had a large influence on how this study was built up. A thought was that students who used metacognitive learning strategies while playing was also more likely to learn more vocabulary knowledge. This meant that one of the starting points were the thought that students who were more aware of their English vocabulary encounters would also gain more vocabulary knowledge.

The final hypothesis was that games, especially games with other sources of content than the games itself, could work as a platform for encouraging consumption of other English media. This could include anything from books to videos from content creators. Most if not all games have other English media connected to them. Even if it is a game with little to no story it often has other media such as let's plays, strategy guides or highlight videos. Other games might be based on movies, books, or cartoon and this has the possibility of making students want to read or watch more English media. There are also examples of games that has been adapted into other media such as "World of Warcraft" and the "Halo" series. Both universes have been expanded into both movies and books. Because of adaptations there is the possibility that students could be persuaded to consume more English media. I found it important to mention that there are not only adaptations or videos that can work in tandem with videogames. There is also the existence of wiki pages about everything in videogames from characters to weapons or maps in the games. The two

first hypotheses have changed while working with this thesis as the results from the surveys did show that individual genres made a difference when learning vocabulary.

## **3.2 Data instruments**

When creating the pilot questionnaire, I focused on students' extramural English exposure in general, including with respect to gaming. This meant asking about how much they played different genres, what consoles they played on, what and how much they read texts and how much other English media they produced and consumed. The first questionnaire only had a test for receptive vocabulary (PVT in sources) and did not include a test for productive vocabulary. After running a pilot with the first questionnaire I found that it needed to include more questions regarding their learning strategies, especially on account of finding out how the students were playing videogames and learning new vocabulary from the games.

The pilot questionnaire had only 12 questions, while the final version of the questionnaire (see Appendix A) included 19 new questions about which strategies students used when learning new words in videogames. A second test to check their productive vocabulary (AVT in sources) was also added. The final questionnaire consisted of 31 questions and two tests. The test for receptive vocabulary worked by showing students one word at a time. The participant then answered if they knew the word or not. There were a lot of fake words in the test which encourages students to answer truthfully or risk getting penalized for lying. The test for productive vocabulary had a list of words where the participants were supposed to write down up to 4 words they associated with each word in the test.

## **3.3 Developing and validating a scale for vocabulary learning strategies when gaming.**

The scale comprising vocabulary learning strategies took inspiration from Gu (2018, p 349-350). The items were modified to focus on vocabulary learning strategies when gaming and the students answered how much they agreed with the different statements. The table underneath contains example statements from the different strategy categories. The strategies were also divided into distinct categories based on Gu's (2018) Vocabulary Learning Questionnaire.

*Table 3.1 Statements with corresponding strategies and categories*

Categories	Strategies	Statements
Metacognitive strategies	Selective attention	I know if a new word is important for me to understand the game.
Inferencing	Guessing strategies	I use my knowledge of the world when I guess the meaning of a word.
Using dictionary	Dictionary strategies	When I want to know more about the use of a word I know from a game, I look it up.
Taking notes	Choosing which word to put into notebook	I make a note when I see a useful expression or phrase.
	Deciding what information goes into notes	I make a note of the meaning of the word in my mother tongue as well as the English explanation of the word I look up.
Rehearsal	Use of word lists	I regularly review the new words I have learnt.
	Oral repetition	When I try to remember a new word, I say it out loud to myself.
Encoding	Visual encoding	I create a picture in my mind to help remember new words.
	Auditory encoding	I try to remember new words by connecting them to words I already know (and have similar pronunciation).
	Use of word-structure	I focus on how words are formed (word structure) to

		remember them more efficiently.
	Contextual encoding	When I try to remember a new word, I also try to remember the sentence the word was used in.
Activation	Activation	I try to use the newly learned words as much as possible in speech and writing.

A factor analysis was conducted using the Maximum Likelihood Method with Direct Oblimin Rotation. The analysis revealed a three-factor model which can be seen in table 3.2.

*Table 3.2 Learning strategy statements*

**Factor Matrix<sup>a</sup>**

	Factor		
	1	2	3
LSS1	.659	-.373	
LSS2	.586	-.466	
LSS3	.729		
LSS4	.700		
LSS5	.751	-.527	
LSS6	.652		
LSS7	.724		
LSS8	.719		-.470
LSS9	.721		-.323
LSS10	.680		-.346
LSS11	.479	.500	
LSS12	.649	.318	
LSS13	.641		
LSS14	.686	.416	
LSS15	.665	.459	
LSS16	.603	.456	
LSS17	.614		
LSS18	.718		
LSS19	.651		

Extraction Method: Maximum Likelihood.

a. 3 factors extracted. 6 iterations required.

Although we can see in table 3.2 that there were three factors extracted from the answers given by the participants, all the learning strategies (LSS) were accounted for in the first factor. This meant that all the different LSS's had enough statistical similarity that they could be gathered into one variable going forward in the analysis. This combined variable was called Metacognitive Learning Strategies (MLS) because the learners are actively learning new vocabulary by using them while thinking of newly learned vocabulary.

### 3.4 Participants

The participants were all from the same school. The school was an upper secondary school in the south-east of Norway. The participants were from six different classes with two classes from 8<sup>th</sup>, 9<sup>th</sup> and 10<sup>th</sup> grade respectively. To start with the description of the participants I began from the beginning of the questionnaire. The first question was which gender the participants identified as. Table 3.3 shows that the participants were close to a 50-50 split between boys and girls. The remaining 3 participants who answered "other" were such a small percentage that it did not make much of a difference in this study. There was also the possibility that these three participants were students that decided that it would be fun to answer "other".

*Table 3.3 Distribution of gender.*

Options	Number of answers	Percentage
Boy	55	47,4%
Girl	58	50,0%
Other	3	2,6%

The next question was which languages the students considered to be their mother tongue. All except for 5 participants answered either just Norwegian or a mix of Norwegian and another language. Table 4.3 describes the distribution of languages. There were only 23 of the students who had another language than Norwegian as part of their mother tongue. There was also one student with three mother tongues. Only six of the participants had English as one of their first languages which meant that English was a foreign language to 110 of the participants.



*Table 3.4 Distribution of languages.*

Languages	Times mentioned
Norwegian	111
English	6
Setswana	1
Polish	1
Icelandic	2
Swedish	3
Latvian	1
Danish	1
Spanish	2
Sami	1
German	1
Arabic	1
Somali	1
Russian	1
Filipino	1
Ghanaian	1

### **3.5 Procedure**

The questionnaire was conducted by me personally in six different classes. Since all the groups were from the school where I worked as a substitute there was no need for me to introduce myself. I therefore used a little time at the beginning to first talk about how participation was voluntary and give them a short introduction of my research. I then went through the different parts of the questionnaire with the students to be certain that they understood everything I was asking for. After trying out the pilot questionnaire, I also found out that it was a good idea to have the participants do the tests first in case something happened to the web page while they were answering the tests. So, after going through the questions, I had them start with the test for productive vocabulary. I gave them 10 minutes in the beginning and then after the 10 minutes gave them another 5 minutes. This was done intentionally to pressure the students with a shorter time

frame before giving them enough time to finish the test. After this they got another 10 minutes to finish the second test for receptive vocabulary. Lastly the students used the rest of the class to complete the questionnaire.

By being in the classroom while the students answered the questionnaire, I had the reassurance that there would be a minimal amount of confusion among the students. I was comfortable with talking about the project with the students, so it was easier for me to conduct the questionnaire myself instead of using time to explain it to several teachers. Since I also had to borrow class time from other teachers, it was easier to persuade them by taking control of the whole class since this meant that it did not require any extra work for the teachers.

### 3.6 Analysis of data

By using Nettskjema.no it was possible to extract the answers from the questionnaire directly into an Excel spreadsheet. Some time was then used to cleaning up variables and values, changing the names of different questions to make it easier to get an overview, and lastly to find the average and median scores of the two vocabulary tests. The file was then converted into a document in the program "IBM SPSS statistics".

There the first type of analysis used is called a Linear Regression where the variables showed in table 3.5 were used.

*Table 3.5 Overview of variables in correlation with AVT.*

<b>Variables Entered/Removed<sup>a</sup></b>			
Model	Variables Entered	Variables Removed	Method
1	Production, Sandbox/survival, Sport, Metacognitive Vocabulary strategies, MOBA, Vehicle, Party games, RPG, Gender, Strategy, Platformer, Puzzle, Adventure, Shooters, Exposure		. Enter

a. Dependent Variable: AVT

b. All requested variables entered.

## **3.7 Ethics**

### **3.7.1 Developing the questionnaire**

When I designed the questionnaire, I was careful so as not to ask for any sort of personal information that could be used to identify the participants. There were two questions that could be considered personal information. The first one being “what gender do you identify as?”. If someone knew exactly who took the tests, then it would increase the possibility of finding one student by reducing the amount by half. The second question was “What is your mother tongue? Do you have more than one? Write them down here”. This would make it possible to increase the chances of finding a particular student if the participant had another mother tongue than just Norwegian, but since I did not disclose which school these students went to it would not be possible for anyone to find any identifying information from the questionnaire.

### **3.7.2 Choosing the participants**

Sampling was convenience-based. The participants were all students from a school where I worked while a student myself. This made it easy for me to gain access to classes who could participate in my questionnaire. Further, this made it easy for me to take time out of my day to complete the project since I was already at the school for work. And lastly, it made it possible to make appointments with teachers to get an hour of their time with their classes. I also thought it was important to mention my role in the classroom. I worked as a substitute teacher at the school where I administered the questionnaire. I did not have particularly close relations with any of the classes which were a part of the research. This meant that they knew who I was, I knew who they were, but there was little chance that they would change their answers to impress or surprise me, especially when the questionnaire was anonymous. It was also helpful knowing the students since as mentioned before it saved me some time with respect to introducing the project I was doing, and it helped with motivating some students who wondered why they would want to take part in the project.

### 3.7.3 Transparency

As mentioned before, I started each of the six classes by telling the students about the research and telling them all about how it was voluntary to take part in the survey. I also told them that there would be no negative consequences for them if they chose to participate in the project and that their responses would be deleted a short while after, and that the questionnaire was completely anonymous. Since the questionnaire was administered online, via *Nettskjema.no* it was impossible for me to find out which answers were from which student. I also wanted to carry out the questionnaire myself because it gave me the reassurance that I knew that I had given every participant all the needed information and that it was important that they answered truthfully. I also specified that it was a lot better to not participate in the questionnaire than providing false answers.

### 3.7.4 Data safety

As there was no identifying personal information requested in the questionnaire, I did not need to take any precautions in managing the data. As mentioned before, the questionnaire was both developed and answered in *Nettskjema.no* and was completely anonymous. This meant that no one including myself could find out who had participated in the project. The anonymity of the students is also secured as I did not write down which school or classes were used for the project in any of the files used in the research project. The only questions where I asked for any sort of information which could be used to identify the participants are the two first questions where I asked about their gender and which languages, they considered their first languages.

## 4 Results

This chapter begins with the results of the scores from the students' receptive and productive vocabulary tests (section 4.1). The subsequent section (4.2) gives a general overview of the participants' responses in the questionnaire. Results from the test scores are then placed in conjunction with the responses from the questionnaires. This section made use of the following functions in SPSS: Multivariate and Linear Regression (4.3). The results were answers from 116 students.

### 4.1 Test scores

The test scores were from two different vocabulary tests where the first one tested the students' productive vocabulary while the second one tested their receptive vocabulary. Table 4.1 describes the mean and median score of the students as well as the lowest and highest scores. The highest possible score for the productive test was 120 points while the highest possible score for the receptive test was 10 000 points. The receptive test had groups of ranges that describes the estimated number of words the test taker knows and describes their proficiency. A score in the 6 000 to 10 000 range is good for a non-native speaker of English. Between 3 500 and 6 000 words is typical for an intermediate level learner. Scores between 2 000 to 3 500 words are normal for competent beginners and scores below 2 500 should be treated with caution and can possibly be wrong. The productive vocabulary test had no given ranges in its manual. The scores were therefore divided into three ranges based on the scores reported by the students. A score between 1 and 50 was considered below average, a score between 51 and 79 was average, while scores of 80 up to 120 was considered above average.

*Table 4.1 Test scores*

Test	Mean	Median	Lowest score	Highest score
Productive	69	65	4	120
Receptive	4611	4570	2019	8266

## 4.2 Questionnaire answers

### 4.2.1 Distribution of platforms the students played games on

The next question shows what type of platforms the students used to play on. Table 4.2 shows the distribution of platforms. Consoles are gaming platforms like “PlayStation”, “Xbox” and “Nintendo Switch”. The “other” category was not specified by either me or the students. Someone might have misunderstood the category of “consoles” and thought that their console was not included in the questionnaire.

*Table 4.2 Platforms used for gaming by students.*

Platforms	N	Percentage
PC	56	48,3%
Consoles	53	45,7%
Phones	70	60,3%
VR	10	8,6%
Not playing games	23	19,8%
Other	9	7,8%

### 4.2.2 Most played video game genres

According to the questionnaire the genres that were played by the most students were Strategy and Shooters followed by Vehicle, Sandbox/Survival and Sport games. Table 4.3 shows examples of games the students mentioned in the most played genres. “GTA”, “Battlefield” campaigns and “Star Citizen” are the games mentioned where there is a large amount of spoken English. All of these games also have the opportunity to turn on subtitles which then increases the amount of written English in these games if the students used this feature.

*Table 4.3 Examples of games in the most played genres*

Genres	Number of students playing the genre	Examples of games
Strategy	53	Star citizen, Clash of Clans

Shooters	50	Fortnite, Battlefield and Apex Legends
Vehicle	46	Rocket League, V-Rally 4 and Forza
Sport	44	FIFA, NBA and Wii Sport
Sandbox/survival	43	Minecraft, Roblox and GTA

#### 4.2.3 Written media based on Games and Games based on Written media.

This section shows an overview of all the different literature the students had read that was either based on a video game or where the games have been adapted to books or cartoons later. Table 4.4 shows the number of times these literary works were mentioned by the students.

*Table 4.4 Literature and games mentioned by students.*

Literature	Times mentioned
Harry Potter	8
One Piece	1
Minecraft	2
Gacha	1
Genshin Impact	1
The Promised Neverland	1
Donald Duck	1
Naruto	1
Zelda	2
Dragon Ball	2
Demon Slayer	1
Overwatch	1

#### 4.2.4 Time spent on receptive and productive English media activities.

This section shows two tables containing an overview of the average amount of time the students reported using on productive and receptive English media activities during an average week. Table 4.5 shows how many students reported doing receptive English media activities while table 4.6 shows how many students reported doing productive English media activities.

*Table 4.5 Reported time spent on receptive English media activities.*

Receptive media	No time at all	1-4 hours	5-10 hours	11-15 hours	16-24 hours	More than 24 hours
Books	68	42	2	1	1	2
Articles	63	50	2	0	0	1
Wiki- pages	75	34	4	1	1	1
Comics/manga	94	16	5	0	0	1
Instructions	66	39	5	1	1	1
Blogposts	69	39	5	1	1	1
TikTok	10	19	43	24	10	10
YouTube	23	47	28	10	4	4
Twitch/streaming	86	24	5	0	0	1
Social media	11	40	27	4	5	1
Movies	18	61	27	4	5	1
Series	17	49	25	15	9	1

*Table 4.6 reported time spent on productive English media activities.*

Productive media	No time at all	1-4 hours	5-10 hours	11-15 hours	16-24 hours	More than 24 hours
TikTok	72	26	6	11	0	1
YouTube	100	9	4	2	0	1
Twitch/streaming	107	7	1	0	0	1
Social media	68	27	9	4	6	2



Wiki-pages	110	3	2	0	0	1
Game guides	108	7	0	0	0	1
Comics/manga	110	3	2	0	0	1
Blogposts	97	15	3	0	0	1

### 4.3 Statistical analysis of gathered data.

In this section I described the findings discovered using the program “IBM SPSS statistics”. The program was used to look at the correlation between different factors introduced in the questionnaire. It is important to mention that the test score for Productive Vocabulary in the tables underneath is called Active Vocabulary Test (AVT) and the test score for Receptive Vocabulary is called Passive Vocabulary Test (PVT). The factors called Exposure and Production are comprised of the other types of media the students either consume or produce. The learning strategies are compiled into one single variable called Metacognitive Vocabulary strategies.

#### 4.3.1 Linear Regression Analysis

The focus of the linear regression analysis was first to look at how well the entered variables described in table 4.7 and table 4.8 could, when combined and analysed, be used to anticipate the participants’ scores in the two vocabulary tests conducted in this research. Linear regression was then used to look at which variables correlated with higher or lower scores in the AVT’s and PVT’s respectively.

The AVT dependent linear regression analysis was done with the variables: Genres of games, production of media and consumption of media. By putting in the genres of games together with the amount of produced and consumed media it was possible to find out how much the AVT is influenced (statistically) on average by these entered variables. By looking at the output it is possible to investigate the correlation between the combined requested variables and the AVT scores.

Table 4.7 Parameter estimates with AVT scores as the dependent variable.

Model Summary <sup>b</sup>					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.475 <sup>a</sup>	.226	.107	32.889	2.041

a. Predictors: (Constant), Production, Sandbox/survival, Sport, Metacognitive Learning Strategies, MOBA, Vehicle, Party games, RPG, Gender, Strategy, Platformer, Puzzle, Adventure, Shooters, Exposure

b. Dependent Variable: AVT

By looking at table 4.7 we get the important results from the linear regression analysis. The value we look at here is the R Square which can be described with an example: “the proportion of variance in the dependent variable (science) which can be predicted from the independent variables (math, female, socst and read). (“Regression Analysis | SPSS Annotated Output - University of California ...”) This value indicates that 48.9% of the variance in science scores can be predicted from the variables” (UCLA: Statistical Consulting Group, n.d.). By then looking at table 4.7 we can find that the “R Square”, from table 4.7, is 22.6%. This means that 22.6% of the variance in AVT scores can be predicted from the requested variable. To sum up, the correlation between all the requested genres and the AVT scores is not large.

Table 4.8 Summary of Regression Analysis with PVT as dependent variable.

Model Summary <sup>b</sup>					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.549 <sup>a</sup>	.302	.195	1734.969	1.841

a. Predictors: (Constant), Production, Sandbox/survival, Sport, Metacognitive Learning Strategies, MOBA, Vehicle, Party games, RPG, Gender, Strategy, Platformer, Puzzle, Adventure, Shooters, Exposure

b. Dependent Variable: PVT

The variables in table 4.8 are the same as in table 4.7, except that the correlation we are looking currently is between them and the PVT scores. We now look at the value of “R Square” in table 4.8. This shows that the value is 30.2% which by using the earlier explanation means that 30.2% of the

variance in PVT scores can be predicted from the requested variable. This shows that there is some correlation between these variables and PVT than with AVT, even though the correlation is not convincingly large here either.

#### 4.3.1.1 Statistical significance of variables with correlations to PVT

The Linear Regression analysis tool was used to “determine whether there are any statistically significant differences between the means of two or more independent (unrelated) groups” (Lærd Statistics, n.d.) The same variables were used as when looking at the variables as one overall group, but here the focus was viewing the variables one by one. There were two values which were important in these table. These were the B values and Sig. which means significance value. If B is positive, it means that the given variable has a positive correlation with the test scores, while a negative values indicates a negative correlation with the test score. In SPSS’s Linear Regression there is a statistical difference in Vocabulary tests based on the given variable if the significance value is below .05. By then viewing the B value of the variables given with a lower Sig. than 0.05 we can get an indication of how the variables predicts either of the vocabulary test score.

This section includes the presentation of which variables from table 4.7 were statistically significant in correlation with the Productive vocabulary tests as well as a breakdown of the findings from the analysis.

*Table 4.9 Linear Regression with PVT as the dependent variable.*

		Parameter estimates						Collinearity Statistics	
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Tolerance	VIF	
		B	Std. Error	Beta					
1	(Constant)	5497.126	1225.254		4.487	<.001			
	Adventure	405.058	216.436	.214	1.871	.064	.543	1.842	
	Vehicle	-560.260	209.246	-.267	-2.678	.009	.717	1.395	
	Shooters	-103.024	169.730	-.071	-.607	.545	.523	1.914	
	Party games	-667.663	356.081	-.229	-1.875	.064	.478	2.092	
	Sandbox/survival	86.972	217.031	.046	.401	.689	.539	1.855	
	Platformer	64.548	308.135	.023	.209	.835	.586	1.706	
	MOBA	771.799	498.526	.146	1.548	.125	.801	1.249	
	Puzzle	270.180	331.793	.093	.814	.417	.551	1.816	

RPG	69.712	319.159	.023	.218	.828	.634	1.577
Sport	55.200	157.613	.034	.350	.727	.770	1.299
Strategy	230.488	227.931	.107	1.011	.314	.637	1.571
Gender	-714.565	370.897	-.203	-1.927	.057	.642	1.557
Metacognitive Learning Strategies	9.224	9.063	.097	1.018	.311	.781	1.281
Exposure	6.179	34.313	.022	.180	.857	.495	2.018
Production	-105.174	49.190	-.256	-2.138	.035	.497	2.011

a. Dependent Variable: PVT

In table 4.9 we had the separate variables with the Receptive Vocabulary Tests scores as the dependent variable. We can see that there were two variables with significance values lower than .05. These were Vehicle and Production (earlier explained as a collection of the different media the students produce). There were also three other variables that were close to having a Sig. value lower than .05. These three variables were Adventure Games, Party Games and Gender.

Vehicle-based games had a Sig. value of .009 which meant that there was a large statistical significance with vehicle-based games in correlation with the PVT score. Since the B value of Vehicle games was a negative 560.260 it indicated that there was a pattern where the students who played a lot of vehicle-based games scored lower on the PVT. There were in total 46 out of 116 students that played vehicle-based videogames according to the questionnaire which also shows that there were not just a few participants that influenced the analysis.

The next variable with a low Sig. value was Production with a value of .035. This meant that Production had a lower statistical significance than vehicle-based videogames but was still very relevant as it was lower than .05. The B value of Production was a negative 105 which indicated that the negative pattern was less noticeable than with the students playing vehicle-based games. Also, with Production it was important to look at how much time the average student used to produce English media per week. Excel was used to sum up the amount of time they used in a week to produce English media. These values were divided with the number of participants. It is important to note that there were 8 different media in this part of the questionnaire which means that if the students did not produce any English media at all, they would get a summed score of 8. The average of the summed number divided by the number of participants was 10.34 which meant that the average student used either 1-4 hours a week to produce two different types of English media,

or that they used 5-10 hours a week to produce a single type of English media. 71 of the participants produced less than average of English media. This means that there were 45 students that used more than or the exact average amount of time to produce a form of English media. By looking at these numbers there is a possibility that there was a small amount of students that both scored low on the PVT and also produced a large amount of English media.

The last three variables that were close to having a Sig. value lower than .05 were Adventure Games, Party Games and Gender. Of these three only Adventure Games had a positive correlation with the PVT score. With a Sig. value of .064 and a B value of 405 it shows that the students who played more games in the Adventure genre also scored higher on the PVT. Party Games on the other hand had a Sig. value of .064 and a B value of negative 667.663. This indicates that the students who played a lot of Party Games also scored lower than the average at the PVT. The last of these three variables was gender. In the coding book for the questionnaire boys are given the value 1, girls are given the value 2 while “other” is given the value 3. As seen in table 3.3 the distribution of genders was close to 50-50 except for three students reporting themselves as “other”. These three participants might create a small margin of error in the analysis, but as the amount is low the impact in the analysis should also be small. According to table 4.9 the B value of gender was negative 71.565 which means that a higher value in the variable correlates to a lower score on the PVT. Since girls in the questionnaire had the value of 2 while boys had a value of 1, this means that the girls scored lower than the boys on the PVT.

#### 4.3.1.2 Statistical significance of variables with correlations to AVT

This section is similar to the last section in that it presents the findings of the Linear Regression analysis done on the correlation between the variables given in table 4.7, but this time with the AVT as the dependent variable.

*Table 4.10 Linear Regression with AVT as the dependent variable.*

Parameter estimates								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	64.300	23.226		2.768	.007		

Adventure	-2.458	4.103	-.072	-.599	.550	.543	1.842
Vehicle	-4.787	3.967	-.127	-1.207	.230	.717	1.395
Shooters	3.238	3.217	.124	1.006	.317	.523	1.914
Party games	12.458	6.750	.237	1.846	.068	.478	2.092
Sandbox/survival	1.383	4.114	.041	.336	.737	.539	1.855
Platformer	-7.488	5.841	-.149	-1.282	.203	.586	1.706
MOBA	6.614	9.450	.070	.700	.486	.801	1.249
Puzzle	-8.544	6.290	-.163	-1.358	.177	.551	1.816
RPG	-2.200	6.050	-.041	-.364	.717	.634	1.577
Sport	-3.772	2.988	-.128	-1.262	.210	.770	1.299
Strategy	.948	4.321	.024	.219	.827	.637	1.571
Gender	-1.616	7.031	-.025	-.230	.819	.642	1.557
Metacognitive Learning Strategies	.402	.172	.236	2.341	.021	.781	1.281
Exposure	.392	.650	.076	.602	.548	.495	2.018
Production	-1.669	.932	-.226	-1.790	.077	.497	2.011

a. Dependent Variable: AVT

In table 4.10 we had the separate variables with the Productive Vocabulary Tests scores as the dependent variable. We can see that there is one variable with a significance value lower than .05. That is Metacognitive Learning Strategies (earlier explained as the collection of the learning strategies the students use). There are also two other variables that are close to having a Sig. value lower than .05. These two variables are Party Games and Production.

Metacognitive Learning Strategies has a Sig. value of .021. This meant that the use of the vocabulary strategies while playing games had a large statistical significance for their AVT scores. According to the B value of this variable being positive there was a positive correlation between actively using the MLS and how well they did on their AVT. Since the value was .402 the scores of the students who used these strategies were higher than those who did not.

The two variable that were close to having a Sig. value of under .05 were Party Games and Production. Party games had a Sig. value of .068 which means that it was close to having a statistically significant correlation between playing party games and the scores on their AVT's. Party games had a positive B value of 12.458 which meant that the students who reported playing a lot of Party Games also had a higher AVT score than those who did not. This is the opposite result of the

PVT scores mentioned earlier, but this will be touched upon later in the discussion section of this article.

The last variable that was close to having a statistically significant value was Production. The Sig. value of Production was .77 and means that it was close to being statistically significant. Table 4.10 shows that Production had a negative B value of 1.669 which meant that those who reported that they produced any sort of media scored lower on the Productive Vocabulary Tests. The different media that the students could report that they produced in the questionnaire was TikTok, Youtube videos, Streaming, social media, Wiki-articles, Game guides, Comics or manga and Blog posts. Out of these options, the ones most students reported to produce was TikTok videos other social media content. Any of the other media options had less than twenty reports. 44 students reported that they produced TikTok videos while 40 students reported that they produced other social media content. What the students might consider to be production of English TikTok videos or social media content might vary from student to student.

### 4.3.2 Multivariate Regression Analysis

In this section I presented the relevant findings from the Multivariate Regression Analysis done in “IBM SPSS statistics”. The analysis was done to see if gaming genres could predict engagement in receptive and productive activities using English media other than video games.

In section 4.3.2.1 the focus was to see if the combined amount of gaming was predicative of how much time the students used on productive and receptive English media activities. Then section 4.3.2.2 presents the findings of which of the individual game genres had a correlation to how much they produced or consumed different English media.

#### 4.3.2.1 *Combination of game genres’ correlation with productive and receptive English media*

This section will first introduce the findings from when the combined gaming genres were used to see if gaming in general was predictive of the production of English media. Table 4.11 was used to give an overview of the combined gaming genres and if the reported amount of gaming had the ability to predict how much time they used on the production of English media. The section then

goes on to present if these same combined game genres could predict the amount of receptive English media activities the students reported taking part in. Both table 4.11 and 4.12 was edited to only show the corrected model part of the tables, but the full table is available in the appendix (see Appendix B and Appendix C).

In both Table 4.11 and table 4.12 there are some values that will be used to explain the results of the analysis. The df value refers to “the degrees of freedom for the single sample t-test are simply the number of valid observations minus 1. We lose one degree of freedom because we have estimated the mean from the sample”. (UCLA: Statistical Consulting Group, n.d.) This value is the same for all the English media activities since all of the game genres were included in the analysis. The Sig. value has been explained earlier and follows the same formula with it being significant if lower than .05. The next value was used is Partial Eta Squared (PES) which shows, together with Sig., how much of an impact the given variable has to the Dependent Variable. If the value is .01 it means that the variable has a small effect. If the value is .06 it has a medium effect and if the value is .14 or higher it has a large effect on the dependent variable. The last values that were used were R Squared and Adjusted R Squared. Both R Squared and Adjusted R Squared, which has been explained earlier in section 4.3.1, indicate the percentage of the variables that can be used to predict the amount of time the participants used to produce and consume English media. The letters ranging from a-h in table 4.11 and a-l in table 4.12 corresponds to the Dependent Variables in the tables.

*Table 4.11 Game genre’s combined amount of correlation to predicting time spent producing English media.*

<b>Tests of Between-Subjects Effects</b>									
Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power <sup>i</sup>
Corrected Model	TikTok	9.693 <sup>a</sup>	11	.881	.787	.653	.078	8.652	.411
	YouTube	10.207 <sup>b</sup>	11	.928	1.859	.054	.167	20.447	.848
	Twitch/streaming	4.096 <sup>c</sup>	11	.372	1.258	.259	.119	13.842	.647
	Social media	14.648 <sup>d</sup>	11	1.332	.858	.583	.085	9.438	.450
	Wiki-pages	1.687 <sup>e</sup>	11	.153	.473	.916	.049	5.205	.243
	Game guides	.879 <sup>f</sup>	11	.080	.273	.990	.029	3.002	.147
	Comics/manga	1.005 <sup>g</sup>	11	.091	.276	.989	.029	3.038	.149



Blogposts	2.493 <sup>h</sup>	11	.227	.531	.879	.054	5.836	.273
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- a. R Squared = .078 (Adjusted R Squared = -.021)
- b. R Squared = .167 (Adjusted R Squared = .077)
- c. R Squared = .119 (Adjusted R Squared = .025)
- d. R Squared = .085 (Adjusted R Squared = -.014)
- e. R Squared = .049 (Adjusted R Squared = -.054)
- f. R Squared = .029 (Adjusted R Squared = -.076)
- g. R Squared = .029 (Adjusted R Squared = -.076)
- h. R Squared = .054 (Adjusted R Squared = -.048)
- i. Computed using alpha = .05

In table 4.11 we can observe that the only variable with a Sig. value close to being below .05 was YouTube. YouTube also had a PES value of .167 which means that gaming had a large impact on the amount of time used producing YouTube content. Along with YouTube, we also have the Twitch/streaming variable with a PES value of .119. This means that the amount of time spent gaming had a medium impact on the time used to produce streaming content. According to the answers given in the questionnaire, 15 students produced YouTube videos while 8 students reported that they produced streaming content. This shows that out of the 116 participants there were not that many students spending time producing these media. Lastly, we can look at the R Squared and Adjusted R Squared values. YouTube had a value of .167 and .077 while Twitch/streaming had a value of .119 and .025. This means that the combination of the game genres had a small statistical chance of predicting how much time the participants used on the production of YouTube and streaming activities.

*Table 4.12 Game genres combined amount of correlation to predicting time spent consuming English media.*

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power <sup>m</sup>
Corrected Model	Books	13.187 <sup>a</sup>	11	1.199	1.588	.113	.146	17.470	.772
	Articles	2.850 <sup>b</sup>	11	.259	.533	.877	.054	5.860	.274
	Wiki-pages	11.061 <sup>c</sup>	11	1.006	1.619	.104	.149	17.806	.782
	Comics/manga	6.868 <sup>d</sup>	11	.624	1.393	.187	.131	15.328	.703
	Instructions	2.606 <sup>e</sup>	11	.237	.485	.909	.050	5.335	.249

Blogposts	12.988 <sup>f</sup>	11	1.181	1.900	.048	.170	20.905	.858
TikTok	9.826 <sup>g</sup>	11	.893	.482	.911	.049	5.297	.247
YouTube	38.268 <sup>h</sup>	11	3.479	2.869	.003	.236	31.562	.975
Twitch/streaming	8.546 <sup>i</sup>	11	.777	1.783	.066	.161	19.613	.829
Social media	27.434 <sup>j</sup>	11	2.494	1.123	.351	.108	12.354	.585
Movies	13.223 <sup>k</sup>	11	1.202	1.264	.256	.120	13.900	.649
Series	21.058 <sup>l</sup>	11	1.914	1.458	.159	.136	16.034	.727

a. R Squared = .146 (Adjusted R Squared = .054)

b. R Squared = .054 (Adjusted R Squared = -.048)

c. R Squared = .149 (Adjusted R Squared = .057)

d. R Squared = .131 (Adjusted R Squared = .037)

e. R Squared = .050 (Adjusted R Squared = -.053)

f. R Squared = .170 (Adjusted R Squared = .081)

g. R Squared = .049 (Adjusted R Squared = -.053)

h. R Squared = .236 (Adjusted R Squared = .154)

i. R Squared = .161 (Adjusted R Squared = .071)

j. R Squared = .108 (Adjusted R Squared = .012)

k. R Squared = .120 (Adjusted R Squared = .025)

l. R Squared = .136 (Adjusted R Squared = .043)

m. Computed using alpha = .05

Now on to how the combination of the game genres can be used to predict the amount of time used on different receptive English media activities. Out of the different Dependent Variables both blogposts and YouTube had lower than .05 Sig. value. The Twitch/streaming variable also had a Sig. value close to this. By then looking at the PES values of the different variables we can also observe that books and wiki-pages were largely impacted with series coming close having a PES value of .136. The amount of students that reported using time on these receptive media tasks were: YouTube with 86 students, series with 89 students, blogposts with 45 students, books with 45 student, wiki-pages with 39 students and Twitch/streaming with 29 students. We will now view the R Squared and Adjusted R Squared values of the significant Dependent Variables:

- YouTube has the values .236 and .154.
- Series has the values .136 and .043.
- Blogpost has the values .170 and .081.
- Books has the values .146 and .054.
- Wiki-pages has the values .149 and .057.
- Twitch/streaming as the values .161 and .071.

This shows that there were small chances of general gaming to predict the amount of time spent on these receptive English media activities. YouTube was the activity that had the highest likelihood of being predicted by the amount of time spent gaming.

#### 4.3.2.2 Individual game genres' correlation to productive and receptive English media

This section first presents which of the individual game genres had a correlation with the production of English media. Table 4.13 includes an overview of the individual gaming genres and its correlation with how much time the students used on productive English media activities. The section then, in table 4.14, presents which individual game genres had a correlation with the amount of receptive English media activities the student reported taking part in. Both table 4.13 and table 4.14 were edited to only show the significant genres and which English media they had a correlation with. The un-edited table will be found in the Appendix section of the document (see Appendix D and Appendix E). The values used to present the findings in tables 4.13 and table 4.14 were the Sig. values and the B values.

Table 4.13 Individual game genres' correlation to productive English media.

		Parameter Estimates								
Dependent Variable	Parameter	B	Std. Error	t	Sig.	95% Confidence Interval		Partial Eta Squared	Noncent. Parameter	Observed Power <sup>a</sup>
						Lower Bound	Upper Bound			
YouTube	Intercept	.913	.292	3.129	.002	.334	1.492	.088	3.129	.873
	Adventure	-.157	.086	-1.828	.071	-.328	.013	.032	1.828	.441
Sosial media	Intercept	1.803	.515	3.505	<.001	.783	2.824	.107	3.505	.935
	Sport	.208	.110	1.899	.060	-.009	.426	.034	1.899	.469
	Party games	.439	.248	1.769	.080	-.053	.931	.030	1.769	.418

a. Computed using alpha = .05

As seen in table 4.13 there were none of the game genres, in correlation with the productive English media activities, that had a lower Sig. value than .05. Out of all the different correlations (see Appendix D), three of them were close to having a low enough value. These three items were:

- Adventure games and YouTube with the value .071.
- Sport games and social media with the value .060.
- Party games and social media with the value .080.

By then looking at the B value, it is possible to see how playing these genres of games had an impact on the amount of time the students used on the productive English media activities. Adventure games had a negative B value of .157 and shows that the students who played this genre of games used less time on producing YouTube related content. Sport games had a positive B value of .208 which means that the students who played more sport games also used more time on productive activities in the form of social media. Last are party games which had a positive B value of .439. This shows that the time used playing party games had the largest influence on the amount of time the students used producing social media content.

*Table 4.14 Individual game genres' correlation with receptive English media*

		Parameter Estimates								
Dependent Variable	Parameter	B	Std. Error	t	Sig.	95% Confidence Interval		Partial Eta Squared	Noncent. Parameter	Observed Power <sup>a</sup>
						Lower Bound	Upper Bound			
Books	Intercept	1.256	.359	3.499	<.001	.544	1.967	.107	3.499	.934
	Shooters	-.171	.082	-2.085	.040	-.333	-.008	.041	2.085	.542
Wiki-pages	Intercept	1.403	.326	4.310	<.001	.757	2.049	.154	4.310	.990
	Strategy	.180	.096	1.869	.064	-.011	.372	.033	1.869	.457
Comics/manga	Intercept	.925	.276	3.346	.001	.377	1.474	.099	3.346	.912
	MOBA	.368	.189	1.947	.054	-.007	.743	.036	1.947	.488
Instructions	Intercept	1.538	.289	5.328	<.001	.965	2.110	.218	5.328	1.000
	Vehicle	-.163	.082	-1.995	.049	-.325	-.001	.038	1.995	.506
Blogposts	Intercept	1.365	.326	4.194	<.001	.720	2.011	.147	4.194	.986
	Vehicle	-.244	.092	-2.645	.009	-.426	-.061	.064	2.645	.745

	Shooters	-.187	.074	-	.013	-.334	-.040	.058	2.516	.703
	Platformer	.285	.134	2.516	.036	.019	.551	.042	2.125	.558
TikTok	Intercept	2.760	.563	4.907	<.001	1.645	3.876	.191	4.907	.998
	Sport	.212	.120	1.767	.080	-.026	.450	.030	1.767	.417
Youtube	Intercept	1.100	.455	2.418	.017	.198	2.002	.054	2.418	.668
	RPG	.370	.200	1.849	.067	-.027	.768	.032	1.849	.449
	Strategy	.313	.135	2.324	.022	.046	.580	.050	2.324	.634
Twitch/streaming	Intercept	1.016	.273	3.727	<.001	.475	1.557	.120	3.727	.958
	Shooters	.151	.062	2.422	.017	.027	.274	.054	2.422	.670
	Sandbox/survival	.147	.080	1.835	.069	-.012	.307	.032	1.835	.444
Social media	Intercept	2.881	.615	4.682	<.001	1.661	4.102	.177	4.682	.996
	Sport	.281	.131	2.138	.035	.020	.541	.043	2.138	.563
	Platformer	.466	.254	1.837	.069	-.037	.969	.032	1.837	.444
Movies	Intercept	1.423	.403	3.532	<.001	.624	2.222	.109	3.532	.938
	Strategy	.316	.119	2.644	.009	.079	.552	.064	2.644	.745
Series	Intercept	2.514	.473	5.311	<.001	1.575	3.453	.217	5.311	1.000
	RPG	.411	.208	1.971	.051	-.003	.824	.037	1.971	.497
	Vehicle	-.234	.134	-	.083	-.500	.031	.029	1.749	.410
	Sandbox/survival	-.300	.139	-	.034	-.576	-.024	.043	2.153	.568
	Platformer	.509	.195	2.610	.010	.122	.896	.063	2.610	.734

a. Computed using alpha = .05

As seen in table 4.14 there was a large amount of output with a small Sig. value when analysing the correlation between game genres and receptive English media activities. The only receptive English media activity not showing any significant Sig. values was articles. This first part will look at the lower Sig values before moving on to the pairs having only close to a relevant Sig. value. The genres paired with receptive activities with a lower Sig. value than 0.05 were:

- Shooters and Books with the value .040
- Vehicle and instructions with the value .049
- Vehicle and blogpost with the value .009
- Shooters and blogposts with the value .013
- Platformer and blogposts with the value .036
- Strategy and YouTube with the value .022
- Shooters and Twitch/streaming with the value .017.

- Sport and social media with the value .03
- Strategy and movies with the value .009
- Sandbox/survival and series with the value .034
- Platformer and series with the value .010

The focus will now be to look at the positive B values of the pairs with a low Sig. value before moving on to the pairs that had a negative B value. In table 4.14 we can see that out of these pairs, six of them had a positive B value. These are platformer and blogposts, strategy and YouTube, shooters and Twitch/streaming, sport and social media, strategy and movies and platformer and series. Here we can see that most of the positive B values are lower than .300. The exceptions are strategy and YouTube with the value .313, strategy and movies with the value .316, and platformer and series with the value .509. This meant that the positive correlation between genre and receptive activity was the largest between platformer and series. It is also important to mention that strategy constituted two of the three pairs with the highest B value.

This next part reports on the variable pairs with negative B values as well as lower than .05 Sig. values. As seen in Table 4.14 there were five of these pairs. These are shooters and books, vehicle games and instructions, vehicle and blogposts, shooters and blogposts, and sandbox/survival and series. Out of these 5 pairs, the two of them with the largest negative B value were vehicle and blogpost with a negative .244 as well as sandbox/survival and series with a negative .300 B value. Here we can see that the vehicle genre was mentioned twice in this statistic.

As we can see in table 4.13, there were also many outputs having a close to significant Sig. value. The pairs that had a close to significant Sig. value were:

- Strategy and wiki-pages with the value .064
- MOBA and comics/manga with the value .054
- Sport and TikTok with the value .080
- RPG and YouTube with the value .067
- Sandbox/survival and Twitch/streaming with the value .069
- Platformer and social media with the value .069
- RPG and series with the value .051

- Vehicle and series with the value .083

Now the focus is to first look at the B values of these pairs. Out of the eight pairs, only one of them were negative. This was the pairing of the videogame genre vehicle and the English media series, with a B value of negative .234. On the other hand, there were seven of these pairs that had a positive value. Those of the pairs with the highest positive B values were platformer and social media with the value .466, and RPG and series with the value .411. The next two pairs had almost identical B values and were RPG and YouTube with the value .370, and MOBA and comic/manga with the value .368. Lastly, it seems relevant to mention that even when including Sig values close to .05, there are still none of the game genres that have a significant impact on the time spent with the media type article. This is mentioned here because articles were the most popular form of written receptive media as seen in table 4.5.

## 5 Discussion

This section is focused on the discussion of the research questions together with the results from the research, prior research, and theory. The sections consist of discussions regarding the three research questions and how they can be answered by viewing the statistic findings together with earlier research and theories. I will start the first two subsections with a list of the relevant earlier research, and then discuss the study's findings considering this. Since the different studies have already been introduced in section 2 of the thesis, I do not summarize the research, but will instead draw information from section 2 while providing the source.

### 5.1 The connection between playing different genres of games and vocabulary knowledge.

The first research question was: *What is the relationship between playing different genres of games and vocabulary knowledge?*

As explained briefly in the introduction section of this master's thesis, this research question started out with the intent of trying to find a correlation between students' gaming habits and their vocabulary knowledge, as well as taking a closer look at the possibility that playing different genres of games could have either a positive or negative impact on the development of a learner's vocabulary knowledge. The discussion of this research question starts by gathering the relevant earlier studies with their related theories and results. After this the results from section 4.3.1 will be the main part of this discussion since there are findings there that are relevant to the correlation between vocabulary knowledge and the time used playing different genres of videogames.

The first relevant study was done by Sundqvist (2019) where she presented results where frequent player of MMORPG's and then player of single player games had higher test scores than non-gamers. The next study done by NG and Raghbir (2021) concluded that gaming could motivate ESL learners as well as enhance their learning capabilities. Fløan (2015) found that both playing and watching gameplay of the videogame "Black and White" increased the students' scores on a translation test. These results showed that the learners did not need to play the videogame themselves, but that the content itself gave the learner an increase in vocabulary knowledge.



Gaming as extramural English (Sylvén & Sundqvist, 2012) is relevant by providing the groundwork for including playing videogames as a way for L2 learners to gain vocabulary knowledge. Sylvén & Sundqvist (2012) also emphasises the importance of motivation and how gaming can be just that for some learners. The last study I mention in this part was done by Ramenzanali et al.'s (2021). It provided data on how multimodal glossing could help learners of a L2 to increase their vocabulary. The study concluded that both level 2 and level three of the glossing just as effective. This means that by adding modes to glossary, it increases the learning to a certain degree. The most important finding, with a connection to this research question, done by Ramenzanali et al. (2021) may be that the use of pictorial glossing was most effective when added to L2 textual glosses, which gives support for increased vocabulary knowledge by combining pictures and text when the text is in the L2 of the learner.

When discussing this research question, I decided to distinguish between receptive and productive vocabulary. This section will therefore first focus on the correlation between productive vocabulary knowledge and videogames, before moving on to receptive vocabulary knowledge.

### 5.1.1 Productive vocabulary knowledge

This section starts by addressing the information found in table 4.7. The output from the model summary showed that there was little correlation between playing more videogames in general and the score the students reported getting on their AVT's. With a R Square value of .226 and an Adjusted R Squared value of .107 there is only a small chance of guessing the students' scores on the AVT by observing the amount of time they spent playing videogames. Though this may be the case in the data material I have collected, other studies have shown an increase in vocabulary knowledge from unspecified genres of games. With studies like Sundqvist (2019) where the students who played unspecified singles player games scored better on the provided tests. Further we have the study done by NG and Raghbir (2021). Here, one of the conclusions was that learners who played videogames gained increased motivation to learn English vocabulary through gaming.

The focus will now shift to looking at how individual videogame genres had a correlation with how well the students scored on their AVT's. By viewing table 4.10, we can see that the only videogame genres to have a significant Sig. value is party games. It had a positive B value of 12.458. This is a

significantly large B value and shows that the students who reported on playing party games also had higher AVT scores. This, as mentioned earlier, is the opposite of the results from table 4.9 where the dependent variable was the PVT. There, party games had a negative B value of 667.663. From the start, I did not foresee that party games would be of relevance to either of the vocabulary tests. With games like “Mario Party” and “Gang Beasts” being mentioned as examples of the party games genre, there are very little dialogue or monologues used in these party games. This will change depending on who the player plays together with since several of them do in fact demand communication with the other players. If a learner plays while communicating in English, the scores on the productive AVT could be explained by this, but since this was not part of the questionnaire, it is not possible to find out what language they communicated in while playing games.

### 5.1.2 Receptive vocabulary knowledge

This section will also begin with the statistical possibility of predicting vocabulary test scores by investigating the amount of time the students played videogames in general. The difference between this section and the last is that the dependent variable of this section were the PVT scores. As seen in table 4.8 the R Square value is .302 while the Adjusted R Square value is .195. This means that the ability to predict the PVT scores of the students by using the videogame genres as predictors were only between 30% and 20%. This provided a larger chance than with the AVT scores, but it did once again show that it was not possible to predict the scores of students accurately by using these predictors.

By now looking at table 4.9 we can see that there were more of the genres that were of significance with a connection to the receptive vocabulary test, compared to the productive vocabulary test. Three of the genres were relevant, with vehicle and party games having a negative correlation to the PVT scores while the adventure genre had a positive correlation with the reported PVT scores. I did not see any immediate reason for why students who played vehicle and party games had a smaller receptive vocabulary than those who did not play these games. Games like “Rocket League”, “V-Rally” and “Forza” does not include large amounts of dialogue or text other than the text excising in the menu screens of the games. It is also possible to have the menu screens in Norwegian if the player wishes for it.

Adventure games on the other hand are filled with dialogues, monologues and are often story driven. Games like “Portal” have both voice acting as well as the possibility to turn on subtitles. The study done by Ramenzanali et al. (2021) provided evidence for the use of multimodal glossing which can be seen in “Portal” in the form of a mix of video/gameplay, together with both spoken and written dialogue. Another game used in the definition of the adventure game genre was “Heavy Rain” where the player needs to both move a character in the game while also choosing English dialogue options to try to get the best of several endings in the game. This provides the player with the condition that they need to have a certain vocabulary knowledge level for them to be able to play the game as intended. Games like “Heavy Rain” is not filled with the same level of movement as “Portal” and could also be used as a resource for learners, even by just viewing gameplay. This is supported by Fløan’s (2015) research where it was found that the game “Black and White” had a positive impact on test scores even for those who just watched the game being played. The last game that will be mentioned in this section is “The Secret of Monkey Island” which is a point and click adventure game. Here the player needs to gather hints and clues from text in the game. This mix of pictures, video and text will help the player to stay motivated while being exposed to new words, but also needing to learn new English vocabulary to understand what they need to do next to progress in the game.

## **5.2 Metacognitive learning strategies and how they can predict vocabulary knowledge.**

The second research question was: *How is the use of different strategies for learning new words while gaming predictive of students’ vocabulary knowledge?*

As earlier shortly explained, the focus of this research question was to find out if the students’ vocabulary knowledge was impacted by using the MLS described in section 3.3. There were not as many findings correlating to these strategies found in the analysis. This means that this will be the shortest part of the discussions section. Section 5.2 will first include relevant earlier research and then move on to discussing the subject using the findings from table 4.9 and table 4.10.

The first theory to be mentioned here is the input hypothesis. Input hypothesis uses the possibility of learning through context and knowledge of the world (Blokkum, 2022). The study done by

Kamalian (2017) is relevant as it focused on communicating with other learners as well as the monitoring of their own language. Sylvén & Sundqvist's research (2012) can also be important when looking at gaming being an Extramural English method since the strategies were made with gaming in mind.

When looking at table 4.9 we can see that the Sig. value of MLS, with PVT as the dependent variable, is .311. This means that there was no significant correlation between the use of the MLS and the scores the students got on the PVT. This does not mean that there is never any correlation between these strategies and their receptive vocabulary knowledge, but it does mean that the data I collected and analysed did not have this correlation.

Table 4.10 on the other hand shows that there was a correlation between the use of MLS and the scores the students got on the AVT. Here the Sig. value was .021 which made it very statistically significant. It also had a positive B value of .402 which show that those who used most of the MLS did perform better on the productive vocabulary test than those who did not. As mentioned in section 3.1, a hypothesis was early formed looking into the possibility that students who use strategies to understand, learn and memorise new words would grow their vocabulary faster than those who do not. Some of the strategies do not need to be used consciously for them to have an impact on the learning of vocabulary. Statements like *I use my knowledge of the world when I guess the meaning of a word* and *I try to use the newly learned words as much as possible in speech and writing* are clear examples of these sort of strategies. By subconsciously using MLS, it is possible to understand and learn new words from videogames without having to exit the game to look up the meaning. This is important when having incidental learning in mind. This is also relevant if we interpret that gaming works in a similar way to extensive reading. By viewing the results from Debbita et al.'s research (2018) we can argue for the use of extensive exposure as a method for increasing vocabulary gains.

### **5.3 Differences in English media consumption based on videogame genres played.**

The third and final research question was: *To what degree do videogames encourage the consumption of other forms of English media among students?*

This research question strived to find the correlation between playing videogames and time spent consuming and producing other English media. This section will first start by looking at tables 4.4 through 4.6 before moving on to the findings done in the analysis. The findings will be gathered from sections 4.3.2.1 and 4.3.2.2.

By looking at table 4.4 we can observe that Harry Potter was the most mentioned literary work mentioned by the students. We can also see that several students mentioned manga/comic-based videogames like “Naruto”, “One Piece” and “Demon slayer”. This means that some of the students gained interest in the games after reading/viewing other media or that they became interested in the media after playing the games. By viewing table 4.5 and table 4.6 we can also see that more students reported spending time consuming media than producing media. This reflects the findings from sections 4.3.2.1 and 4.3.2.2 as there are more correlations between the consumption of media and gaming than the production of media and gaming.

By interpreting the findings from table 4.11 we can see that gaming had a significant chance of predicting the time the students spent producing YouTube and streaming content. Even though there were not that many students that produced these types of media, it can still point in the direction that those who did, produced videos based on videogames. Adding to this is the fact that according to statistics from similarweb (2023), the biggest category on YouTube is “Videogames, Consoles and Accessories”. So even though the R values of these two medias show that we could not predict that students who played a lot of games also produce content, we can see that those who did might have produced game related content.

Moving on to the receptive English media activities we could see from table 4.12 that it would be difficult to predict the amount of time the students spent on media by seeing how much time they used playing videogames. What we can see is that there was a correlation between playing videogames and watching streams and YouTube videos again. This can be an indication that some of the students spend time watching videogame-related videos of the games they played themselves.

The discussion section will now move on to the correlation between playing individual genres of videogames and the productive English media activities. We could see that there was a positive

correlation between playing sport games and party games and the time spent on producing social media content. Adventure games on the other hand had a small negative correlation with producing YouTube videos. When it comes to the production of social media content, I have mentioned earlier that the understanding of the definition creating social media content can be hard to pin down. It can be anything from sending Snapchat messages to writing a Facebook status. This means that it was not easy to draw a conclusion from these findings.

Lastly, we will be looking at table 4.14 where there were several correlations between playing videogames and spending time on receptive English media activities. The most relevant positive correlations were between strategy and YouTube, shooters and Twitch/streaming, RPG and series, RPG and YouTube as well as MOBA and comic/manga. The correlation between strategy games and YouTube videos can be explained by the fact that there are different meta in games that changes over time. YouTube videos can be a source of information on how to play certain games in the most optimal way. The same correlation can be seen between shooters and Twitch/streaming. The use of the most optimal weapon builds as well as seeing how streamers approach different situations can be an inspiration to the students. The RPG genre have titles like “The Witcher” and “Final Fantasy” which have been adapted into series. This provides the students with the possibility to further explore the universes of these games. The students could become interested in the world of the games before they then wanted to learn more about characters and the retelling of a story they already know. RPG games also have a lot of customization possibilities and certain times that are hard to find without a guide. This can be the reason for why there is also a correlation between RPG games and the consumption of YouTube videos. The last correlation mentioned is between MOBA games and comic/manga. I mentioned the MOBA games “Overwatch”, “DOTA” and “League of Legends” in section 2.2.2 as examples of this genre. All these games have comic adaptations. MOBA games often contain only small portions of lore about the universe and character in the game itself. Thought there are often short conversations between the characters as well as phrases spoken when doing certain actions to build the characters’ personalities. This can create a lust for more information about the game that can then be explored in the comics and can be a reason for this correlation.

The relevant correlations that had negative B values between the videogame genres and time spent on receptive English media activities on were between shooters and books, shooters and blogposts,

vehicle and series, vehicle and blogposts, and lastly sandbox/survival and series. The negative correlation between shooters and books can be explained by how the games mentioned by students do not have book adaptations as of this point. Games like "Fortnite", "Battlefield" and "Apex Legends" all have a fast pace. These games are also mostly played together with other people online and do not call for the need of a story to be told in book form. The same can be said about the correlation between shooters and blogposts. The students might have been more prone to viewing short guides on which weapons to choose, or which strategies to use. In the vehicle genre the games mentioned by the students were "Rocker League", "V-Rally 4" and "Forza". These games do not include much of a story and the English vocabulary the player need to understand is mostly the menu screens that take the player between races and matches. This means that there is not much incentive for the person playing these games to explore series and blogposts. The last relevant correlation is between sandbox/survival and series. Two of the games mentioned ("Minecraft" and "Roblox") do not include much English vocabulary. The player needs to understand some English words in "Minecraft" to be able to craft and progress in the game. In "GTA" on the other hand, there is both a storyline as well as an expansive multiplayer experience. This means that there is a lot of vocabulary to be learnt. When looking at this correlation there is one thing that all three of these games have in common and that is that there is no series adaptation of any of these games. This means that there is not a way to explore these worlds in the form of a series.

## 6 Conclusion

In this last section I will present my conclusions in order of the research questions, then I want to share my thoughts on what I would do differently if I were to write this thesis again, and lastly, I will share my thoughts on what I think will be important to research in this field moving forward.

When looking at the results connected to the first research question, there are some conclusions that can be drawn. The first conclusion is that according to the analysis done on the questionnaire answers I collected, there seems to be no connection between gaming in general and the students' vocabulary knowledge. This is the case with both the receptive and productive vocabulary knowledge. Though earlier research has documented findings of this nature, I did not. With individual videogame genres on the other hand, there were two of the genres that stood out as interesting. Since party games had a negative influence on the students' PVT scores and a positive impact on the students' AVT scores, these results are not counted among these genres. Vehicle games having had a negative impact on the students' PVT scores can come from a lack of exposure to English while playing these types of games. Adventure games on the other hand had a positive influence on the students' PVT scores and could probably originate from the fact that there are large amounts of language used in Adventure type games.

The second research question and the findings from the research makes it possible to draw the conclusion that using these strategies are important when vocabulary is transitioning from receptive to productive knowledge. Since there was little correlation between the students who did use the MLS and those who did not in the PVT's, but a positive correlation between the use of MLS and the AVT scores, it means that the strategies are helping the students to integrate new words into their productive vocabulary.

The last research question was the question I was the most interested in finding information about. The first conclusion is that playing videogames in general did affect the time spent on both consuming and producing YouTube and streaming content. This can possibly be because the students were creating and consuming media based on their favourite games. The correlation between videogame genres and the production of English media was confusing and there are no clear conclusions I can draw from this. This changes when looking at the correlation between some of the individual genres and receptive English media. The conclusions I draw from these



correlations are that games that heavily rely on strategies and a meta are more likely to encourage the players to engage with English media containing hints and tips, as well as showing the gamer “how the game is supposed to be played”. RPG’s normally have expansive worlds and a lot of characters, and this encourages the player to seek out series that expand on the given universe. The story progression of an RPG can also be similar to the progression of some series and can also be a likely reason why we see a positive correlation between RPG and series. This can also be said about the connection between MOBA and comics/manga, where the world is large and complicates, but with MOBA games there is little lore in the game which makes the player seek out comic and manga adaptations of these games. The conclusion I draw from the pairs with a negative correlation is that the gameplay and story of these games are too different to the other English media they were paired with. This means that the genres with negative values does not have a negative impact in the consumption of English media, but rather that they do not have that much impact in general.

If I was to write another thesis on this subject or collect new information and write this thesis all over again, there is one thing I would change. If I had help in collecting information, or more time to do so, I would have liked to do it differently. I would have tried to get in touch with several schools across the country and only include students who were interested and had more motivation to be a part of the research. I would then create two questionnaires, one for the students who identified as avid gamers, and one for the students who were not gamers. By doing this, I think I could have gotten even clearer results, and it would probably have been easier to analyse the results as well.

As a closing statement, I think that the use of games both inside and outside of the classroom can have great effects on students’ English vocabulary learning. This does not mean that all games can be used, or that they can be used all the time, but rather that further research on games and their usefulness in the classroom needs to be focused on in the future. How we as teacher communicate with students in regard to their gaming habits is also something that I think should be looked into going forward. By encouraging students to have gaming as a hobby, it could help their motivation to learn more English.

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## 8 Appendix

### Appendix A

#### Questionnaire

- Hvilket kjønn identifiserer du deg som?

Gutt

Jente

Annet

- Hva er morsmålet ditt? Har du mer enn ett morsmål? Skriv begge nedenfor.

Først vil jeg spørre om hvilke type spill du spiller og hvor du spiller dem.

- Hvilke maskiner spiller du på?

Pc

Konsoller

Mobil

VR

Jeg spiller ikke spill

Annet

- Hvor mye spiller du hver av disse sjangrene?
- Ca. hvor mye spiller du disse sjangrene i en gjennomsnittlig uke? Her gjelder spørsmålet engelske spill.

- RPG

Ikke i det hele tatt

1-4 timer

5-10 timer

11-15 timer

16-24 timer

Mer enn 24 timer

- Sport

Ikke i det hele tatt

1-4 timer

5-10 timer

11-15 timer

16-24 timer

Mer enn 24 timer

- Strategi

Ikke i det hele tatt

1-4 timer

5-10 timer

11-15 timer

16-24 timer

Mer enn 24 timer

- Adventure

Ikke i det hele tatt

1-4 timer

5-10 timer

11-15 timer

16-24 timer

Mer enn 24 timer

- Kjøretøy

Ikke i det hele tatt

1-4 timer

5-10 timer

11-15 timer

16-24 timer

Mer enn 24 timer

- Skytespill

Ikke i det hele tatt

1-4 timer

5-10 timer

11-15 timer

16-24 timer

Mer enn 24 timer

- Party games

Ikke i det hele tatt

1-4 timer

5-10 timer

11-15 timer

16-24 timer

Mer enn 24 timer

- Sandbox/survival

Ikke i det hele tatt

1-4 timer

5-10 timer

11-15 timer

16-24 timer

Mer enn 24 timer

- Platformer

Ikke i det hele tatt

1-4 timer

5-10 timer

11-15 timer

16-24 timer

Mer enn 24 timer

- MOBA

Ikke i det hele tatt

1-4 timer

5-10 timer

11-15 timer

16-24 timer

Mer enn 24 timer

- Puzzle

Ikke i det hele tatt

1-4 timer

5-10 timer

11-15 timer

16-24 timer

Mer enn 24 timer

- Hvis andre sjangre. Hvilke sjangre spiller du?
- Hvilke spill spiller du mest?  
Nå kommer spørsmål knyttet til hvordan du spiller spill.
- Hvor enig er du i disse utsagnene?
  - Jeg vet om et nytt ord er viktig for å hjelpe meg å forstå spillet.

Helt uenig

Uenig

Delvis uenig

Delvis enig

Enig

Helt enig

- Jeg vet hvilke ord som er viktige for meg for å komme meg videre i spillet.

Helt uenig

Uenig

Delvis uenig

Delvis enig

Enig

Helt enig

- Jeg bruker konteksten (f.eks. årsak og virkning) når jeg gjetter betydningen av et ord.

Helt uenig

Uenig

Delvis uenig

Delvis enig

Enig

Helt enig

- Jeg bruker min kunnskap om verden når jeg gjetter betydningen av et ord.

Helt uenig

Uenig

Delvis uenig

Delvis enig

Enig



Helt enig

- Jeg ser etter forklaringer i spillverdenen som støtter min gjetning om betydningen av et nytt ord.

Helt uenig

Uenig

Delvis uenig

Delvis enig

Enig

Helt enig

- Jeg slår opp ukjente ord (f.eks. nettordbok, oversetter, spør en venn osv.) som er viktige for forståelsen av spillet.

Helt uenig

Uenig

Delvis uenig

Delvis enig

Enig

Helt enig

- Når jeg vil vite mer om bruken av et ord som jeg kjenner fra spillet, slår jeg det opp

Helt uenig

Uenig

Delvis uenig

Delvis enig

Enig

Helt enig

- Jeg noterer meg når jeg tror at ordet jeg ser opp er relatert til mine personlige interesser

Helt uenig

Uenig

Delvis uenig

Delvis enig

Enig

Helt enig

- Jeg noterer meg når jeg ser et nyttig uttrykk eller frase.

Helt uenig

Uenig

Delvis uenig

Delvis enig

Enig

Helt enig

- Jeg noterer meg både betydningen på morsmålet mitt og den engelske forklaringen av ordet jeg

slår opp.

Helt uenig

Uenig

Delvis uenig

Delvis enig

Enig

Helt enig

- Når jeg prøver å huske et ord, sier jeg det høyt for meg selv.

Helt uenig

Uenig

Delvis uenig

Delvis enig

Enig

Helt enig

- Jeg lager et bilde i tankene mine for å hjelpe meg å huske et nytt ord.

Helt uenig

Uenig

Delvis uenig

Delvis enig

Enig

Helt enig

- Når jeg prøver å huske et ord, prøver jeg også å huske setningen ordet brukes i.

Helt uenig

Uenig

Delvis uenig

Delvis enig

Enig

Helt enig

- Jeg prøver å bruke nylærte ord i hverdagslige situasjoner.

Helt uenig

Uenig

Delvis uenig

Delvis enig

Enig

Helt enig

- Jeg prøver å bruke de nylærte ordene så mye som mulig i tale og skrift.

Helt uenig

Uenig

Delvis uenig

Delvis enig

Enig

Helt enig

- Jeg gjennomgår regelmessig de nye ordene jeg har lært (f.eks. mentalt eller via en fysisk ordliste).

Helt uenig

Uenig

Delvis uenig

Delvis enig

Enig

Helt enig

- Jeg fokuserer på hvordan ord dannes (dvs. ordstruktur) for å huske dem mer effektivt.

Helt uenig

Uenig

Delvis uenig

Delvis enig

Enig

Helt enig

- Jeg prøver å huske nye ord ved å knytte dem til ord jeg kjenner (og som har en lignende uttale).

Helt uenig

Uenig

Delvis uenig

Delvis enig

Enig

Helt enig

- Jeg lager et bilde i tankene mine for å hjelpe meg å huske nye ord

Helt uenig

Uenig

Delvis uenig

Delvis enig

Enig

Helt enig

- Hva og hvor mye leser du av selvvalgt engelsk lesestoff på en gjennomsnittlig uke?

- Bøker

Ikke i det hele tatt

1-4 timer

5-10 timer

11-15 timer

16-24 timer

Mer enn 24 timer

- Artikler

Ikke i det hele tatt

1-4 timer

5-10 timer

11-15 timer

16-24 timer

Mer enn 24 timer

- Wiki-sider

Ikke i det hele tatt

1-4 timer

5-10 timer

11-15 timer

16-24 timer

Mer enn 24 timer

- Tegneserier/manga

Ikke i det hele tatt

1-4 timer

5-10 timer

11-15 timer

16-24 timer

Mer enn 24 timer

- Intruksjoner

Ikke i det hele tatt

1-4 timer

5-10 timer

11-15 timer

16-24 timer

Mer enn 24 timer

- Blogg-poster

Ikke i det hele tatt

1-4 timer

5-10 timer

11-15 timer

16-24 timer

Mer enn 24 timer

- Hvor mye tid i uken bruker du på å se på engelske medier i løpet av en gjennomsnittlig uke?

- TikTok

Ikke i det hele tatt

1-4 timer

5-10 timer

11-15 timer

16-24 timer

Mer enn 24 timer

- Youtube

Ikke i det hele tatt

1-4 timer

5-10 timer

11-15 timer

16-24 timer

Mer enn 24 timer

- Twitch/streaming

Ikke i det hele tatt

1-4 timer

5-10 timer

11-15 timer

16-24 timer

Mer enn 24 timer

- Sosiale medier

Ikke i det hele tatt

1-4 timer

5-10 timer

11-15 timer

16-24 timer

Mer enn 24 timer

- Filmer

Ikke i det hele tatt

1-4 timer

5-10 timer

11-15 timer

16-24 timer

Mer enn 24 timer

- Serier

Ikke i det hele tatt

1-4 timer

5-10 timer

11-15 timer

16-24 timer

Mer enn 24 timer

- Hvor mye tid i uken bruker du på å produsere engelske medier i løpet av en gjennomsnittlig uke på følgende plattformer?

- TikTok

Ikke i det hele tatt

1-4 timer

5-10 timer

11-15 timer

16-24 timer

Mer enn 24 timer

- Youtube

Ikke i det hele tatt

1-4 timer

5-10 timer

11-15 timer

16-24 timer

Mer enn 24 timer

- Twitch/streaming

Ikke i det hele tatt

1-4 timer

5-10 timer

11-15 timer

16-24 timer

Mer enn 24 timer

- Sosiale medier

Ikke i det hele tatt

1-4 timer

5-10 timer

11-15 timer

16-24 timer

Mer enn 24 timer

- Wiki-artikler

Ikke i det hele tatt

1-4 timer

5-10 timer

11-15 timer

16-24 timer

Mer enn 24 timer

- Spillguider

Ikke i det hele tatt

1-4 timer

5-10 timer

11-15 timer

16-24 timer

Mer enn 24 timer

- Tegneserier/manga

Ikke i det hele tatt

1-4 timer

5-10 timer

11-15 timer

16-24 timer

Mer enn 24 timer

- Blogg-poster

Ikke i det hele tatt

1-4 timer

5-10 timer

11-15 timer

16-24 timer

Mer enn 24 timer



- Har du lest bøker, tegneserier eller lignende som enten er basert på videospill, eller som har blitt gjort om til videospill? Hvilke?

Først skal du gjennomføre en test som sjekker produksjons-vokabularet ditt:

<https://www.lognostics.co.uk/tools/Lex30/index.htm>

- Hva fikk du som score på testen der du skal skrive inn ord?

Nå skal du gjennomføre en vokabular-test via denne linken:

[https://www.lognostics.co.uk/tools/V\\_YesNo/V\\_YesNo.htm](https://www.lognostics.co.uk/tools/V_YesNo/V_YesNo.htm)

- Hva fikk du som score på testen med 200 ord?

## Appendix B

Game genre's combined amount of correlation with productive English media.

### Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power <sup>i</sup>
Corrected Model	TikTok	9.693 <sup>a</sup>	11	.881	.787	.653	.078	8.652	.411
	Youtube	10.207 <sup>b</sup>	11	.928	1.859	.054	.167	20.447	.848
	Twitch/streaming	4.096 <sup>c</sup>	11	.372	1.258	.259	.119	13.842	.647
	Sosiale medier	14.648 <sup>d</sup>	11	1.332	.858	.583	.085	9.438	.450
	Wiki-artikler	1.687 <sup>e</sup>	11	.153	.473	.916	.049	5.205	.243
	Spillguider	.879 <sup>f</sup>	11	.080	.273	.990	.029	3.002	.147
	Tegneserier/manga	1.005 <sup>g</sup>	11	.091	.276	.989	.029	3.038	.149
	Blogg-poster	2.493 <sup>h</sup>	11	.227	.531	.879	.054	5.836	.273
Intercept	TikTok	19.708	1	19.708	17.592	<.001	.147	17.592	.986
	Youtube	4.887	1	4.887	9.790	.002	.088	9.790	.873
	Twitch/streaming	8.024	1	8.024	27.114	<.001	.210	27.114	.999
	Sosiale medier	19.063	1	19.063	12.283	<.001	.107	12.283	.935
	Wiki-artikler	7.191	1	7.191	22.192	<.001	.179	22.192	.997
	Spillguider	8.635	1	8.635	29.499	<.001	.224	29.499	1.000
	Tegneserier/manga	6.810	1	6.810	20.591	<.001	.168	20.591	.994
	Blogg-poster	8.625	1	8.625	20.188	<.001	.165	20.188	.994
RPG	TikTok	1.116	1	1.116	.996	.321	.010	.996	.167
	Youtube	.885	1	.885	1.773	.186	.017	1.773	.261
	Twitch/streaming	.077	1	.077	.261	.611	.003	.261	.080
	Sosiale medier	.250	1	.250	.161	.689	.002	.161	.068
	Wiki-artikler	.004	1	.004	.012	.913	.000	.012	.051
	Spillguider	.164	1	.164	.560	.456	.005	.560	.115

	Tegneserier/manga	.486	1	.486	1.471	.228	.014	1.471	.225	
	Blogg-poster	.357	1	.357	.835	.363	.008	.835	.148	
Sport	TikTok	1.816	1	1.816	1.621	.206	.016	1.621	.243	
	Youtube	1.140	1	1.140	2.284	.134	.022	2.284	.322	
	Twitch/streaming	.101	1	.101	.341	.560	.003	.341	.089	
	Sosiale medier	5.598	1	5.598	3.607	.060	.034	3.607	.469	
	Wiki-artikler	.007	1	.007	.022	.882	.000	.022	.053	
	Spillguider	.041	1	.041	.141	.708	.001	.141	.066	
	Tegneserier/manga	.020	1	.020	.059	.808	.001	.059	.057	
	Blogg-poster	.821	1	.821	1.921	.169	.018	1.921	.279	
		TikTok	.023	1	.023	.020	.887	.000	.020	.052
Strategi	Youtube	.012	1	.012	.024	.876	.000	.024	.053	
	Twitch/streaming	.776	1	.776	2.622	.108	.025	2.622	.361	
	Sosiale medier	.127	1	.127	.082	.776	.001	.082	.059	
	Wiki-artikler	.031	1	.031	.097	.756	.001	.097	.061	
	Spillguider	.026	1	.026	.089	.766	.001	.089	.060	
	Tegneserier/manga	.000	1	.000	.001	.982	.000	.001	.050	
	Blogg-poster	.046	1	.046	.108	.743	.001	.108	.062	
		TikTok	2.615	1	2.615	2.334	.130	.022	2.334	.328
	Adventure	Youtube	1.667	1	1.667	3.340	.071	.032	3.340	.441
Twitch/streaming		.342	1	.342	1.157	.285	.011	1.157	.187	
Sosiale medier		1.771	1	1.771	1.141	.288	.011	1.141	.185	
Wiki-artikler		.189	1	.189	.582	.447	.006	.582	.118	
Spillguider		.187	1	.187	.639	.426	.006	.639	.124	
Tegneserier/manga		.585	1	.585	1.768	.187	.017	1.768	.261	
Blogg-poster		1.126	1	1.126	2.635	.108	.025	2.635	.363	
		TikTok	1.529	1	1.529	1.365	.245	.013	1.365	.212
Kjøretøy		Youtube	.512	1	.512	1.026	.314	.010	1.026	.171
	Twitch/streaming	.335	1	.335	1.131	.290	.011	1.131	.184	
	Sosiale medier	3.288	1	3.288	2.119	.149	.020	2.119	.303	
	Wiki-artikler	.392	1	.392	1.211	.274	.012	1.211	.193	
	Spillguider	.001	1	.001	.004	.948	.000	.004	.050	
	Tegneserier/manga	.002	1	.002	.007	.932	.000	.007	.051	
	Blogg-poster	.114	1	.114	.266	.607	.003	.266	.080	
		TikTok	2.676	1	2.676	2.389	.125	.023	2.389	.334
	Skytespill	Youtube	.001	1	.001	.003	.960	.000	.003	.050
Twitch/streaming		.064	1	.064	.215	.644	.002	.215	.074	
Sosiale medier		3.061	1	3.061	1.972	.163	.019	1.972	.285	
Wiki-artikler		.236	1	.236	.727	.396	.007	.727	.135	
Spillguider		.022	1	.022	.074	.787	.001	.074	.058	
Tegneserier/manga		.034	1	.034	.104	.748	.001	.104	.062	

	Blogg-poster	.212	1	.212	.495	.483	.005	.495	.107
Partygames	TikTok	2.951	1	2.951	2.634	.108	.025	2.634	.363
	Youtube	1.464	1	1.464	2.933	.090	.028	2.933	.396
	Twitch/streaming	.222	1	.222	.750	.389	.007	.750	.138
	Sosiale medier	4.859	1	4.859	3.131	.080	.030	3.131	.418
	Wiki-artikler	.206	1	.206	.634	.428	.006	.634	.124
	Spillguider	.216	1	.216	.738	.392	.007	.738	.136
	Tegneserier/manga	.103	1	.103	.310	.579	.003	.310	.086
	Blogg-poster	.225	1	.225	.526	.470	.005	.526	.111
Sandboxsurvival	TikTok	.139	1	.139	.124	.725	.001	.124	.064
	Youtube	.124	1	.124	.247	.620	.002	.247	.078
	Twitch/streaming	.138	1	.138	.466	.496	.005	.466	.104
	Sosiale medier	.194	1	.194	.125	.724	.001	.125	.064
	Wiki-artikler	.007	1	.007	.023	.880	.000	.023	.053
	Spillguider	.060	1	.060	.204	.652	.002	.204	.073
	Tegneserier/manga	.001	1	.001	.004	.949	.000	.004	.050
	Blogg-poster	.042	1	.042	.097	.756	.001	.097	.061
Platformer	TikTok	.354	1	.354	.316	.575	.003	.316	.086
	Youtube	1.335	1	1.335	2.675	.105	.026	2.675	.367
	Twitch/streaming	.692	1	.692	2.340	.129	.022	2.340	.328
	Sosiale medier	1.841	1	1.841	1.186	.279	.011	1.186	.190
	Wiki-artikler	.407	1	.407	1.255	.265	.012	1.255	.199
	Spillguider	.018	1	.018	.061	.805	.001	.061	.057
	Tegneserier/manga	.003	1	.003	.010	.921	.000	.010	.051
	Blogg-poster	.179	1	.179	.418	.519	.004	.418	.098
MOBA	TikTok	.475	1	.475	.424	.517	.004	.424	.099
	Youtube	.647	1	.647	1.295	.258	.013	1.295	.204
	Twitch/streaming	.336	1	.336	1.136	.289	.011	1.136	.184
	Sosiale medier	.135	1	.135	.087	.769	.001	.087	.060
	Wiki-artikler	.096	1	.096	.297	.587	.003	.297	.084
	Spillguider	.076	1	.076	.258	.613	.003	.258	.079
	Tegneserier/manga	.148	1	.148	.447	.505	.004	.447	.102
	Blogg-poster	.179	1	.179	.418	.519	.004	.418	.098
Puzzle	TikTok	1.247	1	1.247	1.113	.294	.011	1.113	.181
	Youtube	1.353	1	1.353	2.710	.103	.026	2.710	.371
	Twitch/streaming	.253	1	.253	.856	.357	.008	.856	.150
	Sosiale medier	2.149	1	2.149	1.385	.242	.013	1.385	.214
	Wiki-artikler	.030	1	.030	.092	.762	.001	.092	.060
	Spillguider	.339	1	.339	1.159	.284	.011	1.159	.187
	Tegneserier/manga	.000	1	.000	.000	.983	.000	.000	.050
	Blogg-poster	1.198E-7	1	1.198E-	.000	1.000	.000	.000	.050

Error	TikTok	114.272	102	1.120					
	Youtube	50.916	102	.499					
	Twitch/streaming	30.184	102	.296					
	Sosiale medier	158.299	102	1.552					
	Wiki-artikler	33.050	102	.324					
	Spillguider	29.858	102	.293					
	Tegneserier/manga	33.732	102	.331					
	Blogg-poster	43.577	102	.427					
Total	TikTok	434.000	114						
	Youtube	238.000	114						
	Twitch/streaming	178.000	114						
	Sosiale medier	538.000	114						
	Wiki-artikler	174.000	114						
	Spillguider	170.000	114						
	Tegneserier/manga	174.000	114						
	Blogg-poster	218.000	114						
Corrected Total	TikTok	123.965	113						
	Youtube	61.123	113						
	Twitch/streaming	34.281	113						
	Sosiale medier	172.947	113						
	Wiki-artikler	34.737	113						
	Spillguider	30.737	113						
	Tegneserier/manga	34.737	113						
	Blogg-poster	46.070	113						

- a. R Squared = .078 (Adjusted R Squared = -.021)
- b. R Squared = .167 (Adjusted R Squared = .077)
- c. R Squared = .119 (Adjusted R Squared = .025)
- d. R Squared = .085 (Adjusted R Squared = -.014)
- e. R Squared = .049 (Adjusted R Squared = -.054)
- f. R Squared = .029 (Adjusted R Squared = -.076)
- g. R Squared = .029 (Adjusted R Squared = -.076)
- h. R Squared = .054 (Adjusted R Squared = -.048)
- i. Computed using alpha = .05

## Appendix C

Game genres combined amount of correlation with receptive English media.

### Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power <sup>m</sup>
Corrected Model	Bøker	13.187 <sup>a</sup>	11	1.199	1.588	.113	.146	17.470	.772
	Artikler	2.850 <sup>b</sup>	11	.259	.533	.877	.054	5.860	.274
	Wiki-sider	11.061 <sup>c</sup>	11	1.006	1.619	.104	.149	17.806	.782
	Tegneserier/manga	6.868 <sup>d</sup>	11	.624	1.393	.187	.131	15.328	.703
	Intruksjoner	2.606 <sup>e</sup>	11	.237	.485	.909	.050	5.335	.249
	Blogg-poster	12.988 <sup>f</sup>	11	1.181	1.900	.048	.170	20.905	.858
	TikTok	9.826 <sup>g</sup>	11	.893	.482	.911	.049	5.297	.247
	Youtube	38.268 <sup>h</sup>	11	3.479	2.869	.003	.236	31.562	.975
	Twitch/streaming	8.546 <sup>i</sup>	11	.777	1.783	.066	.161	19.613	.829
	Sosiale medier	27.434 <sup>j</sup>	11	2.494	1.123	.351	.108	12.354	.585
	Filmer	13.223 <sup>k</sup>	11	1.202	1.264	.256	.120	13.900	.649
	Serier	21.058 <sup>l</sup>	11	1.914	1.458	.159	.136	16.034	.727
Intercept	Bøker	9.242	1	9.242	12.243	<.001	.107	12.243	.934
	Artikler	17.825	1	17.825	36.645	<.001	.264	36.645	1.000
	Wiki-sider	11.541	1	11.541	18.579	<.001	.154	18.579	.990
	Tegneserier/manga	5.017	1	5.017	11.198	.001	.099	11.198	.912
	Intruksjoner	13.864	1	13.864	28.387	<.001	.218	28.387	1.000
	Blogg-poster	10.926	1	10.926	17.586	<.001	.147	17.586	.986
	TikTok	44.670	1	44.670	24.083	<.001	.191	24.083	.998
	Youtube	7.089	1	7.089	5.847	.017	.054	5.847	.668
	Twitch/streaming	6.053	1	6.053	13.892	<.001	.120	13.892	.958
	Sosiale medier	48.671	1	48.671	21.918	<.001	.177	21.918	.996
	Filmer	11.869	1	11.869	12.477	<.001	.109	12.477	.938
	Serier	37.049	1	37.049	28.210	<.001	.217	28.210	1.000
RPG	Bøker	.024	1	.024	.032	.858	.000	.032	.054
	Artikler	.148	1	.148	.304	.583	.003	.304	.085
	Wiki-sider	.233	1	.233	.375	.542	.004	.375	.093
	Tegneserier/manga	.381	1	.381	.850	.359	.008	.850	.150
	Intruksjoner	.053	1	.053	.109	.742	.001	.109	.062
	Blogg-poster	.496	1	.496	.798	.374	.008	.798	.143
	TikTok	.504	1	.504	.272	.603	.003	.272	.081
	Youtube	4.143	1	4.143	3.417	.067	.032	3.417	.449
	Twitch/streaming	.204	1	.204	.469	.495	.005	.469	.104
	Sosiale medier	.006	1	.006	.003	.957	.000	.003	.050

	Filmer	.252	1	.252	.265	.608	.003	.265	.080
	Serier	5.101	1	5.101	3.884	.051	.037	3.884	.497
Sport	Bøker	.326	1	.326	.431	.513	.004	.431	.100
	Artikler	.005	1	.005	.010	.922	.000	.010	.051
	Wiki-sider	.304	1	.304	.490	.486	.005	.490	.107
	Tegneserier/manga	.965	1	.965	2.154	.145	.021	2.154	.307
	Intruksjoner	.007	1	.007	.015	.903	.000	.015	.052
	Blogg-poster	.869	1	.869	1.398	.240	.014	1.398	.216
	TikTok	5.789	1	5.789	3.121	.080	.030	3.121	.417
	Youtube	.098	1	.098	.081	.777	.001	.081	.059
	Twitch/streaming	.666	1	.666	1.528	.219	.015	1.528	.232
	Sosiale medier	10.149	1	10.149	4.570	.035	.043	4.570	.563
	Filmer	.512	1	.512	.539	.465	.005	.539	.112
	Serier	.073	1	.073	.055	.815	.001	.055	.056
Strategi	Bøker	1.464	1	1.464	1.939	.167	.019	1.939	.281
	Artikler	.213	1	.213	.437	.510	.004	.437	.100
	Wiki-sider	2.171	1	2.171	3.494	.064	.033	3.494	.457
	Tegneserier/manga	.023	1	.023	.051	.822	.000	.051	.056
	Intruksjoner	.211	1	.211	.431	.513	.004	.431	.100
	Blogg-poster	1.188	1	1.188	1.913	.170	.018	1.913	.278
	TikTok	.061	1	.061	.033	.856	.000	.033	.054
	Youtube	6.546	1	6.546	5.399	.022	.050	5.399	.634
	Twitch/streaming	.953	1	.953	2.187	.142	.021	2.187	.311
	Sosiale medier	2.933	1	2.933	1.321	.253	.013	1.321	.207
	Filmer	6.648	1	6.648	6.988	.009	.064	6.988	.745
	Serier	.427	1	.427	.325	.570	.003	.325	.087
Adventure	Bøker	.001	1	.001	.001	.973	.000	.001	.050
	Artikler	.244	1	.244	.501	.481	.005	.501	.108
	Wiki-sider	.087	1	.087	.141	.708	.001	.141	.066
	Tegneserier/manga	.459	1	.459	1.025	.314	.010	1.025	.171
	Intruksjoner	.101	1	.101	.207	.650	.002	.207	.074
	Blogg-poster	1.550	1	1.550	2.494	.117	.024	2.494	.346
	TikTok	.630	1	.630	.340	.561	.003	.340	.089
	Youtube	2.942	1	2.942	2.427	.122	.023	2.427	.339
	Twitch/streaming	.463	1	.463	1.063	.305	.010	1.063	.175
	Sosiale medier	1.923	1	1.923	.866	.354	.008	.866	.152
	Filmer	.286	1	.286	.301	.584	.003	.301	.084
	Serier	.145	1	.145	.111	.740	.001	.111	.063
Kjøretøy	Bøker	.416	1	.416	.551	.460	.005	.551	.114
	Artikler	1.114	1	1.114	2.290	.133	.022	2.290	.323
	Wiki-sider	1.470	1	1.470	2.366	.127	.023	2.366	.332

	Tegneserier/manga	.022	1	.022	.049	.825	.000	.049	.056
	Intruksjoner	1.943	1	1.943	3.979	.049	.038	3.979	.506
	Blogg-poster	4.347	1	4.347	6.996	.009	.064	6.996	.745
	TikTok	.003	1	.003	.002	.968	.000	.002	.050
	Youtube	3.047	1	3.047	2.513	.116	.024	2.513	.349
	Twitch/streaming	.092	1	.092	.210	.647	.002	.210	.074
	Sosiale medier	.525	1	.525	.236	.628	.002	.236	.077
	Filmer	.059	1	.059	.062	.803	.001	.062	.057
	Serier	4.016	1	4.016	3.058	.083	.029	3.058	.410
Skypespill	Bøker	3.283	1	3.283	4.349	.040	.041	4.349	.542
	Artikler	.137	1	.137	.282	.597	.003	.282	.082
	Wiki-sider	.204	1	.204	.329	.568	.003	.329	.088
	Tegneserier/manga	.517	1	.517	1.154	.285	.011	1.154	.186
	Intruksjoner	.004	1	.004	.008	.931	.000	.008	.051
	Blogg-poster	3.934	1	3.934	6.332	.013	.058	6.332	.703
	TikTok	.676	1	.676	.364	.547	.004	.364	.092
	Youtube	.367	1	.367	.303	.583	.003	.303	.085
	Twitch/streaming	2.555	1	2.555	5.864	.017	.054	5.864	.670
	Sosiale medier	.031	1	.031	.014	.906	.000	.014	.052
	Filmer	.719	1	.719	.756	.387	.007	.756	.138
	Serier	.743	1	.743	.566	.454	.006	.566	.116
Partygames	Bøker	.438	1	.438	.580	.448	.006	.580	.117
	Artikler	.023	1	.023	.047	.829	.000	.047	.055
	Wiki-sider	1.172	1	1.172	1.887	.173	.018	1.887	.275
	Tegneserier/manga	.055	1	.055	.122	.727	.001	.122	.064
	Intruksjoner	.013	1	.013	.026	.873	.000	.026	.053
	Blogg-poster	1.047	1	1.047	1.684	.197	.016	1.684	.251
	TikTok	.011	1	.011	.006	.940	.000	.006	.051
	Youtube	1.313	1	1.313	1.083	.300	.011	1.083	.178
	Twitch/streaming	.081	1	.081	.185	.668	.002	.185	.071
	Sosiale medier	1.652	1	1.652	.744	.390	.007	.744	.137
	Filmer	.033	1	.033	.035	.853	.000	.035	.054
	Serier	.300	1	.300	.228	.634	.002	.228	.076
Sandboxsurvival	Bøker	.032	1	.032	.043	.837	.000	.043	.055
	Artikler	.003	1	.003	.006	.940	.000	.006	.051
	Wiki-sider	.388	1	.388	.625	.431	.006	.625	.123
	Tegneserier/manga	.096	1	.096	.214	.645	.002	.214	.074
	Intruksjoner	.405	1	.405	.829	.365	.008	.829	.147
	Blogg-poster	.104	1	.104	.167	.684	.002	.167	.069
	TikTok	1.323	1	1.323	.713	.400	.007	.713	.133
	Youtube	.110	1	.110	.091	.764	.001	.091	.060

	Twitch/streaming	1.467	1	1.467	3.368	.069	.032	3.368	.444	
	Sosiale medier	.056	1	.056	.025	.874	.000	.025	.053	
	Filmer	1.846	1	1.846	1.941	.167	.019	1.941	.281	
	Serier	6.085	1	6.085	4.633	.034	.043	4.633	.568	
Platformer	Bøker	.619	1	.619	.820	.367	.008	.820	.146	
	Artikler	.084	1	.084	.173	.678	.002	.173	.070	
	Wiki-sider	.374	1	.374	.601	.440	.006	.601	.120	
	Tegneserier/manga	.784	1	.784	1.750	.189	.017	1.750	.259	
	Intruksjoner	.029	1	.029	.059	.808	.001	.059	.057	
	Blogg-poster	2.805	1	2.805	4.515	.036	.042	4.515	.558	
	TikTok	2.229	1	2.229	1.202	.276	.012	1.202	.192	
	Youtube	.698	1	.698	.576	.450	.006	.576	.117	
	Twitch/streaming	1.147	1	1.147	2.632	.108	.025	2.632	.362	
	Sosiale medier	7.493	1	7.493	3.374	.069	.032	3.374	.444	
	Filmer	2.761	1	2.761	2.902	.092	.028	2.902	.393	
	Serier	8.943	1	8.943	6.810	.010	.063	6.810	.734	
	MOBA	Bøker	.762	1	.762	1.010	.317	.010	1.010	.169
		Artikler	.590	1	.590	1.212	.273	.012	1.212	.194
Wiki-sider		.392	1	.392	.632	.429	.006	.632	.123	
Tegneserier/manga		1.698	1	1.698	3.790	.054	.036	3.790	.488	
Intruksjoner		.016	1	.016	.033	.856	.000	.033	.054	
Blogg-poster		.002	1	.002	.004	.950	.000	.004	.050	
TikTok		.008	1	.008	.004	.947	.000	.004	.050	
Youtube		.145	1	.145	.119	.730	.001	.119	.064	
Twitch/streaming		.650	1	.650	1.492	.225	.014	1.492	.227	
Sosiale medier		2.800	1	2.800	1.261	.264	.012	1.261	.199	
Filmer		.124	1	.124	.130	.719	.001	.130	.065	
Serier		.013	1	.013	.010	.921	.000	.010	.051	
Puzzle		Bøker	1.967	1	1.967	2.605	.110	.025	2.605	.359
		Artikler	.177	1	.177	.364	.548	.004	.364	.092
	Wiki-sider	.005	1	.005	.009	.926	.000	.009	.051	
	Tegneserier/manga	.053	1	.053	.118	.732	.001	.118	.063	
	Intruksjoner	.059	1	.059	.120	.729	.001	.120	.064	
	Blogg-poster	.044	1	.044	.072	.790	.001	.072	.058	
	TikTok	.740	1	.740	.399	.529	.004	.399	.096	
	Youtube	.167	1	.167	.138	.711	.001	.138	.066	
	Twitch/streaming	.017	1	.017	.040	.842	.000	.040	.055	
	Sosiale medier	.015	1	.015	.007	.934	.000	.007	.051	
	Filmer	.815	1	.815	.857	.357	.008	.857	.151	
	Serier	.191	1	.191	.145	.704	.001	.145	.066	
	Error	Bøker	76.997	102	.755					



	Artikler	49.615	102	.486					
	Wiki-sider	63.360	102	.621					
	Tegneserier/manga	45.702	102	.448					
	Intruksjoner	49.815	102	.488					
	Blogg-poster	63.371	102	.621					
	TikTok	189.192	102	1.855					
	Youtube	123.671	102	1.212					
	Twitch/streaming	44.445	102	.436					
	Sosiale medier	226.505	102	2.221					
	Filmer	97.031	102	.951					
	Serier	133.960	102	1.313					
Total	Bøker	365.000	114						
	Artikler	315.000	114						
	Wiki-sider	322.000	114						
	Tegneserier/manga	237.000	114						
	Intruksjoner	300.000	114						
	Blogg-poster	345.000	114						
	TikTok	1426.000	114						
	Youtube	835.000	114						
	Twitch/streaming	253.000	114						
	Sosiale medier	1347.000	114						
	Filmer	717.000	114						
	Serier	934.000	114						
Corrected Total	Bøker	90.184	113						
	Artikler	52.465	113						
	Wiki-sider	74.421	113						
	Tegneserier/manga	52.570	113						
	Intruksjoner	52.421	113						
	Blogg-poster	76.360	113						
	TikTok	199.018	113						
	Youtube	161.939	113						
	Twitch/streaming	52.991	113						
	Sosiale medier	253.939	113						
	Filmer	110.254	113						
	Serier	155.018	113						

a. R Squared = .146 (Adjusted R Squared = .054)

b. R Squared = .054 (Adjusted R Squared = -.048)

c. R Squared = .149 (Adjusted R Squared = .057)

d. R Squared = .131 (Adjusted R Squared = .037)

e. R Squared = .050 (Adjusted R Squared = -.053)

f. R Squared = .170 (Adjusted R Squared = .081)

g. R Squared = .049 (Adjusted R Squared = -.053)

- h. R Squared = .236 (Adjusted R Squared = .154)
- i. R Squared = .161 (Adjusted R Squared = .071)
- j. R Squared = .108 (Adjusted R Squared = .012)
- k. R Squared = .120 (Adjusted R Squared = .025)
- l. R Squared = .136 (Adjusted R Squared = .043)
- m. Computed using alpha = .05

## Appendix D

Individual game genres' correlation to productive English media.

**Parameter Estimates**

Dependent Variable	Parameter	B	Std. Error	t	Sig.	95% Confidence Interval		Partial Eta Squared	Noncent. Parameter	Observed Power <sup>a</sup>
						Lower Bound	Upper Bound			
TikTok	Intercept	1.834	.437	4.194	<.001	.966	2.701	.147	4.194	.986
	RPG	.192	.193	.998	.321	-.190	.574	.010	.998	.167
	Sport	.119	.093	1.273	.206	-.066	.304	.016	1.273	.243
	Strategi	.018	.130	.142	.887	-.239	.275	.000	.142	.052
	Adventure	-.197	.129	-1.528	.130	-.453	.059	.022	1.528	.328
	Kjøretøy	-.145	.124	-1.168	.245	-.390	.101	.013	1.168	.212
	Skytespill	-.154	.100	-1.546	.125	-.352	.044	.023	1.546	.334
	Partygames	.342	.211	1.623	.108	-.076	.760	.025	1.623	.363
	Sandboxsurvival	.045	.129	.353	.725	-.210	.301	.001	.353	.064
	Platformer	.101	.180	.562	.575	-.256	.459	.003	.562	.086
MOBA	-.195	.299	-.651	.517	-.788	.399	.004	.651	.099	

	Puzzle	-.207	.196	- 1.05 5	.294	-.596	.182	.011	1.055	.181
Youtube	Intercept	.913	.292	3.12 9	.002	.334	1.492	.088	3.129	.873
	RPG	.171	.129	1.33 1	.186	-.084	.426	.017	1.331	.261
	Sport	.094	.062	1.51 1	.134	-.029	.217	.022	1.511	.322
	Strategi	-.014	.086	-1.56	.876	-.185	.158	.000	.156	.053
	Adventure	-.157	.086	- 1.82 8	.071	-.328	.013	.032	1.828	.441
	Kjøretøy	.084	.083	1.01 3	.314	-.080	.247	.010	1.013	.171
	Skytespill	-.003	.067	-0.50	.960	-.135	.129	.000	.050	.050
	Partygames	.241	.141	1.71 2	.090	-.038	.520	.028	1.712	.396
	Sandboxsurvival	.043	.086	.497	.620	-.128	.213	.002	.497	.078
	Platformer	.197	.120	1.63 5	.105	-.042	.435	.026	1.635	.367
MOBA	-.227	.200	- 1.13 8	.258	-.623	.169	.013	1.138	.204	
	Puzzle	-.215	.131	- 1.64 6	.103	-.475	.044	.026	1.646	.371
Twitch/streaming	Intercept	1.170	.225	5.20 7	<.00 1	.724	1.616	.210	5.207	.999
	RPG	.051	.099	.511	.611	-.146	.247	.003	.511	.080
	Sport	-.028	.048	-5.84	.560	-.123	.067	.003	.584	.089
	Strategi	-.108	.067	- 1.61 9	.108	-.240	.024	.025	1.619	.361
	Adventure	-.071	.066	- 1.07 5	.285	-.203	.060	.011	1.075	.187
	Kjøretøy	.068	.064	1.06 4	.290	-.058	.194	.011	1.064	.184
	Skytespill	.024	.051	.463	.644	-.078	.125	.002	.463	.074
	Partygames	.094	.108	.866	.389	-.121	.309	.007	.866	.138

	Sandboxsurviva I	.045	.066	.683	.496	-.086	.176	.005	.683	.104
	Plattform	.142	.093	1.530	.129	-.042	.325	.022	1.530	.328
	MOBA	-.164	.154	-1.066	.289	-.469	.141	.011	1.066	.184
	Puzzle	-.093	.101	-.925	.357	-.293	.107	.008	.925	.150
Sosiale medier	Intercept	1.803	.515	3.505	<.001	.783	2.824	.107	3.505	.935
	RPG	.091	.227	.402	.689	-.359	.541	.002	.402	.068
	Sport	.208	.110	1.899	.060	-.009	.426	.034	1.899	.469
	Strategi	-.044	.152	-.286	.776	-.346	.259	.001	.286	.059
	Adventure	-.162	.152	-1.068	.288	-.464	.139	.011	1.068	.185
	Kjøretøy	-.212	.146	-1.456	.149	-.501	.077	.020	1.456	.303
	Skytespill	-.165	.117	-1.404	.163	-.398	.068	.019	1.404	.285
	Partygames	.439	.248	1.769	.080	-.053	.931	.030	1.769	.418
	Sandboxsurviva I	.054	.152	.354	.724	-.247	.354	.001	.354	.064
	Plattform	.231	.212	1.089	.279	-.190	.652	.011	1.089	.190
	MOBA	-.104	.352	-.295	.769	-.802	.595	.001	.295	.060
	Puzzle	-.271	.231	-1.177	.242	-.729	.186	.013	1.177	.214
Wiki-artikler	Intercept	1.108	.235	4.711	<.001	.641	1.574	.179	4.711	.997
	RPG	.011	.104	.109	.913	-.194	.217	.000	.109	.051
	Sport	.007	.050	.149	.882	-.092	.107	.000	.149	.053
	Strategi	.022	.070	.311	.756	-.116	.160	.001	.311	.061
	Adventure	-.053	.069	-.763	.447	-.191	.085	.006	.763	.118
	Kjøretøy	-.073	.067	-1.100	.274	-.205	.059	.012	1.100	.193
	Skytespill	-.046	.054	-.853	.396	-.152	.061	.007	.853	.135

	Partygames	.090	.113	.796	.428	-.135	.315	.006	.796	.124
	Sandboxsurvival	.011	.069	.152	.880	-.127	.148	.000	.152	.053
	Platformer	.109	.097	1.120	.265	-.084	.301	.012	1.120	.199
	MOBA	-.088	.161	-.545	.587	-.407	.231	.003	.545	.084
	Puzzle	.032	.105	.304	.762	-.177	.241	.001	.304	.060
Spillguider	Intercept	1.214	.223	5.431	<.001	.770	1.657	.224	5.431	1.000
	RPG	.074	.098	.749	.456	-.122	.269	.005	.749	.115
	Sport	.018	.048	.375	.708	-.077	.112	.001	.375	.066
	Strategi	-.020	.066	-.299	.766	-.151	.112	.001	.299	.060
	Adventure	-.053	.066	-.799	.426	-.184	.078	.006	.799	.124
	Kjøretøy	-.004	.063	-.065	.948	-.130	.121	.000	.065	.050
	Skytespill	-.014	.051	-.271	.787	-.115	.087	.001	.271	.058
	Partygames	.093	.108	.859	.392	-.121	.306	.007	.859	.136
	Sandboxsurvival	.030	.066	.452	.652	-.101	.160	.002	.452	.073
	Platformer	-.023	.092	-.248	.805	-.206	.160	.001	.248	.057
	MOBA	-.078	.153	-.508	.613	-.381	.226	.003	.508	.079
	Puzzle	-.108	.100	-1.077	.284	-.307	.091	.011	1.077	.187
Tegneserier/manga	Intercept	1.078	.238	4.538	<.001	.607	1.549	.168	4.538	.994
	RPG	.127	.105	1.213	.228	-.081	.334	.014	1.213	.225
	Sport	.012	.051	.243	.808	-.088	.113	.001	.243	.057
	Strategi	.002	.070	.023	.982	-.138	.141	.000	.023	.050
	Adventure	-.093	.070	-1.330	.187	-.232	.046	.017	1.330	.261
	Kjøretøy	-.006	.067	-.085	.932	-.139	.128	.000	.085	.051
	Skytespill	.017	.054	.322	.748	-.090	.125	.001	.322	.062
	Partygames	.064	.115	.557	.579	-.163	.291	.003	.557	.086
	Sandboxsurvival	.004	.070	.063	.949	-.134	.143	.000	.063	.050
	Platformer	-.010	.098	-.099	.921	-.204	.184	.000	.099	.051
	MOBA	-.109	.163	-.669	.505	-.431	.214	.004	.669	.102
	Puzzle	.002	.106	.021	.983	-.209	.213	.000	.021	.050
Blogg-poster	Intercept	1.213	.270	4.493	<.001	.678	1.748	.165	4.493	.994

RPG	.109	.119	.914	.363	-.127	.345	.008	.914	.148
Sport	.080	.058	1.386	.169	-.034	.194	.018	1.386	.279
Strategi	.026	.080	.329	.743	-.132	.185	.001	.329	.062
Adventure	-.129	.080	-1.623	.108	-.287	.029	.025	1.623	.363
Kjøretøy	-.039	.076	-.516	.607	-.191	.112	.003	.516	.080
Skytespill	-.043	.062	-.704	.483	-.166	.079	.005	.704	.107
Partygames	.094	.130	.725	.470	-.164	.353	.005	.725	.111
Sandboxsurvival	-.025	.079	-.312	.756	-.182	.133	.001	.312	.061
Platformer	.072	.111	.647	.519	-.149	.293	.004	.647	.098
MOBA	-.119	.185	-.646	.519	-.486	.247	.004	.646	.098
Puzzle	-6.410E-5	.121	-.001	1.000	-.240	.240	.000	.001	.050

a. Computed using alpha = .05

## Appendix E

Individual game genres' correlation with receptive English media.

		<b>Parameter Estimates</b>								
Dependent Variable	Parameter	B	Std. Error	t	Sig.	95% Confidence Interval		Partial Eta Squared	Noncent. Parameter	Observed Power <sup>a</sup>
						Lower Bound	Upper Bound			
Bøker	Intercept	1.256	.359	3.499	<.001	.544	1.967	.107	3.499	.934
	RPG	.028	.158	.179	.858	-.285	.342	.000	.179	.054
	Sport	.050	.077	.657	.513	-.102	.202	.004	.657	.100
	Strategi	.148	.106	1.393	.167	-.063	.359	.019	1.393	.281
	Adventure	-.004	.106	-.033	.973	-.214	.207	.000	.033	.050
	Kjøretøy	-.075	.102	-.742	.460	-.277	.126	.005	.742	.114
	Skytespill	-.171	.082	-	.040	-.333	-.008	.041	2.085	.542
					2.085					
	Partygames	.132	.173	.762	.448	-.211	.475	.006	.762	.117
	Sandboxsurvival	-.022	.106	-.206	.837	-.231	.188	.000	.206	.055
	Platformer	.134	.148	.905	.367	-.159	.427	.008	.905	.146
MOBA	-.247	.246	-	.317	-.734	.240	.010	1.005	.169	
				1.005						
Puzzle	.260	.161	1.614	.110	-.059	.579	.025	1.614	.359	
Artikler	Intercept	1.744	.288	6.053	<.001	1.172	2.315	.264	6.053	1.000
	RPG	.070	.127	.551	.583	-.182	.322	.003	.551	.085
	Sport	-.006	.061	-.098	.922	-.128	.116	.000	.098	.051
	Strategi	.056	.085	.661	.510	-.113	.226	.004	.661	.100
	Adventure	-.060	.085	-.708	.481	-.229	.109	.005	.708	.108
	Kjøretøy	-.123	.082	-	.133	-.285	.038	.022	1.513	.323
					1.513					
	Skytespill	-.035	.066	-.531	.597	-.165	.096	.003	.531	.082
	Partygames	.030	.139	.216	.829	-.246	.306	.000	.216	.055
	Sandboxsurvival	-.006	.085	-.075	.940	-.175	.162	.000	.075	.051
	Platformer	.049	.119	.416	.678	-.186	.285	.002	.416	.070
MOBA	-.217	.197	-	.273	-.608	.174	.012	1.101	.194	
				1.101						
Puzzle	.078	.129	.603	.548	-.178	.334	.004	.603	.092	
Wiki-sider	Intercept	1.403	.326	4.310	<.001	.757	2.049	.154	4.310	.990
	RPG	-.088	.143	-.612	.542	-.372	.197	.004	.612	.093
	Sport	-.049	.069	-.700	.486	-.186	.089	.005	.700	.107
	Strategi	.180	.096	1.869	.064	-.011	.372	.033	1.869	.457

	Adventure	-.036	.096	-.375	.708	-.227	.155	.001	.375	.066
	Kjøretøy	-.142	.092	-	.127	-.324	.041	.023	1.538	.332
				1.538						
	Skytespill	-.043	.074	-.574	.568	-.190	.105	.003	.574	.088
	Partygames	.216	.157	1.374	.173	-.096	.527	.018	1.374	.275
	Sandboxsurvival	.076	.096	.791	.431	-.114	.266	.006	.791	.123
	Platformer	.104	.134	.776	.440	-.162	.370	.006	.776	.120
	MOBA	-.177	.223	-.795	.429	-.619	.265	.006	.795	.123
	Puzzle	-.014	.146	-.093	.926	-.303	.276	.000	.093	.051
Tegneserier/manga	Intercept	.925	.276	3.346	.001	.377	1.474	.099	3.346	.912
	RPG	.112	.122	.922	.359	-.129	.354	.008	.922	.150
	Sport	-.087	.059	-	.145	-.203	.030	.021	1.468	.307
				1.468						
	Strategi	-.018	.082	-.226	.822	-.181	.144	.000	.226	.056
	Adventure	.083	.082	1.012	.314	-.079	.245	.010	1.012	.171
	Kjøretøy	-.017	.078	-.222	.825	-.173	.138	.000	.222	.056
	Skytespill	.068	.063	1.074	.285	-.057	.193	.011	1.074	.186
	Partygames	-.047	.133	-.350	.727	-.311	.218	.001	.350	.064
	Sandboxsurvival	.038	.081	.462	.645	-.124	.199	.002	.462	.074
	Platformer	-.151	.114	-	.189	-.377	.075	.017	1.323	.259
				1.323						
	MOBA	.368	.189	1.947	.054	-.007	.743	.036	1.947	.488
	Puzzle	-.043	.124	-.343	.732	-.288	.203	.001	.343	.063
Intruksjoner	Intercept	1.538	.289	5.328	<.001	.965	2.110	.218	5.328	1.000
	RPG	.042	.127	.330	.742	-.210	.294	.001	.330	.062
	Sport	-.008	.062	-.123	.903	-.130	.115	.000	.123	.052
	Strategi	.056	.086	.657	.513	-.113	.226	.004	.657	.100
	Adventure	-.039	.085	-.455	.650	-.208	.130	.002	.455	.074
	Kjøretøy	-.163	.082	-	.049	-.325	-.001	.038	1.995	.506
				1.995						
	Skytespill	.006	.066	.087	.931	-.125	.136	.000	.087	.051
	Partygames	-.022	.139	-.160	.873	-.298	.254	.000	.160	.053
	Sandboxsurvival	.077	.085	.911	.365	-.091	.246	.008	.911	.147
	Platformer	.029	.119	.243	.808	-.207	.265	.001	.243	.057
	MOBA	.036	.197	.182	.856	-.356	.428	.000	.182	.054
	Puzzle	-.045	.129	-.347	.729	-.302	.212	.001	.347	.064
Blogg-poster	Intercept	1.365	.326	4.194	<.001	.720	2.011	.147	4.194	.986
	RPG	.128	.143	.893	.374	-.156	.413	.008	.893	.143
	Sport	.082	.069	1.182	.240	-.056	.220	.014	1.182	.216
	Strategi	.133	.096	1.383	.170	-.058	.325	.018	1.383	.278
	Adventure	-.152	.096	-	.117	-.342	.039	.024	1.579	.346
				1.579						



	Kjøretøy	-.244	.092	-	.009	-.426	-.061	.064	2.645	.745
				2.645						
	Skytespill	-.187	.074	-	.013	-.334	-.040	.058	2.516	.703
				2.516						
	Partygames	.204	.157	1.298	.197	-.108	.515	.016	1.298	.251
	Sandboxsurvival	-.039	.096	-.408	.684	-.229	.151	.002	.408	.069
	Platformer	.285	.134	2.125	.036	.019	.551	.042	2.125	.558
	MOBA	.014	.223	.062	.950	-.428	.456	.000	.062	.050
	Puzzle	.039	.146	.267	.790	-.250	.329	.001	.267	.058
TikTok	Intercept	2.760	.563	4.907	<.001	1.645	3.876	.191	4.907	.998
	RPG	.129	.248	.521	.603	-.362	.621	.003	.521	.081
	Sport	.212	.120	1.767	.080	-.026	.450	.030	1.767	.417
	Strategi	-.030	.167	-.182	.856	-.361	.300	.000	.182	.054
	Adventure	-.097	.166	-.583	.561	-.426	.233	.003	.583	.089
	Kjøretøy	-.006	.159	-.040	.968	-.322	.309	.000	.040	.050
	Skytespill	-.078	.128	-.604	.547	-.332	.177	.004	.604	.092
	Partygames	.021	.271	.076	.940	-.518	.559	.000	.076	.051
	Sandboxsurvival	-.140	.166	-.845	.400	-.468	.189	.007	.845	.133
	Platformer	.254	.232	1.096	.276	-.206	.714	.012	1.096	.192
	MOBA	.026	.385	.067	.947	-.738	.789	.000	.067	.050
	Puzzle	.159	.252	.631	.529	-.341	.659	.004	.631	.096
Youtube	Intercept	1.100	.455	2.418	.017	.198	2.002	.054	2.418	.668
	RPG	.370	.200	1.849	.067	-.027	.768	.032	1.849	.449
	Sport	.028	.097	.284	.777	-.165	.220	.001	.284	.059
	Strategi	.313	.135	2.324	.022	.046	.580	.050	2.324	.634
	Adventure	.209	.134	1.558	.122	-.057	.475	.023	1.558	.339
	Kjøretøy	.204	.129	1.585	.116	-.051	.459	.024	1.585	.349
	Skytespill	.057	.104	.550	.583	-.149	.263	.003	.550	.085
	Partygames	-.228	.219	-	.300	-.663	.207	.011	1.041	.178
				1.041						
	Sandboxsurvival	.040	.134	.301	.764	-.225	.306	.001	.301	.060
	Platformer	-.142	.187	-.759	.450	-.514	.230	.006	.759	.117
	MOBA	-.107	.311	-.345	.730	-.725	.510	.001	.345	.064
	Puzzle	.076	.204	.371	.711	-.329	.480	.001	.371	.066
Twitch/streaming	Intercept	1.016	.273	3.727	<.001	.475	1.557	.120	3.727	.958
	RPG	.082	.120	.684	.495	-.156	.320	.005	.684	.104
	Sport	-.072	.058	-	.219	-.187	.043	.015	1.236	.232
				1.236						
	Strategi	-.119	.081	-	.142	-.280	.041	.021	1.479	.311
				1.479						
	Adventure	-.083	.080	-	.305	-.243	.077	.010	1.031	.175
				1.031						

	Kjøretøy	.035	.077	.459	.647	-.118	.188	.002	.459	.074
	Skytespill	.151	.062	2.422	.017	.027	.274	.054	2.422	.670
	Partygames	.057	.131	.430	.668	-.204	.317	.002	.430	.071
	Sandboxsurvival	.147	.080	1.835	.069	-.012	.307	.032	1.835	.444
	Platformer	-.182	.112	-	.108	-.405	.041	.025	1.622	.362
				1.622						
	MOBA	.228	.187	1.221	.225	-.142	.598	.014	1.221	.227
	Puzzle	-.024	.122	-.200	.842	-.267	.218	.000	.200	.055
Sosiale medier	Intercept	2.881	.615	4.682	<.001	1.661	4.102	.177	4.682	.996
	RPG	.015	.271	.054	.957	-.523	.552	.000	.054	.050
	Sport	.281	.131	2.138	.035	.020	.541	.043	2.138	.563
	Strategi	-.210	.182	-	.253	-.571	.152	.013	1.149	.207
				1.149						
	Adventure	-.169	.182	-.931	.354	-.530	.191	.008	.931	.152
	Kjøretøy	-.085	.174	-.486	.628	-.430	.261	.002	.486	.077
	Skytespill	-.017	.140	-.118	.906	-.295	.262	.000	.118	.052
	Partygames	.256	.297	.863	.390	-.333	.845	.007	.863	.137
	Sandboxsurvival	.029	.181	.159	.874	-.331	.388	.000	.159	.053
	Platformer	.466	.254	1.837	.069	-.037	.969	.032	1.837	.444
	MOBA	-.473	.421	-	.264	-1.308	.362	.012	1.123	.199
				1.123						
	Puzzle	.023	.276	.083	.934	-.524	.570	.000	.083	.051
Filmer	Intercept	1.423	.403	3.532	<.001	.624	2.222	.109	3.532	.938
	RPG	.091	.177	.514	.608	-.261	.443	.003	.514	.080
	Sport	.063	.086	.734	.465	-.107	.233	.005	.734	.112
	Strategi	.316	.119	2.644	.009	.079	.552	.064	2.644	.745
	Adventure	-.065	.119	-.549	.584	-.301	.171	.003	.549	.084
	Kjøretøy	.028	.114	.250	.803	-.198	.255	.001	.250	.057
	Skytespill	-.080	.092	-.869	.387	-.262	.102	.007	.869	.138
	Partygames	-.036	.194	-.186	.853	-.422	.349	.000	.186	.054
	Sandboxsurvival	-.165	.119	-	.167	-.401	.070	.019	1.393	.281
				1.393						
	Platformer	.283	.166	1.703	.092	-.046	.612	.028	1.703	.393
	MOBA	.099	.276	.360	.719	-.447	.646	.001	.360	.065
	Puzzle	.167	.181	.926	.357	-.191	.525	.008	.926	.151
Serier	Intercept	2.514	.473	5.311	<.001	1.575	3.453	.217	5.311	1.000
	RPG	.411	.208	1.971	.051	-.003	.824	.037	1.971	.497
	Sport	-.024	.101	-.235	.815	-.224	.176	.001	.235	.056
	Strategi	-.080	.140	-.570	.570	-.358	.198	.003	.570	.087
	Adventure	-.046	.140	-.333	.740	-.324	.231	.001	.333	.063
	Kjøretøy	-.234	.134	-	.083	-.500	.031	.029	1.749	.410
				1.749						

Skytespill	-.081	.108	-.752	.454	-.296	.133	.006	.752	.116
Partygames	.109	.228	.478	.634	-.344	.562	.002	.478	.076
Sandboxsurvival	-.300	.139	-	.034	-.576	-.024	.043	2.153	.568
			2.153						
Platformer	.509	.195	2.610	.010	.122	.896	.063	2.610	.734
MOBA	-.032	.324	-.100	.921	-.675	.610	.000	.100	.051
Puzzle	.081	.212	.381	.704	-.340	.502	.001	.381	.066

a. Computed using alpha = .05