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The Effect of Media Habits on L2 English Proficiency: A study of L1 Norwegian lower secondary pupils

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1 Introduction

"How did you learn English?" is a straightforward question, yet complex. It may provide subjective answers, and that is the motivation behind this thesis. When I was asked this question, my immediate thought was by playing video games and watching English movies without subtitles. If 100 Norwegian teenagers born after the year 2000 were asked this question, similar answers would likely appear. The English language has manifested itself in the Norwegian society, and teenagers are exposed to considerable amounts of English in their everyday lives (Brevik, 2016a; Rindal, 2014).

This thesis aims to investigate if there are significant interactions between lower secondary school pupils' English proficiency and the extent and characteristics of English language exposure from their media habits and out-of-school activities. The English language that pupils are exposed to out-of-school is described by Sundqvist (2009a) as *extramural English* (EE), and will hence be used as a key term in this thesis. To establish a theoretical framework around the L2 exposure pupils may encounter, relevant second language acquisition concepts will be presented. Through the media and being involved with internet related activities, pupils are exposed to considerable amounts of both written and audio-visual English language, which my thesis predicts as *input*. When comprehensible input has been internalised, it becomes *intake*. In relation to activities where the L2 learner is in interplay with other L2 speakers or native-speakers, SLA concepts *output* and *interaction* are presented. The concepts derive from hypotheses proposed by central SLA scholars (Krashen, 1981; Long, 1981; Swain, 1985). The framework is presented in relevance to studies on the effect various media types and EE activities have on L2 learning.

To collect data on Norwegian L1 lower secondary school pupils' media habits, EE related activities and their English proficiency, participants will answer a questionnaire. The questionnaire consists of three segments: background, media habits and the Oxford Proficiency Test (OPT), a placement test consisting 40 sentences. Conducting this survey generates quantitative data. Exclusively using quantitative data is reasoned on the scope of this study: I intend to collect data from one 8th grade, one 9th grade and one 10th grade, which will make a total in the range of 60-90 participants.

1.1 L2 English in Norway

The English language is the most used language in the world, with a quarter of its population being either fluent or competent in English (Crystal, 2012, p. 6). Across the globe, the people who speak English use it as a first language, second language or as a foreign language. Historically, Norway has had connections to English-speaking countries for centuries, due to import and export in international waters (Simensen, 2011, p. 158). These connections only grew stronger because of the continuous internationalisation that occurred for Norwegians, which contributed to even more exposure for them.

Simensen (2011) says that the English language has manifested itself in the Norwegian society in contexts like business, media and tourism, as well as education, where pupils and students use the language in both extracurricular and extramural activities. For these reasons, Rindal (2014) acknowledges that English no longer is a foreign language that is only operated in domain. With the language's manifested position in the society, Norwegian youths are exposed to considerable amounts of English (Brevik, 2016a; Rindal, 2014). They encounter this exposure through the media when they play video games, listen to music, read English books or texts on the Internet, and when they watch imported movies and TV-programmes on the television or on streaming websites such as *Netflix*, *HBO* and *Disney+*.

Most Norwegians find English recognisable, and similarly to the other Scandinavian countries, being proficient English speakers is thought to be an essential skill (Crystal, 2014, p. 75). According to the 9th edition of the *EF English Proficiency Index* (EF Education First, 2019), the Scandinavian countries place top 4 behind the Netherlands on top. Rindal (2013) debates that as a result of Norwegians' improved English proficiency and the exposure from media, English does not feel like a foreign language to Norwegians.

1.2 English as a subject in Norwegian lower secondary school classrooms

Continuing from the previous paragraph: an argument against depicting English as a foreign language in Norway is that Norwegian children are taught English from their first year at

school. English is taught as a compulsory subject from year 1-11, at elementary school (year 1-4), middle school (year 5-7), lower secondary school (year 8-10) and upper secondary school. Students attending general educational programs in upper secondary school have the option to study English in years 12-13, as elective courses.

The Norwegian Directorate for Education and Training (*Utdanningsdirektoratet* [UDIR]) defines English as a key subject for cultural awareness, communication, education and for development of identity (2019, p. 2). The subject intends to establish a foundation for the child to be able to communicate with other world citizens, regardless of their cultural and linguistic background. UDIR (2019) aspires all children to become confident language users, so they can utilise English to learn, communicate and connect with others. In the English subject, pupils will recognise that knowing several languages is a resource in both school and society. The core elements for the English subject in Norwegian schools are communication, language learning and the encounter with texts in English (UDIR, 2019, p. 2-3).

According to UDIR (2019), Norwegian pupils should have a total of 336 hours (1h = 60 minutes) when they start lower secondary school. After completing lower secondary school, they should have been taught English for a total of 588 hours (336h + LSS' 222h).

1.3 Prior research

Studies have investigated pupils' use of L2 English out-of-school activities, and several have been conducted in Scandinavia (Jensen, 2017; Sundqvist, 2009b, 2019; Sylvén & Sundqvist, 2012; Sundqvist & Wikström, 2014, 2015). In addition, a Belgian study on English learning through out-of-school exposure has been conducted (De Wilde, Brysbaert & Eyckmans, 2020). I acknowledge these studies as highly relevant to the aim of my thesis; the researchers disclose convenient approaches and awareness on how extramural English can benefit L2 learning.

Two students from the UiT have researched how Norwegian pupils' media habits affect their English proficiency. The first MA thesis focused on upper secondary school students (Andersen, 2017) and the other on middle school pupils (Bakkevoll, 2018). Both suggest that

lower secondary school pupils are a more appropriate age group to study. However, since the latter lacks details on how the dataset was handled, there is no reason to review nor present it.

Furthermore, the Norwegian Media Authority (NMA) annually collects answers from 9-19-year-olds about their media habits and internet-related activities. The data from the NMA is reviewed to get a perception of English L2 input that Norwegian adolescents are exposed to. Respectively, these studies and their results are elaborated further in Chapter 3.

1.4 Research questions

This thesis aims to investigate if there are significant interactions between lower secondary school pupils' English proficiency and the extent and characteristics of English language exposure from their media habits and out-of-school activities. Two research questions were formed to explore this:

> **RQ1**: Are there significant interactions between the participants' English proficiency levels and the extent and characteristics of their English language media habits?
>
> **RQ2**: Which English extramural activities are most significant for the participants' English language proficiency?

Two hypotheses were formed to answer the research questions:

> **H1**: There will be a positive correlation between the participants' English proficiency and the extent and characteristics of their English language media habits.
>
> **H2**: Participants who engage in productive and active English extramural activities are expected to have a higher English proficiency than those who do not.

The hypotheses and study approaches are explained in more detail in Chapter 4.

1.5 Justifications

If this study succeeds, I wish to enlighten the importance English extramural activities have on L2 learners' SLA. This element can be utilised practically, as "Teachers can use students' experiences with English *outside* of school to further develop their English proficiency *in* school" (Rindal, 2020, p. 37).

1.6 Outline of the thesis

This MA thesis consists of eight chapters. Chapter 1, the introduction, presents the topic, aim, key concepts, research questions and hypotheses. It also provides information about the position that L2 English has in Norway and in the Norwegian school system. Chapter 2 presents the theoretical framing for the study. Chapter 3 introduced prior studies that are relevant to the thesis. Chapter 4 elaborates the thesis' research questions and hypotheses. In Chapter 5, a detailed description of the methods used are given. Chapter 6 presents the findings of the study, and these are discussed in light of relevant theory and previous research in Chapter 7. Lastly, Chapter 8 is the conclusion.

2 Theoretical Background

This chapter intends to present theoretical background information to support my thesis. As mentioned in the introduction, Norwegian youths are immensely exposed to the English language thanks to the media and the Internet (Brevik, 2019a, p. 596), which my thesis predicts as significant *input* in second language acquisition (SLA). As the role of language input in SLA is a conception in SLA theory that has been universally scrutinised, this chapter only presents a mere fraction of it.

The initial section presents Krashen's *comprehensible input hypothesis* (1981) to establish a theoretical framework for the sections that follows. The next section presents a term we can use for the various input types that Norwegian youth is exposed to out-of-school, *extramural English* (Sundqvist, 2009a). Thereafter, sub-sections show what relevant studies tells us why

various input types can affect L2 learning. Lastly, SLA conceptions *intake* and *output* are presented (2.3 & 2.4), followed by sub-sections in conjunction to how they are relevant to English extramural activities.

2.1 Comprehensible Input

Krashen's *monitor model* (1981) has been important and influential for research concerning the role of input in SLA. Among the five hypotheses in the model is the *comprehensible input hypothesis*. With this hypothesis, he claims that for SLA to occur, learners must be exposed to a type of L2 that they can comprehend. Further, learners should be exposed to comprehensible language input that includes language structures that are beyond their current level. If *i* symbolizes the previously acquired linguistic competence and knowledge, the learner moves from *i* to *i+1* as he or she understands input that contains *i+1*. Here, the learner is not focussed on the form, but the meaning, as he or she is being exposed to comprehensible input one step beyond his or her current level. Harmer (2007, p. 55) acknowledges that the decisive ingredient in the learning process of any language is exposure to it; the more comprehensible input the learner interacts with, the better.

2.2 Input out-of-school – Extramural English

Krashen (1981) highlights the importance for language learners to "[…] increase their second language proficiency in informal environments" (p. 40). Outside of the classroom, Norwegian pupils have access to a significant amount of exposure to the English language through media and the internet (Brevik, 2019a, p. 596). However, some of it can appear as incomprehensible language input that low level language learners might have difficulty comprehending and internalising (Bahrani & Sim, 2012, p. 62). The types of English input that pupils are exposed to outside-of-school can be identified as *extramural English* (Sundqvist, 2009a, p. 25).

Moreover, Sundqvist (2009a) introduces EE as a term that also covers aspects of output. She claims that the term resembles Benson's (2001) definition of self-directed naturalistic learning,

but highlights an important distinction: in EE, "[…] no degree of deliberate intention to acquire English is necessary on the part of the learner, even though deliberate intention is by no means excluded from the concept" (Sundqvist, 2009a, p. 25). However, what is decisive for the learner is that he or she meets or is involved with L2 English out-of-school. This interaction can stem from the learner's deliberate (and in this way conscious) intent to set up a position for L2 learning, but it can also stem from other reasons. The learner might not even have a reason for EE interaction at all. Yet, if a foreigner in the street suddenly initiates a conversation in English, the learner is exposed to unforeseen EE (Sundqvist, 2009a, p. 25). Interactions like these can lead to what is known as *unintentional learning*, which is "accidental learning of information without the intention of remembering that information" (Forsman, 2004, p. 173). This term too, has resemblance to EE, but there is an apparent contrast, as the learner's intention is excluded from Forsman's definition. Additionally, EE interactions or engaging in EE activities are mainly voluntary actions from the learner (Sundqvist, 2009a, p. 26).

Some learners interact with EE or involve themselves in EE activities with the aim of improving their English proficiency. By doing this, "they take charge of their own L2 learning" (Sundqvist, 2009a, p. 26), termed *learner autonomy*. A possible scenario is that a learner develops interest in the language through EE activities, an interest he or she may did not initially have; i.e., a *Counter-Strike* gamer becomes aware of the importance of communication in order to win.

Sundqvist (2009b) conveniently depicted different EE activities as *active* and *passive*, by how they are perceived by the learner and are interacted with. While being exposed to considerable amounts of EE in their everyday lives, pupils are also exposed to *authentic language* use in various contexts. This includes the use of English to communicate for various intentions. In resemblance to UDIR's principles for English as a school subject (1.2), Rindal (2020) says "Such authentic language use reflects the status of English as an international language, and is consequently the type of language use students will need for current and future participation in local and global life" (p. 36-37).

2.2.1 L2 input from reading English books

Reading books in a foreign language for pleasure is an extramural activity that is useful for language learning (Krashen, 1989; Wren 2002). Nuttal (2005) lists various definitions of reading in three main branches: (1) decoding, (2) pronouncing and (3) understanding. These three branches are related: to make sense of a text, it is necessary to know how to decipher the code, for example the Roman alphabet; along with the ability to read it with fluency and clarity to understand how the words sound. While this extramural activity is commonly characterised as a receptive skill, it requires an amount of production or action from the reader so that it becomes beneficial (Sylvén & Sundqvist, 2015). Brown and Abeywickrama (2010) argue that differing types of reading (perceptive, selective, interactive and extensive) and reading books for pleasure would meet as interactive as well as extensive reading. For interactive reading, it required the reader to interact with the book, depicted as "a process of negotiation meaning; the reader brings to the text a set of schemata for understanding it, and intake is the products of that interaction" (p. 229). Further, they identify extensive reading as a term for when the reader is reading research; as an extramural activity in this context.

2.2.2 L2 input from watching English movies or TV-series

Input from movies provide language learners with opportunities of exposure to authentic language spoken in genuine settings (Stempleski, 1992). Exposure to authentic language is important for L2 development, and Rao (2019) says movies should be used in classrooms, as he considers them to be powerful tools for teachers. Movies can also be used as motivating components for L2 learners. Kaiser (2011) says that the language uttered in movies include diverse forms of speeches, for example from differing educational stages, speeches of children and non-native speakers, accents and slang from rural and urban speeches, and regional dialects that L2 learners will encounter in the country of the target language.

In an empirical study on EFL learners' vocabulary development, Yuksel (2009) mapped the effectiveness of watching movie clips with or without subtitles. Whereas the 120 learners were randomly divided into two groups to watch the clips with or without subtitles, pre-post-tests revealed that both groups obtained significant growth. Yuksel (2009) claims that this

vocabulary growth comes from the relevance of encountering the terminology in genuine context. Other studies that examine effectiveness of movies with or without subtitles for language learners, emphasize more on listening skills development (Huang & Eskey, 2000; Markham, 1999). In a study on intermediate language learners, Huang & Eskey (2000) found that subtitles strengthened the participants' listening comprehension skills. Likewise, Markham (1999) conducted a similar study where he found that the subtitles assisted language learners to develop their word recognition ability. According to Egeberg, Hultin and Berge (2016), imported movies and TV-programmes are not dubbed in Norway, and adolescents use new technologies and international media sources confidently.

2.2.3 L2 input from playing video games

While watching movies is a component that can be used in education practices, playing video games is something that is "rarely addressed or developed in formal curricula" (Reinhardt, 2019b, p. 135). Reinhardt claims that an important factor of continued second language learning is the growth of autonomous learning skills. Further he says that the learner has access to authentic gameful socio-literacy practices and an affiliation, which has rattled the monopoly formal education has had on second language learning, due to the lack of recognition or adaption for extramural activities such as playing video games. L2 learners need to develop their autonomous learning abilities to make decisive use of the wide range of available material, "which entails knowing how to learn both on their own and socially, as well as how to self-direct, regulate, and assess their own learning" (Reinhardt, 2019b, p. 135).

Reinhardt (2019b) promotes three key points about how L2 learning might happen in video games. First, a structural-behaviourist perspective sees L2 learning through gaming as development that happens when the learner translates, experiences repeating exposure or reinforcement. The second is from a psycho-cognitive stance, as it would uphold immersion in comprehensible input, interaction, noticing, negotiation for meaning, and opportunities for production. The third is from a socio-informed aspect, which argues that social interaction, collaboration and participation in socio-literacy practices will improve language learning.

Interaction is an element found in gaming that promotes communicative language acquisition (García-Carbonell et al., 2001, p. 486). The comprehensible input is grasped through interaction as the conversation parts clarify, confirm, repeat, paraphrase, or ask for clues or information. If a listener struggles to understand, the speaker speaks slower, attempts to simplify what is said, alternates his or her vocabulary, selects propositions that are easily understood, utilises clearer structures, or checks to see if the listener understands. According to Hatch (1983), the most useful form of interaction is when the outcome has not been predetermined, and when the conclusion is negotiated between the two parts.

2.2.4 L2 input from social media platforms

Outside of school, pupils visit websites and use social media (SoMe) or applications every day, and it has become somewhat a part of their life (Reinhardt, 2020, p. 235). The most well-known applications and social networking platforms today include *Facebook*, *Instagram*, *Twitter*, *YouTube*, *Reddit* and more. All of these have social media-life features. This involves having an account, a profile, freedom to share and interactive response tokens such as "like/dislike", "upvote/downvote" or commenting someone else's post (Reinhardt, 2020, p. 236). Research suggests that using SoMe can help the to develop L2 learners' language proficiency, cultural knowledge of the target language, engage learner identities and literacies, and help in the process of becoming autonomous learners (Dixon & Thomas, 2015; Lamy & Zourou, 2013). For learning purposes, it is possible "that social media used informally can afford the development of intercultural, sociopragmatic, and audience awareness, language learner and user identities, and particular literacies" (Reinhardt, 2019a, p. 31).

According to Reinhardt, use of SoMe for L2 teaching must be treated with factors such as issues of privacy, access and literacy skills. Pupils may also experience etiquette norm and unacceptable behaviours, which they must treat with critical awareness. If L2 learners use the platforms with care and thought, SoMe "can be effective for formal L2 learning purposes" (Reinhardt, 2020, p. 240).

2.3 Intake

Decades ago, and still today, intake "has taken on a number of different meanings, and it is not always clear what a particular investigator means in using it" (McLaughlin, 1987, p. 13). In light of the many definitions of the term, Reinders' (2012) attempted to categorize them. He chose three explicit categories: (1) definitions that see intake as a product, (2) those that see intake as a process, and (3) the ones that see it as a blend of the two. Accordingly, by putting the definitions up against each other, he proposes a working definition stating that "intake is a subset of the detected input (comprehended or not), held in short-term memory, from which connections with long-term memory are potentially created or strengthened" (p. 28). Based on this, we must acknowledge that there is a chance that even an intermediate L2 learner will forget words throughout the day, although he or she fully understood the input earlier in the day. According to Gass (2013), if the learner succeeds to withhold the perceived, comprehensible input, it becomes internalized intake.

2.3.1 Intake through immersion

Intake can be obtained through immersion, when the learner is completely engaged in what he or she is doing, free from distraction (Wang, Petrina & Feng, 2017, p. 146). The immersion theory, also known as the flow theory, was first proposed by Csikszentmihalyi (1975), being a model described as an empirical flow pattern that makes individuals to become wholly involved in the learning process. The theory highlights concentration as a central factor, as it influences that immersion experience substantially. A study from Rensin (2002) indicated that a learner's concentration degree is related to the working memory, which works when he or she learns to be tendentious towards a certain type of memory; which then can result in learning effects. Moreover, Wang, Petrina and Feng (2017) states that "[…] a reduction in anxiety and increase in the degree of immersion have been shown to improve learners' ability to increase their English vocabulary" (p. 146).

This is when media, especially the Internet, should be considered as a useful tool for language learning, both in and outside of the classroom, as "[a] number of language teachers and learners have become interested in using the Internet to conduct tasks" (Zhang, 2019, p. 1239). While

teachers would prefer to utilize internet resources for enhancing their teaching materials and instruction, language learners could use the Internet to conduct their tasks since internet resources can be diverse, easy to access, up-to-date, free and appealing. For example, as the recipient devotes all attention to what appears on the screen, he or she is simultaneously in charge of what will eventually happen. The freedom of picking and choosing between various sources of language input using the internet is very beneficial for the pupil, partly because the input is salient. Kelly (2000) suggests that a language items needs "[…] to be relevant to the student at a particular time in order for there to be conscious intake and before the student can use it consistently" (p. 22). The pupil is privileged in the sense that he or she can skip to the next YouTube video if the language is incomprehensible, choose another article if the language is too complex, or single out a specific video game in the *Steam* catalogue because of a straightforward review. Language is therefore acquired when the pupil has focused on it either because he or she needs it, have met it though communicative tasks that are meaning-focused, or because the pupil has noticed relevant language in an appropriate setting. Zhang (2019) suggests that by surfing the Internet, pupils will perhaps no longer actively consider the L2 as a strain, but instead see it as amusement, having the chance to communicate with people from all over the world. Harmer (2007) suggests that "this kind of acquisition is intrinsically superior to asking students to focus on a series of pre-determined forms" (p. 54).

2.4 Output

The main difference between input and output is that input is the target language exposed to the pupils, while output is the target language produced by using their productive skills (writing and speaking). Swain (1985) acknowledged the relevance of output in language learning. Through her *comprehensible output hypothesis,* she proposed that having to talk using the L2, the learner is actually contributing to his or her improvement: "Producing the target language may be the trigger that forces the learner to pay attention to the means of expression needed in order to successfully convey his or her own intended meaning" (p. 249). Accordingly, the hypothesis implies that since the learner's production of comprehensible output is seen as a claim, it accelerates the learner ahead in L2 development. Not only does it notion to improve

fluency and generate better automaticity, output production can aid the learner in resolving grammatical aspects of the L2, because of the learner's pursue to organize his or her thoughts. Hence, she states that output production "may force the learner to move from semantic processing to syntactic processing" (Swain, 1985, p. 249). This corresponds with Swain's later work (1995) where she argues that output can stimulate the language learner to unfold from semantic, nondeterministic processing into "complete grammatical processing needed for accurate production" (1995, p. 128). Hence, output is not only a way to rehearse what you already know, but a way to acquire new elements of the L2. This assumption is supported from a more cognitive stance, as Long's (1981) *Interaction Hypothesis* sees the interplay between the learner's output, target language input and feedback the learner gets on his or her production, as important for language growth. With interaction like this, the learner will possibly acquire new L2 features because of occurrences coming from negotiation of meaning and intermitted attention to form (Sylvén & Sundqvist, 2012, p. 305). Several scholars agree on the importance for learners to provide opportunities for output production in interactions to become proficient in the target language, more than mere receptive understanding (Gass & Mackey, 2006; Swain, 1995). Correspondingly, Swain (2000) suggests that collaborative dialogue is one pivotal way of making that happen.

2.4.1 Oral and written output in video games

In literature on gaming-situated language learning, researchers have recognised, and empirically observed that collaborative dialogues dominate in a range of online video games (Bailey et al., 2006). In popular games like *World of Warcraft* (WoW), *Counter-Strike* (CS) and *League of Legends* (LoL), collaboration is highly recommended to successfully win a round or complete a task. Engaging in this can be challenging cognitively when gamers has to use their L2, while at the same time attempt to build on other's ideas, use counter-arguments and comprehend feedback (Steinkuehler & Duncan, 2008, p. 531). Reinders and Wattana (2010) saw positive effects of playing online multiplayer games on the quality and quantity of second language interaction and on learners' eagerness to communicate. A corpus analysis conducted

by Thorne, Fischer and Lu (2012) of in-game texts from WoW, illustrates "a high degree of lexical sophistication, lexical diversity, and syntactic complexity" (p. 290).

3 Previous Research

In a study conducted on Danish L2 English learners aged 8-10 years, Jensen (2017) investigates their interaction and use of EE. Data on EE-habits were collected with a one-week language diary, self-report with guidance from parents or guardians. The Peabody Picture Vocabulary Test was used to obtain the participants' vocabulary proficiency scores. The findings show that the most common EE activities were gaming, music and TV. Boys played video games significantly more than girls. The study found a significant interaction related to the boys' vocabulary scores, both for games with oral and written L2 input and for games with only written L2 input. The study suggests that frequent gamers outperform non-gamers on formal L2 assessments, possibly putting non-gamers at a disadvantage.

In a study conducted on Swedish teenagers, Sundqvist (2009b) investigated the connection between their use of EE and their learning outcomes. She discovered that when 15-16-year-old pupils undertook English activities depicted as *passive* extramural, for example watching films or listening to music, there was a weak connection between these activities and the pupils' English vocabulary and oral skills. On the other hand, when the pupils engaged in more productive or *active* extramural activities, like playing video games, surfing the Internet or reading books, the connection with their English vocabulary was stronger. The study indicates that "[EE] functions as a pathway to progress in English" (Sundqvist, 2009b, p. 75).

In a follow-up study, Sylvén and Sundqvist (2012) explored gaming as an EE activity and its effect on gamers' English proficiency. The study was conducted on young L2 English learners in Sweden. Results presented a clear pattern: on vocabulary tests, frequent gamers outperformed moderate, who then, outperformed non-gamers. By examining logs and questionnaires, the study could point out that the boys spent significantly more time on gaming than the girls. Their findings suggest that playing video games from an early age can be substantial for English SLA. An interesting assertion is that if the boys did not engage as

extensively as they do in EE video games, they would perhaps be behind the girls in terms of English proficiency (Sylvén & Sundqvist, 2012, p. 201-202).

Another study suggesting gaming to benefit English language proficiency, was conducted by Sundqvist and Wikström (2014). They aimed to examine the relation between gaming and in-school L2 English vocabulary measures and grading outcomes. The participants were Swedish 15-and-16-year-olds. After comparing the results of frequent gamers, moderate gamers and non-gamers, they found that frequent gamers had the highest scores in the test that measured vocabulary. This group showed that they were able to produce more advanced vocabulary than less frequent- and non-gamers. In a follow-up study, Sundqvist and Wikström (2015) discovered that boys who spend much time on video games, used more sporadic and complex words in essays and, again, regularly got the higher scores on vocabulary tests.

In a recent study, Sundqvist (2019) investigated the link between English vocabulary and gaming habits, including the types of games they play and how extensively. Through answers from questionnaires and vocabulary tests, essays and interviews, Sundqvist found a positive link to the time spent aspect, but no relation with game genre. Her study suggests that gamers typically use a more advanced vocabulary than non-gamers.

De Wilde, Brysbaert and Eyckmans (2020) examined the level of English proficiency children can obtain through EE exposure in informal settings prior to English instruction in the classroom. They also wanted to determine the most effective input types for English SLA. Their research found that extramural activities that offer the learner opportunities for social interaction and authentic communication as more effective input types for language acquisition than those that only offer passive perception, like watching television and listening to music. Correspondingly, they also list reading books as a type of input that only offers passive perception, being less effective.

Andersen's MA thesis (2017) investigates the relation between the media habits and the English proficiency of 86 L1 Norwegian upper secondary school students. The results showed positive correlations between English proficiency scores, reading English books and communication

while gaming. The study was conducted on 16-20-year-olds, and for further research, Andersen (2017) suggests studying younger students.

Lastly, I want to highlight recent data from the NMA. Starting in 2006, the NMA annually collects answers from 9-18-year-olds about their media habits and internet-related activities. In 2020, they managed to collect roughly 3.400 answers.

For lower secondary school pupils aged 13-16, 99% reported that they use social media (NMA, 2020, p. 13). Girls use social media platforms Instagram, TikTok and Facebook more frequent than boys. The survey revealed that 86% of all participants aged 9-18 plays video games. Furthermore, the participants who reported that they play video games were asked to comment on various statements about gaming. One these statements related to if "gaming improves my English proficiency". 70% of the participants agreed with this statement, and 17% did not agree nor disagree (NMA, 2020, p. 7). However, a substantial gender difference showed from this statement. Illustrated by Figure 2, results show an increase from the boys' youngest age-group to the older age-groups, where they agree to the statement with 83%/84%. The girl's highest percentage came from the age-group 15-16-years-old (61%).

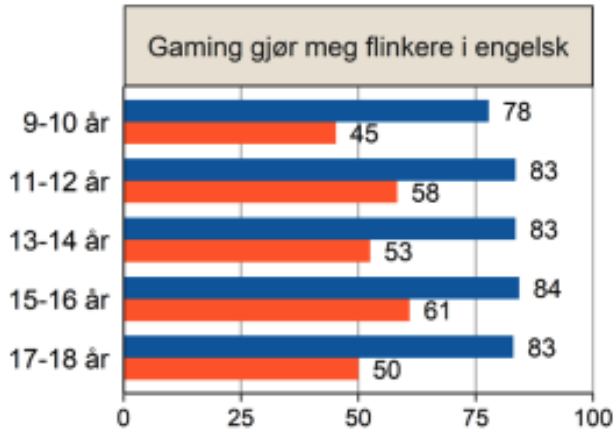

Figure 1. Percentage of boys and girls in different age groups who play games, and agrees that gaming improves their English proficiency (NMA, 2020, p. 8)

Considering the dissimilarities between boys and girls, my assertion is that boys play more game genres that requires oral production.

4 Research Questions

The first aim of the study is to investigate if there are significant interactions between the participants' English proficiency and their media habits. The second aim of the study is to analyse the effects of various types of input and distinguish if some have more impact on the pupil's language acquisition than others. In addition, a focal point in the study is established towards previous research and findings that claims there is a distinct difference for boys' and girls' use of media and extramural activities (Jensen, 2017; NMA 2020).

To conduct the investigation of these aims, the participants in this study will answer a questionnaire consisting of three parts: (1) background information (gender, age, grade, prior English grade and if the participant speaks Norwegian at home), (2) English extramural activities and media habits on categorised websites, and (3) the Oxford Proficiency Test. The pupils can choose between several categories that represent their weekly frequency and how many hours they generally engage in the activity. To measure their English proficiency levels, the participants will answer a 40-question-version of the Oxford Proficiency Test.

Thus, the three research questions of this study are:

> **RQ1**: Are there significant interactions between the participants' English proficiency levels and the extent and characteristics of their English language media habits?
>
> **RQ2**: Which English extramural activities are most significant for the participants' English language proficiency?

Two hypotheses were constituted in order to answer the research questions, they are as following:

> **H1**: There will be a positive correlation between the participants' English proficiency and the extent and characteristics of their English language media habits.
>
> **H2**: Participants who engage in productive and active English extramural activities is expected to have a higher English proficiency than those who do not.

My assertion behind **H1** claims that those who manage to internalise the massive out-of-school input are the Norwegian L1 pupils who will achieve high English proficiency. This assertion rests on the idea that these pupils also utilise input from formal school instruction towards internalising form and grammar, to further supply comprehending the EE input. The participants age ranges from 13-16-years-old, and most Norwegian youths this age experience considerable exposure to the English language in their daily lives (Rindal, 2020, p. 29). To develop their L2 further, they must cultivate the input sources that interests them.

H2 argues that certain L2 input types induce learning outcome more than others, particularly the ones that require the learners to be productive/active and to rely on their language skills (Sundqvist, 2009a, p. 204). Sylvén & Sundqvist (2015) sees reading books as a receptive skill that also necessitates production or action from the reader for it become profitable. In addition to reading English books, I predict playing video games to be an activity that leads to higher English proficiency. I especially base this assumption on the interaction aspect of gaming. As the extent of online gaming and competitive multiplayer games seem to increase continually, it is highly recommended that the gamer possesses L2 abilities. English has become the lingua franca of the world (Jenkins, 2015), and gamers from different countries tend to use the language for communication in-game. Hence is why I expect the participants who interact with others in-game to have a higher English proficiency than those who do not.

Watching English movies and TV-series as an extramural activity can be valuable for the language development of L2 learners if their receptive skills are moderately challenged. I expect most of the participants to engage in this EE activity daily. Studies suggest that L2 learners can develop listening skills, recognition skills and comprehension skills when watching L2 movies (Yuksel, 2009; Huang & Eskey, 2000; Markham, 1999). Therefore, I predict the participant who watches English movies and TV-series with English subtitles or without subtitles to have a higher English proficiency than those who operate with Norwegian subtitles while watching.

5 Methodology

In this chapter, I intend to outline the data collection from lower secondary school pupils and disclose the necessary methods to do so.

At the beginning of the writing process, my goal was to collect data from participants at all three stages of lower secondary school, pupils aged 13-16 years old. The conventional Norwegian school classes consist of 20-30 pupils, and I imagined 60-90 answers would be manageable. After reaching out to three teachers, one in each grade of the Norwegian lower secondary school, we agreed that I should be present in the classroom while the pupils answered the questionnaire. However, because of Covid-19, I had to adapt to the Norwegian government's guidelines for infection control. This meant I could not be present in the classroom to observe the pupils answering the survey.

5.1 The Questionnaire

Lower secondary school pupils will answer a questionnaire consisting three parts. I am collecting data using *Nettskjema*, a survey platform developed and operated by the University of Oslo. It is compatible through the internet browser and lets you assemble and administrate digital forms. Like on any other website, an information capsule (cookies) is made in the participant's internet browser. These capsules do not contain any references to the participant's form ID, but they do contain a survey session ID that is valid until the participant has completed the survey or closed his or her internet browser. The concluding questionnaire is easily accessible as the participant simply visit the website the class leader provides.

Background information

The first part of the questionnaire consists of questions about:

1. **Gender**

This question was established to investigate if there is a distinct difference between gender's use of media and EE activities. Previously mentioned studies have found distinct gender differences (Andersen, 2017; Jensen, 2017; NMA, 2018; NMA 2020; Sundqvist & Wikström, 2014; Sundqvist, 2019).

2. **Age**

Age is included to see if there is a correlation between the participant's age and their English proficiency levels. As every participant is a pupil in lower secondary school, I also want to compare their media habits towards their age. Data from the Norwegian Media Authority (2020) shows that the media habits of Norwegian adolescents are fascinating, as their interests develop rapidly.

3. **Prior grade**

Even though certain pupils will have matching media habits, it is not certain that they perform similarly in the English school subject. Comparatively, it is possible that they can excel both their written and oral English skills by spending time playing video games each day, while having a poor grade in English. A poor English grade does not necessarily mean they have poor proficiency in the language.

4. **Language spoken at home**

This question is included to ensure that the pupil is learning English as his/her main target for L2 learning at school. Bilinguals who speak English at home will be excluded from the dataset.

Media habits

Part two of the questionnaire are questions about the pupil's media habits, possible L2 input sources. Various types of EE activities are of importance, as they will be emphasised in the analysis. First, the participant must choose how often he/she uses the certain type of media on a weekly basis. Thereafter, approximately how many hours each day. Additionally, there are secondary questions that vary from each type of media. If a pupil does not engage in an activity, he or she can choose the option "I do not read English books; I do not play video games".

Below I will specify the types of media that are included in the questionnaire:

1. **English music/podcast**

Listening to English music or podcast is a passive activity that exposes the pupil to receptive L2 input (Sundqvist, 2009a). There is an inevitable chance for the participants to listen to music differently: some emphasise the lyrics, while others think the melody is the most important. Instrumental music or music with limited vocal is not a reliable source of L2 input.

2. **English books/comics**

Through **H2** I predict reading English books or comics to be among the extramural activities that affects L2 learners' English proficiency the most. However, I do not expect many of the participants to read frequently. The participants who do read books in English are expected to have a higher proficiency than those who do not.

3. **English movies and TV-series**

As mentioned earlier (2.2.2), movies and TV-series where the original language is English, are usually not dubbed in Norway. Based on the statistics from the NMA (2020), I expect most youths to choose YouTube, Netflix and other streaming platforms over the conventional television. As English language movies and TV-programmes are available to watch from streaming sites, the part of the questionnaire that involves streaming websites can be considered an extension of this.

4. **Video games**

Playing video games is expected to be an English extramural activity that induce a higher L2 proficiency. While they interact with others during the activity, the players are required to use their L2 skills in-game, which can have great impact on learners' oral proficiency (Sundqvist, 2009a, p. 204). In-game communication is the motivation for the first secondary question for this EE activity. I see this question as important because of the importance of output while learning an L2. The interface of most modern online video games is conveniently suited for communication as there is an in-game-use-microphone option. The other secondary question for this EE activity is about game genre. While Sundqvist (2019) did not find a clear correlation between English vocabulary and game genre in her study, I expect to see a correlation for the participants' who play team-based video games and their English proficiency.

Websites

In this part of the survey I attempted to group different websites the way I saw them best suited together. Even though the term "website" is quite broad, I decided to use it since it also covers telephone applications and functions. The structure of these questions is different to those above: rather than asking how often the participant visits a website on a weekly basis, I decided to simply ask how much time he or she spent on that website each day: "0-1 hour; 2-3 hours; 4 hours or more". The second question asks if the content of the website is in English. The third question asks whether the participant communicates in English with others through this website.

The websites were first chosen based on my own assumptions, then with the help of SimilarWeb (2020), and finally through feedback from the pilot test.

The website groups I put together are listed below:

5. **Social network platforms (Facebook, Instagram, Twitter etc.)**

Websites like these are among the most visited sites in the western part of the world. It is, however, no certainty that the user will encounter English content here. The algorithms on the websites play a massive part in what content is shown. Moreover, much is based on what pages, channels and users the consumer chooses to follow. Since the webpages are partly user-configured (you can for example choose a preferred interface language), the input may vary drastically. Some may experience English articles and videos in their feed, while others only see Norwegian ones. Interactions with others on these types of websites are typically commenting on pictures and articles.

6. **Direct-Messaging platforms (Messenger, Snapchat, Whatsapp, SMS etc.)**

I included this group because of the written output option. Even though Norwegians generally write in Norwegian, both dialect-texts and using abbreviations is very common. a great amount of abbreviations originate from English, and youths are familiar using it.

7. **Steaming sites (YouTube, Twitch, Netflix etc.)**

This part is connected to the "watching English movies and TV-series" questions. Even though this type of input cannot be acknowledged as adapted, the users are free to pick for themselves what content to watch. Subsequently, they can watch content that has a level of English that related to their own proficiency. Communicating through streaming sites is limited: comment section and chat. On the other hand, if the participant creates videos or streams on Twitch, the output may become highly rewarding.

8. **Forums (Reddit, 9gag, diskusjon.no etc.)**

Making use of forums is an excellent way to read other people's opinions about something that might interest you. Reading is of course a method of being exposed to written input. If the user

participates in the discussions, they produce output. All things considered, making use of forums can be both a passive extramural activity and an active extramural activity.

9. Video-sharing sites (TikTok etc.)

A website or application that has caught the interest of youths the last few years is indeed the Chinese video-sharing social networking service TikTok. As it suits English speaking pop-culture and music, celebrities and influencers have begun to use TikTok as a tool to reach their fans and followers.

10. Other

This question is included because of the pilot test. Only ‘buy, sell and trade sites’ were point out as missing, but since such websites have an age limit, I did not create a dedicated category them. If a website they use often is missing, they can simply choose ‘4 hours or more’ here.

English language proficiency test

The third and most time-consuming part of the questionnaire is the same test Andersen (2017) used in his study. It is a customised version of the Oxford Proficiency Test retrieved from Jensen (2016). The test originally consists of fifty questions, but Andersen left out the last ten because of their difficulty, even for native speakers. I considered to cut the test even further but decided to go along with the structure Andersen (2017) presented.

The first part of the test is 20 standalone sentences where the participant must choose one of three given words for each of them. The last part is different in that the sentences, or questions rather, merge together so the participant must consider the previous sentence before choosing a word for the next. Below are examples from both parts of the OPT:

11) Mohammed Ali _____ his first world title fight in 1960.

- has won
- won
- is winning

28) _____ was heavier than air, in other words, in

- who
- which
- what

5.1.1 Validity and reliability

A reliability issue of using this type of questionnaire for collecting data is that it is not a given that the participants do their absolute best. There are potential lazy students who answer the survey blindly and do not bother to put in an effort because it is not graded work, and they know that their answers cannot be tracked back to them. When conducting the survey in a classroom, the possibility of several pupils using one computer to give a joint contribution is eliminated. Yet, it is hard to know whether someone peeks at another pupil's screen. As some of the questions discloses how many hours a pupil spends on different media, it can perhaps cause unease for the pupil, if he or she does not want the person next him or her to know the honest answer. By using a quantitative method of gathering data concerning time consumption on extramural activities, I only get a representation by the answer that the pupil chose on the questionnaire. This aspect decreases the validity of the survey.

To secure more reliable data, an idea is to include some questions where the participants must share their own thoughts about a topic. With qualitative data, I have the possibility to subdue certain questions that can be perceived as ambiguous, especially in part 2 where the participant must specify how many hours is spent on the different media. The most meticulous research method is perhaps structured interviews coupled with quantitative data through questionnaires

and logs. However, because of a potential sample size consisting 60-90 pupils, a validity measure like this is outside of the scope of this MA thesis.

5.2 Statistical instruments

After the participants answer their surveys, *Nettskjema* allows the administrator to download the spreadsheets. The data within these spreadsheets are then handled in Excel to make it appropriate for the statistical software; *IBM SPSS 26* was used to calculate the statistical tests.

To investigate significant interactions between the extent of the pupils' media habits and their English proficiency, a test that measures their linear relationship is needed. *Pearson's correlation coefficient* (PCC) is a test of such. In aid of answering **RQ1**, the test will help to investigate both the extent and the characteristics that EE exposure from media and EE activities have on L2 learners' language proficiency.

The PCC (r) is a number between -1 and 1. It is considered a parametric test that reveals how two variables change correspondingly. If both variables increase, it causes a positive correlation (r between 0 and 1). In contrast, if one variable increases, while the other decreases, there will be a negative correlation (r between -1 and 0). If the p value is lower than 5% ($p < .05$), the correlation is considered significant. This is our significance level (α). A significant correlation "means that it is not random or due to chance" (Sundqvist, 2009, p. 112).

Dancey and Reidy (2017, p. 228) recommended using a non-parametric test when having a non-normal data distribution in smaller data samples. Yet, there are arguments for why it fits normal theory:

After Pearson (1929) studied samples of sizes 20 and 30 from two distributions that were considerably non-normal, he argued that "the normal bivariate surface can be mutilated and distorted to a remarkable degree without affecting the frequency distribution of r" (p. 357). When '$p \neq 0$', cases were admitted being more complicated. However, Pearson (1929) claimed that the distribution of r is remarkably stable, nonetheless.

In a study where Hey (1938) examined samples from four non-normal populations, and studied the correlation coefficient, regression coefficients and each population's ratio of two independent estimates of variance. The results agreed with Pearson's cases of sampling from non-normal distributions, and "[All] this suggests that considerable non-normality in the original distribution will not affect the distributions of correlation and regression coefficients even in the case of high correlation" (Hey, 1938, p. 75).

Since the aim for number of participants is between 60 and 90, Pearson correlation coefficient should give results that are beneficial for further analysis. Nevertheless, if the pupil sample turns out to be of non-normal distribution, a normality test is conducted.

5.3 Pilot test

Even though I conducted a pilot test, the data gathering process had to be conducted differently. I conducted the pilot test before the Covid-19 pandemic, meaning I was present in the classroom while the pupils answered the test survey. The pilot test did, however, turn out to be very rewarding based on the feedback I got when everyone was finished. They did not have any implications for part one or three. For part two, on the other hand, I received several interesting suggestions for what I could present differently and media sources that were not included. Firstly, it was suggested that I should include comics and "manga" (Japanese comics translated to English) for the reading question – initially I had only written "English books". Secondly, the pupils helped me to choose what game genres I should include in the questionnaire. They felt it lacked a few, and even helped me list several games within the genre. Thirdly, they wanted to have TikTok as an exclusive question in the website part. Before this suggestion was made, I had listed TikTok as "other websites". The pupils also made me realise that I did not actually need to include other websites than the groups that were present in the first place. The Norwegian equivalent of eBay, Finn, was suggested, but I did not include buy, sell and trade sites (Finn, eBay, Wish etc.) because of the high possibility of bad English on those websites. Additionally, the user must be of 18 years old to use these websites.

5.4 Participants

As I mentioned at the very beginning of this chapter, my goal was to gather data from pupils in all grades of lower secondary school. The motivation behind this was Andersen's (2017) suggestion; that we might see a clearer correlation between English proficiency and media habits in this age group.

Before the pandemic, I reached out to teachers who taught the classes eighth, ninth and tenth grade. After the schools began to open, the teachers and I started to discuss how we should conduct the data gathering. I told them how the pilot test underwent and proposed that the pupils should sit the opposite way at their desk, with their computer screen facing the teacher if he or she was the only class leader present. Thereupon, I wanted the teachers to inform their pupils that the survey was not graded work, but they should take this seriously and do their best.

65 participants answered the questionnaire, with 18 pupils from eight grade, 20 from ninth grade and 27 from tenth grade. Figure 3 presents the gender distribution within each grade.

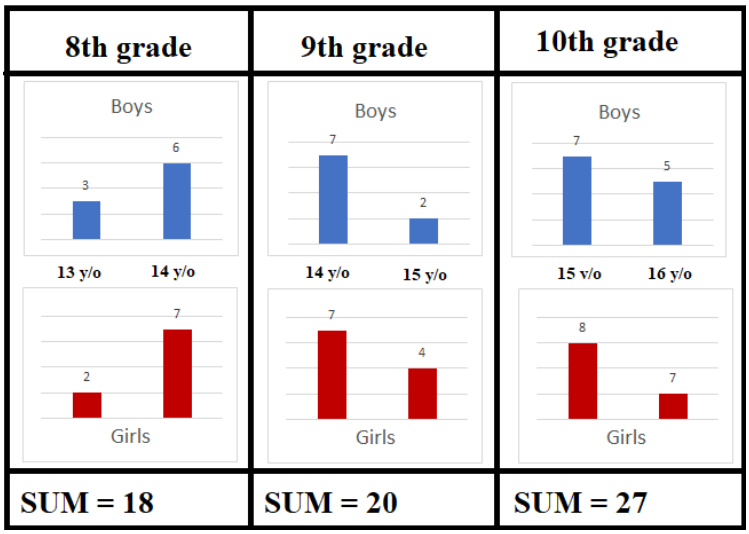

Figure 2: Overview of age and gender in the classes participating in the survey

9 boys and 9 girls in eighth grade, 9 boys and 11 girls in ninth grade and 13 boys and 15 girls in tenth grade. 5 bilinguals participated in the survey, 3 girls from ninth grade and 2 boys from tenth grade. All 5 answers qualified as valid, since they learned English as a main target L2 at school.

6 Data Analysis and Results

This chapter presents what I uncovered by examining the data from the 65 participants who answered the survey. The survey consisted of three parts, the first part intended to gather background information about the participants, the second part to gather data about their media habits, and the third part to determine the participants' English proficiency levels through the OPT. The first part of the chapter will focus on descriptive statistics. The next part presents results from the inferential statistics. Fours tests were conducted: the *Shaprio-Wilk test* to examine normality, correlation coefficients *Pearson's r* (PCC) and *Spearman's rho* (SCC), and a *t*-test to compare two groups.

The statistics are used with the purpose of answering the research questions of this thesis:

> **RQ1**: Are there significant interactions between the participants' English proficiency levels and the extent and characteristics of their English language media habits?
>
> **RQ2**: Which English extramural activities are most significant for the participants' English language proficiency?

This will be done by testing the following hypothesis

> **H1**: There will be a positive correlation between the participants' English proficiency and the extent and characteristics of their English language media habits.
>
> **H2**: Participants who engage in productive and active English extramural activities is expected to have a higher English proficiency than those who do not.

6.1 Descriptive statistics

Descriptive statistics is used to describe tendencies in the dataset, and "to summarize sets of numerical data in order to conserve time and space" (Dörnyei, 2007, p. 209). Initially for this thesis, the descriptive statistics will present results from the Oxford Proficiency Test by using measures of central tendency and measures of variability. This includes mean (average of all scores) and range (minimum and maximum values) as measures of central tendency, and the standard deviation as a measure for variability. The standard deviation is an indication of the "average distance of the scores from the mean" (Dörnyei, 2007, p. 214). The skewness tells us whether the data is normally distributed. The Shaprio-Wilk test will assist to declare if my sample meets the assumption of normality. The test results in a W-value between zero and one. Values that are above '> .5' signifies normality, and if values are below the *null hypothesis* '< .05', it means that normality is rejected (Razali & Wah, 2011, p. 25).

As the aim of the thesis is to investigate if there are significant correlations between the participants' English proficiency and the extent and characteristics of their media habits and EE activities, a statistical test that evaluates the linear relationship between pairs of variables is used. The results from the OPT forms the principal ratio variable for this study. The other variables are constructed from the data concerning the pupils' media habits and EE activities, and is then handled as interval data ('I do not play = 0', '<1 hour = 1', etc.).

6.1.1 Data from the Oxford Proficiency Test

In order to assess data on the participants' English language proficiency, the OPT was administered as part of the questionnaire. The descriptive statistics of the OPT results are shown in Table 1. Pupils across all year levels answered the survey (N = 65), and the mean score was 29.88 (SD = 5.41; SE = .672). The median was 31, minimum score was 15 and maximum score was 38 (range = 23).

Table 1: Descriptive statistics of the OPT results

N	Valid	65
	Missing	0
Mean		29.88
Std. Error of Mean		.672
Median		31.00
Std. Deviation		5.416
Skewness		-.723
Std. Error of Skewness		.297
Kurtosis		.031
Std. Error of Kurtosis		.586
Range		23
Minimum		15
Maximum		38

The dataset had skewness -.723 and kurtosis 0.031. Shown in Figure 3, we can see the distribution curve on the moderately negative skewed data.

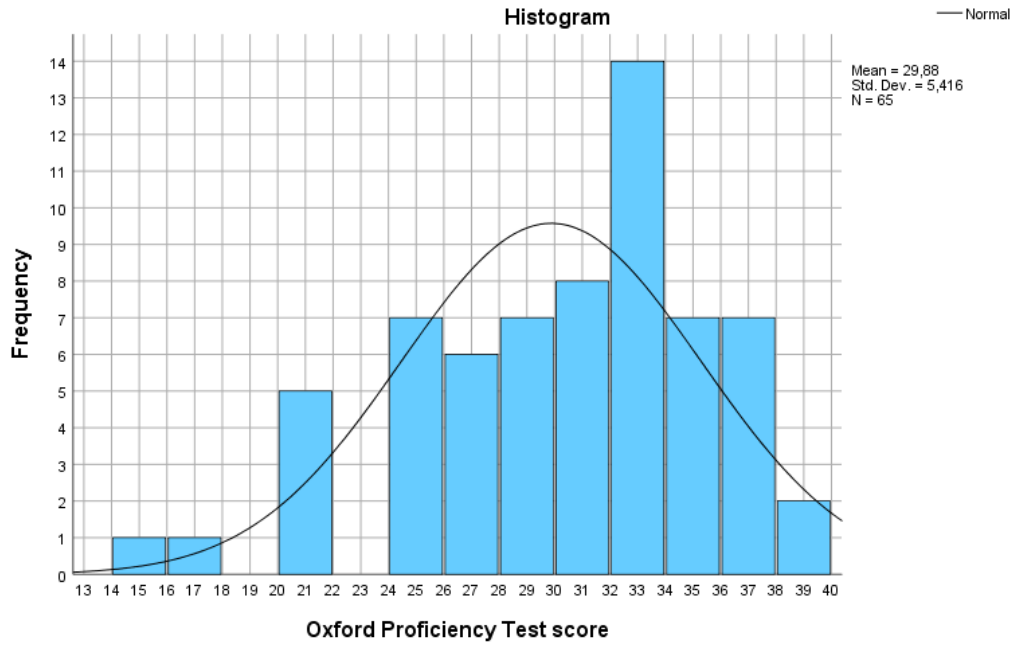

Figure 3. Histogram presenting skewed data distribution from results of the OPT

The skewness implies that the sample has a non-normal distribution. The Shaprio-Wilk test is thus conducted in the inferential statistics section.

6.1.2 Data from media habits and extramural English activities

When the pupils answered the survey, they were asked how often they listen to English music/podcast, read English books/comics, watch English movies/TV-series and play video games per week. They were also asked how long they are exposed to the various EE activities each time, likewise to specific website. Table 2, 3 and 4 show the pupils' answers (N = 65) in percentage horizontally. Table 5, with the percentage vertically, shows what the pupils answered when asked about their subtitle preferences. It also shows the percentage for in-game communication.

Table 2. Percentage frequency of weekly EE activities

***N* = 65**	**0**	**1-2**	**3-6**	**Daily**
Listen to English music	1.5%	6.2%	9.2%	83.1%
Reading in English	56.9%	23.1%	6.2%	13.8%
English movies/TV-series	4.6%	15.4%	20%	60%
Playing video games	27.7%	15.4%	7.7%	49.2%

Table 3. Percentage frequency of average hours for EE activities each time

***N* = 65**	**0**	**< 1h**	**1-2h**	**2-4h**	**> 4h**	**4-6h**	**> 6h**
Listen to English music	1.5%	23.1%	29.2%	30.8%	15.4%	-	-
Reading in English	56.9%	13.8%	21.5%	1.5%	6.2%	-	-
English movies/TV-series	4.6%	13.8%	27.7%	40%	13.8%	-	-
Playing video games	27.7%	6.2%	20%	16.9%	-	15.4%	13.8%

Table 4. Percentage frequency of average hours for EE media exposure each time

***N* = 65**	**0-1h**	**2-3h**	**> 4h**
SoMe platforms	49.2%	36.9%	13.8%
Direct-Messaging	47.7%	29.2%	23.1%
Streaming	9.2%	56.9%	33.8%
Forums	84.6%	13.8%	1.5%
TikTok	49.2%	35.4%	15.4%
Other	61.5%	26.2%	12.3%

Table 5. Percentage frequency of preferred subtitles and in-game communication

***N* = 65**	**Subtitles**	***N* = 65**	**In-game communication**
Does not watch	4.6%	Does not play	27.7%
Norwegian subtitles	32.3%	Norwegian	21.5%
English subtitles	33.8%	English	16.9%
Without subtitles	29.2%	English & Norwegian	21.5%
		No communication	12.3%

Table 2 reveals that the most common EE activity is listening to music or podcast, with 83.1% of the pupils being daily listeners and 1.5% not listening. Watching English movies and TV-series is also a common EE activity, whereas 60% of the pupils watch daily. Through **H2**, I predicted reading books and gaming as the most important EE activities for L2 learning. 56.9%

of the pupils do not read, while 23.1% report that they read 1-2 times weekly. Table 3 shows that 6.2% read more than 4 hours each time. However, most readers reported less than 2 hours (13.8% + 21.5%).

Nearly half the sample group reported to be daily gamers (49.2%). 27.7% does not play video games, and for this group; those who do not play video games nor read books are expected to underperform on the OPT. This too is examined with the help of inferential statistics.

To investigate the oral production element in gaming, data presented in Table 5 forms variables to evaluate their relationship with the OPT variable. The Table also shows the pupils' subtitle preferences. By comparing results from Table 2, 3 and 5, the data on those who do not engage in the EE activities reflects each other, gives us an indication of consistent answers (movies/TV-series 4.6%; gaming 27.7%).

6.2 Inferential statistics

In this section, the aims of the thesis and its research questions will be discussed using the findings from the inferential statistics. The first aim is to investigate if there are significant interactions between the participants' English proficiency and the extent and characteristics of the extramural English they are exposed to from media and activities. The second aim of the study is to analyse the effects of various types of extramural English input and distinguish if some have more impact on pupils' language acquisition than others. These aims are explored through **RQ1**[1] and **RQ2**[2] by testing **H1**[3] and **H2**[4].

[1] Are there significant interactions between the participants English proficiency levels and the extent and characteristics of their English language media habits?

[2] Which English extramural activities are most significant for the participants' English language proficiency?

[3] There will be a positive correlation between the participants' English proficiency and the extent and characteristics of their English language media habits.

[4] Participants who engage in productive and active English extramural activities is expected to have a higher English proficiency than those who do not.

6.2.1 Justifying the statistical tests

The initial approach for investigating **RQ1** and **RQ2** with the support of inferential statistics, is to measure the relationship between the OPT variable and each of the EE variables. This will be conducted with PCC, SCC and a *t*-test. The Shaprio-Wilk test had to be tested first, due to the skewness (-.723) in the OPT sample.
To test the null hypothesis in the OPT variable, the Shaprio-Wilk test was conducted. Table 6 presents the result from the test.

Table 6. Test of Normality on the OPT results

	Shapiro-Wilk		
	Statistic	df	Sig.
Oxford Proficiency Test score	0,946	65	0,007

The result suggests that normality for the dataset was rejected, since the *p* value was '.007'. It also tells us that the null hypothesis is rejected, and that the *p* value is statistically significant. When data is highly skewed, Dancey and Reidy (2017, p. 228) recommends using a non-parametric test. The reason for this is that these tests do not make assumptions about normality. In comparison, Dörnyei (2017) claims that parametric tests, which make assumptions about normal distribution, have additional procedures for statistics, as they can use more information. Mentioned earlier, Pearson (1929) and Hey (1938) states that non-normality samples can be used with normal theory (5.2).

Although having a dependent variable consisting of moderately skewed data, tests and scattergrams allow us to inspect the linear associations between the variables. A PCC test is operated to secure material on the degree of linear correlation between these variables. This generates the correlation coefficient *r* with *p* value.

To examine correlations between the OPT and the subtitle variable, the Spearman correlation coefficient (SCC) will be utilised instead of PCC. The SCC is a non-parametric measure that determines the direction and strength of the monotonic relationship between two variables. Also

known as the Spearman rank correlation coefficient (r_s), the correlation is computed from the ranks of the data in a ranking order, instead from the actual values (Dörnyei, 2007, p. 230). Correlations calculated from ranks seem more beneficial for the variables from preferred subtitle- and in-game communication data.

To further investigate the effect that EE activities have on L2 learners' proficiency, I will classify the participants based on their gender and on how they prefer to interact with EE. In addition to study how the groups correlate with the OPT variable, an independent samples t-test will be conducted. A t-test is used to discover if there is a significant distinction between the means of two groups (Dörnyei, 2017, p. 215). The test results in a *t* value and a *p* value. In an independent t-test, the null hypothesis assumes that the means are equal. The *t* represents how it is that the distinction between groups is not a result of sampling error (Dancey and Reidy, 2017, p. 225). The *p* is the probability of whether or not the *t* increased by sampling alteration, or error.

When significant correlations are presented in tables, they are normally marked with asterisks, (*) when $p < .05$, (**) when $p < .01$, and (***) when $p < .001$ (Sundqvist, 2009, p. 112). Dancey and Reidy (2017) list interpretations of strength or weakness for correlation coefficients, for example +.01 to +.03 as weak, +.04 to +.06 as moderate. I will use these markers and scale levels when presenting my findings.

6.2.2 Findings from Pearson's correlation coefficient

Two correlation tables were assembled to analyse the effects that the extent of exposure EE media and activities have on pupils' English language proficiency. Table 7 presents correlations for weekly frequency variables and Table 8 presents correlations for the variables concerning average hours. All correlations were measured with the OPT variable.

Table 7. Summary of correlations (PCC) between EE activities, weekly frequency, and OPT scores

***N* = 65**	**Pearson Correlation**	**Sig. (2-tailed)**
Listen to English music	-.08	.54
Reading in English	.37**	.008
English movies/TV-series	.27*	.03
Playing video games	.20	.11

***$p < .001$ **$p < .01$ *$p < .05$

Table 8. Summary of correlations (PCC) between average hours exposed to EE media, EE activities and OPT score

***N* = 65**	**Pearson Correlation**	**Sig. (2-tailed)**
Listen to English music	.06	.64
Reading in English	.31*	.01
English movies/TV-series	.33**	.007
Playing video games	.27*	.03
SoMe platforms	-.28*	.03
Direct-Messaging	-.23	.06
Streaming	.14	.26
Forums	.30*	.02
TikTok	-.37**	.002
Other	-.02	.87

***$p < .001$ **$p < .01$ *$p < .05$

In Table 7 and Table 8, two weak positive correlations between the reading variables and the OPT are found, $r = .37$, $p = .008$ (weekly) and $r = .31$, $p = .01$ (average hours). Both correlations are significant. Another significant correlation among the weekly variables and the OPT, is found for EE activity watching English movies and TV-series, $r = .27$, $p = .03$, making it weak positive; the average hours variable is also significant, with a weak positive correlation, $r = .33$, $p = .007$. The weekly gaming variable was found to be weak positive correlated, and not significant, $r = .20$, $p = .11$. However, the variable for average hours gaming has statistical significance, and shared a weak positive correlation with the OPT variable, $r = .27$, $p = .03$. Weekly listening to music was found to correlate negative, $r = -.08$, $p = .54$.

Table 8 shows 3 variables that correlate negatively with the OPT variable, 2 are significant (TikTok r = -.37, p = .002, SoMe r = -.28, p = .03, Direct-Messaging r = -.23, p = .06.). To inspect TikTok's negative correlation closer, a scattergram is presented in Figure 4 to illustrate the linearity.

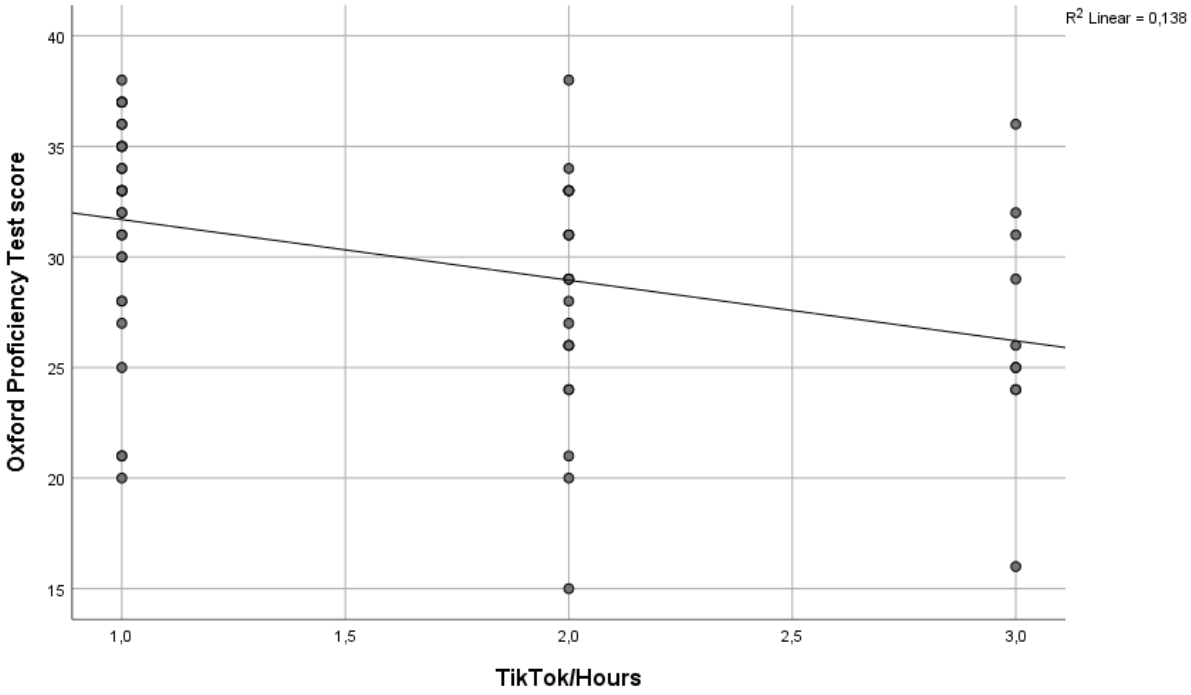

Figure 4: Scattergram showings linearity between participants' OPT scores and TikTok hours

The strongest positive correlation found among the EE media variables is Forums, r = .30, p = .02. The relationship between the OPT variable and the variable that stems from 'Other' websites has correlation values r = -.02, p = .87. According to Dancey and Reidy (2017), such correlations are considered *zero*.

6.2.3 Findings from Spearman's rho and T-Test

As seen in Table 9, there was found a moderately positive correlation between the subtitles variable and the OPT variable, $r_s = .43$, $p < .001$. The low p value suggests there is a significant relationship between subtitle of choice and English language proficiency. There is strong evidence of rejecting the null hypothesis.

Table 9. Subtitle preference count and correlations (SCC) between subtitle variable and OPT score variable

Subtitle preference	*N*	Percent
Does not watch	3	4.6%
Norweian subtitles	21	32.3%
English Subtitles	22	33.8%
w/o subtitles	19	29.2%
Total	65	100 %
Spearman's rho		
***N* = 65**	**Correlation Coefficient**	**Sig. (2-tailed)**
Subtitle preferences	.43***	.0003

***$p < .001$ **$p < .01$ *$p < .05$

The relationship between the OPT variable and the 4 categories within the subtitle variable can be visualized in a boxplot in Figure 5.

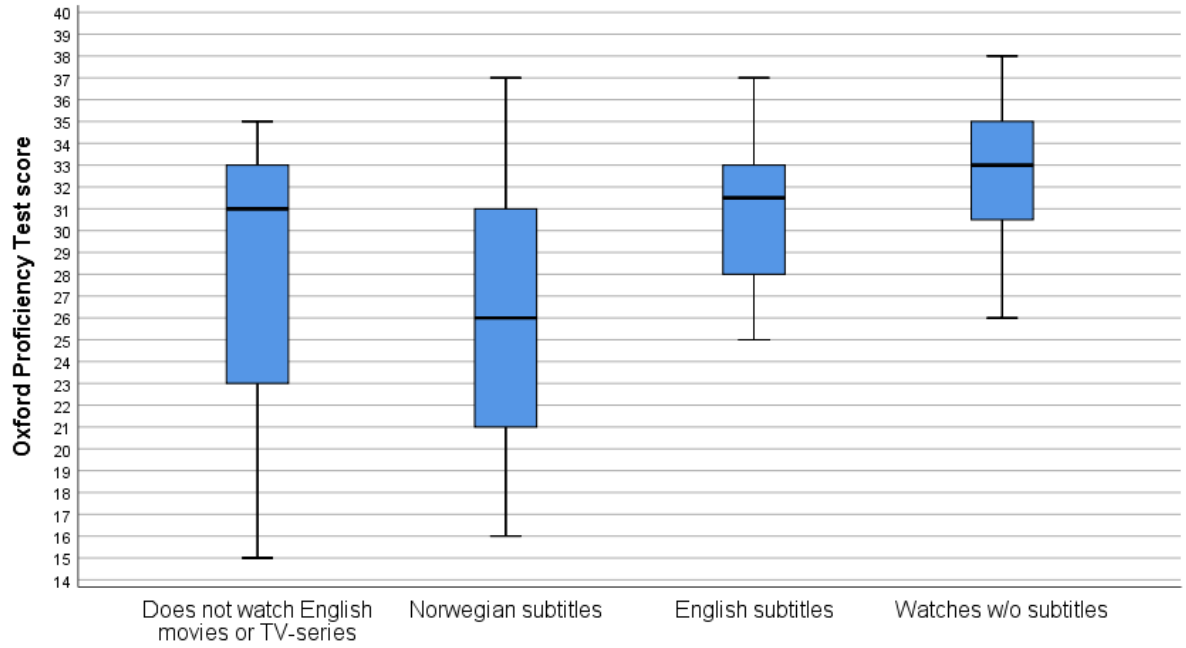

Figure 5: Boxplot illustrating the pupils' OPT scores and subtitle preferences

Shown in Table 9, the category that represents those who do not watch English movies or TV-series only consists of 3 pupils.

The biggest difference found between boys' (N = 30) and girls' (N = 35) interaction with EE activities, involves playing video games. While all boys report to be daily gamers, only 2 girls report this weekly frequency. In total, 17 girls play video games, and 10 of them only play 1-2 times per week. The count of the participants' weekly gaming frequency can be seen in Figure 6.

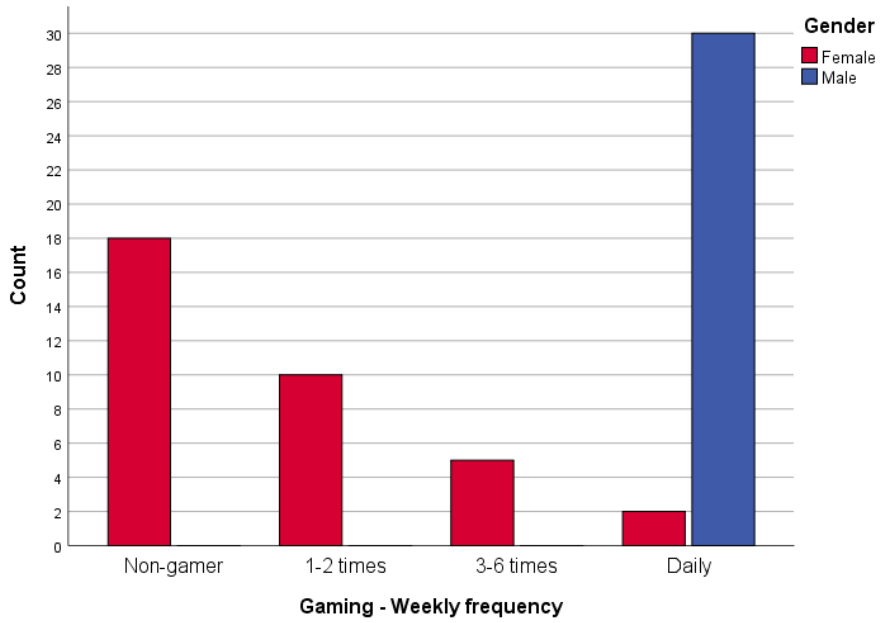

Figure 6: Bar graphs presenting the participants' weekly gaming frequency

To further investigate **RQ2** with **H2**, I had to judge whether my prediction on reading and gaming to be the superior EE activities for L2 proficiency is of substance. Whereas all boys (*N* = 30) reported to be daily gamers, they are excluded from the next 2 tests. A sample consisting of 35 girls is used in the tests.

Spearman's rho was the first. As the sample size (*N* = 35) was labelled into ordered classes ('Non-gamer & non-reader' *N* = 11, 'Gamer' *N* = 9, 'Gamer & reader' *N* = 8, 'Reader' *N* = 7), rank correlation seemed appropriate. The test's results are shown in Table 9. A moderate positive correlation was found between the labelled variables and the OPT variable, r_s = .54, *p* < .001.

Table 10. Correlations (SCC) between girls' EE gaming and reading variable and the OPT variable

Spearman's rho		
***N* = 35**	**Correlation Coefficient**	**Sig. (2-tailed)**
Gaming & reading	.54**	.001

***p < .001 **p < .01 *p < .05

To conduct the Independent Samples *t*-test, the sample had to be relabelled into 2 groups. Because of **H2**, 'Non-gamer & non-reader' ($N = 11$) remained from the previous test. The other group was labelled 'Gamer, reader or both' ($N = 24$). Table 11 presents the results that reflects onto my predictions, as a significant difference was found between the groups. The 11 girls representing 'Non-gamer & non-reader' had a mean score of 25.54 ($SD = 5.92$, $SE = 1.78$) compared to the other group's ($N = 24$) mean score of 30.79 ($SD = 4.60$, $SE = .94$), $t = 2.86$, $p = .007$, $df = 33$. The null hypothesis' assumption of equal means is rejected. However, since the samples have unequal variances, the result from Welsh's *t*-test is more reliable: $t = 2.60$, $p = .02$, $df = 15.79$ (Ruxton, 2006, p. 689). This also shows statistically significance, but the degrees of freedom are nearly half of the other *t*-test. Accordingly, the most reliable number of logically independent values is represented by the latter *t*-test, but only if we ignore that fact that the dataset's normality was rejected (Ruxton, 2006, p. 689)..

Table 11. Independent Samples T-Test on female (non-)gamers and (non-)readers

Group Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Gamer, reader or both	24	30.79	4.61	0.94
Non-gamer & non-reader	11	25.55	5.92	1.79

Independent Samples Test

	t	*df*	Sig. (2-tailed)
Equal variances assumed	2.86	33	.007
Equal variances not assumed	2.60	15.79	.02

Knowing that all boys ($N = 30$) are daily gamers, a correlation test was conducted to investigate is there was a positive correlation between their OPT scores and preferred in-game type of communication. Table 11 presents descriptive statistics about the in-game communication variable and the results from Spearman's rho.

Table 12. Descriptive statistics and correlations (SCC) between male in-game communication and the OPT variable

In-game communication	*N*	Mean	Std. Deviation
No communication	1	33,00	
Norwegian	10	27,80	6,61
English	7	31,57	4,08
Both English and Norwegian	12	32,50	3,85
Total	30	30,73	5,22

Spearman's rho		
***N* = 30**	**Correlation Coefficient**	**Sig. (2-tailed)**
In-game communication	.32	.086

***$p < .001$ **$p < .01$ *$p < .05$

One boy does not communicate while he plays video games. His score from the OPT was 33/40, thus above the mean score for all participants in the survey ($N = 65$, mean = 29.88). Those who communicate in Norwegian have the lowest mean score, at 27.80 ($N = 10$, $SD = 6.61$). The boys who communicate in English has mean score 31.57 ($N = 7$, $SD = 4.08$), the those who use both languages have the highest mean score, namely 32.50 ($N = 12$, $SD = 3.85$). A weak positive correlation was found, $r_s = .32$, $p < .086$.

7 Discussion

This chapter discusses the findings and results that was presented in the previous chapter (6) in relation to the thesis' aim. The first aim is to investigate if out-of-school L2 input sources can facilitate the English proficiency levels of Norwegian L1 lower secondary school pupils. By distinguishing the extent and characteristics of various input types, we get closer in recognising their effects on pupils' English SLA. The out-of-school L2 input sources have been depicted as extramural English (Sundqvist, 2009, p. 25), a concept that has been used consistently throughout the entirety of this thesis. The second aim has been to determine if certain EE media or EE activities are more efficient than others. The findings are discussed in light of the theoretical framework (Chapter 2) that was implemented to support results in relation to the thesis' aims. Methodological errors or limitations are aspects that must be addressed in order

to conclude. Discussions start by investigating thesis' aim that was formulated into **RQ1**[5] and **RQ2**[6]. **H1**[7] and **H2**[8] were then tested accordingly.

7.1 The extent of exposure from EE media habits and activities

An aspect presented in the introduction was that English has manifested itself as a high-status language in the Norwegian society. Norwegian youths are exposed to English from sources that provide authentic language. When they engage in daily activities, such as playing video games, watching movies or TV-programmes, listening to music, reading books, texts and articles on the Internet, extramural English is exposed to them. However, the EE sources' purpose is not to learn the recipients the language. Accordingly, L2 learning relies upon how and to what extent the activities and the exposure from the media are used to benefit from them. Initially, it is crucial that the exposed language input is comprehensible (Krashen, 1981). To further develop their L2, an efficient procedure is through interaction with others, whether it is other L2 learners or native speakers, by target-language production (Swain, 1985, p. 249).

By using inferential statistics, the data analysis revealed that both the extent and the characteristics of certain EE activities and EE exposure from media interact significantly with English language proficiency. Both variables for English music turned out to be what, according to Dancey and Reidy (2017), is considered to be correlations of *zero*. Listening to music is an EE activity where the learner is passive/receptive, and the results from the analysis reflects on my prediction and on prior studies (Sundqvist, 2009; De Wilde, Brysbaert & Eyckmans, 2020), as it is less effective for L2 learning. The same studies also suggest watching English movies and TV-series to be a less effective EE activity. In comparison, when I measured the movie/TV-

[5] Are there significant interactions between the participants English proficiency levels and the extent and characteristics of their English language media habits?

[6] Which English extramural activities are most significant for the participants' English language proficiency?

[7] There will be a positive correlation between the extent of the participants' English language media habits and their English proficiency.

[8] Participants who engage in productive and active English extramural activities is expected to have a higher English proficiency than those who do not.

series variables, significant correlations were found, suggesting that the extent of this activity can affect L2 learning. Similar positive correlations were found for reading books, one of the activities I predicted to be most beneficial for language learning. De Wilde, Brysbaert and Eyckmans (2020) found reading books as less effective and emphasised the passive perception aspect of the activity to be decisive. Their sample consisted of children aged 10-12-years, making it possible to assume that reading is more beneficial for older children. My findings indicate that reading books has considerable effects for L2 learning, as the variable possesses the strongest correlation compared to the other weekly variables.

Two negative correlations for applications and websites was found, both were statistically significant. The first was for social media platforms, where I listed Facebook, Instagram and Twitter as examples in the questionnaire. The strongest negative correlation was for the participants who frequently uses TikTok. Being statistically significant, the linear relationship between the TikTok variable and the OPT scores variable was visualised in a scattergram in Figure 4. I have never used the application, but based on my findings, I suggest that it is not an effective EE source for developing English language proficiency. Both findings imply this trend.

The other EE activity I predicted to affect pupils' English proficiency was the extent of playing video games. Both variables correlated positively, but the correlation for weekly frequency was not of significance. However, the average hours variable shared a significant correlation with the OPT score variable. Figure 6 revealed that all participating boys were daily gamers. Findings from Table 4, which shows the data that formed the average hours variable for the activity, reveals that 13.8% of all participants play video games for 6 hours or more, each time they play. The two findings considered, suggests that boys who are frequent gamers have a high English proficiency. Several studies have shown that those who play frequently outperform moderate gamer and non-gamers on formal L2 assessments and generally have a richer English vocabulary (Jensen, 2017; Sylvén & Sundqvist, 2012; Sundqvist & Wikström, 2014). I must be considered that Jensen's study (2017) was on younger learners' (8-10-years-old), but that makes for an even stronger assumption: since some boys start early playing video games, they will possibly challenge themselves regularly with newer games. Based on this assumption, over a period of many years, those boys will be exposed to a variety of EE input from video games.

As my findings revealed that all participating boys are gamers, there is a possibility that many of them started early too. The immersion and flow that gamers experience in-game can be connected towards Wang, Petrina and Feng's (2017) understanding, that "the degree of immersion have been shown to improve learners' ability to increase their English vocabulary" (p. 146). There are indeed valuable opportunities for intake when playing video games, which affects the learner's vocabulary.

7.2 Characteristics of EE activities

Admittedly, the most decisive argument to why I see playing video games to be the superior EE activity for inducing English proficiency, is the convenience it provides for learner's output. Most popular video games are multiplayer games played online, implemented with an interface that let players write to others for written output or speak to others for oral output, with, considering they have a microphone. Long (1981) sees interplay as important for language growth: as the players are exposed to target language input, they may also receive feedback on their own production.

In competitive gaming, or *eSports*, international line-ups have dominated both regionally and internationally. *Team Liquid* has an international LoL line-up consisting of two Koreans, two Americans and a Dane. An example of a CS team that has an international line-up is *FaZe*, with a Norwegian, a Dane, a Brazilian, a Bosnian and a Latvian. The language barrier is a linguistic obstacle they must overcome to be able to reach their mutual goal. Knowing that boys generally spend much time playing video games – in my case, every day – made me investigate the oral productive characteristic that online gaming has. My assertion is that those who use both languages and exclusively use L2 when they play video games, will have a higher English proficiency than those who exclusively use their L1. Despite not being statistically significant, there was found a positive correlation between the OPT results and the preferred types of communication in-game. This is supported by their mean score seen in Table 12.

As mentioned, variables on the extent of watching English movies and TV-series had positive correlation with the OPT variable, both significant. With the data from the questionnaire, I was

able to investigate an interesting characteristic for this EE activity, namely the use of subtitles. Several studies have shown that learners may benefit from movies with subtitles and from movies who do not have subtitles (Yuksel, 2009; Huang & Eskey, 2000; Markham, 1999). Based on the results of these studies, the positives of watching a movie with L2 subtitles are development of word recognition skills and comprehension skills. When watching movies without subtitles, listening skills are developed. My analysis on subtitle preferences resulted in a significant correlation. With the use of Spearman's ranking correlation, findings suggest that using L2 subtitles or not using subtitles is beneficial for L2 development. Findings were also illustrated graphically in a boxplot by Figure 5 (6.2.3).

Important characteristics of reading and gaming is that the learner can opt to be productive while engaging them (Sundqvist, 2009b). To further test **H2**[9], I investigated the girls (N = 35) EE activities. The variable I used was established on my assortation that participants who engage in active EE activities have a higher English proficiency than those who do not. I sorted the girls in four classes[10] and conducted a Spearman's rho ranking correlation. A significant correlation was indeed found. In terms of strength, this was turned out to be the strongest out of all variables tested, including the findings from the PCC. For the independent samples *t*-test, I compared the 'Non-gamer & non-reader' class (N = 11) to the rest of the girls (N = 24). Welsh's *t*-test revealed resembling results. Yet, both results are of low relevance with the normality of the dataset being rejected.

7.3 Methodological limitations and weaknesses

This study is based on quantitative data, as a total of 65 lower secondary school pupils from a 8th grade, a 9th grade and a 10th grade took part in an online survey. It was answered in the classroom with their teacher present. Because of the pandemic caused by Covid-19 I could not be present in the classroom when they answered the questionnaire.

[9] Participants who engage in productive and active English extramural activities is expected to have a higher English proficiency than those who do not.

[10] 'Non-gamer & non-reader', 'Gamer', 'Gamer & reader', 'Reader'

While my method of conducting a questionnaire to secure quantitative answers is good in the sense that it results in descriptive data, it also has its limitations. Firstly, the method can lead to a focus on numbers that is close to superficial, as it will prone the researcher from seeing links and elements that are more important for the study's aim. Secondly, the data from the part 2 in the questionnaire (5.1) can be highly misleading or fictional for participants. The questions about web pages in particular: the participants only had the options to choose between '0-1 hours', '2-3 hours' and '4 hours or more' (Appendix 1). This means that I must consider that some participants, who chose the first option, do not use the media at all. Since participating in the survey was voluntary and anonymous, along with their awareness that the work would not be graded, some pupils might have felt uninspired about the situation.

With a sample size of 65 participants, a quantitative research method should be sufficient. Yet, in some tests (6.2.3), the gender distinction turned the sample sizes to 30 (boys) + 35 (girls). If the total sample size was greater – in the range of perhaps 120-200 participants – it would sustain the validity of my findings. To secure more reliant data, a combination between approaches of collecting quantitative data (online survey) and qualitative (logs and interviews) could have been an option. On the other hand, an approach like that would limit the number of participants drastically.

A feature in my questionnaire of what I could have attempted to gather qualitative data, was for what game genre or video game the participants play most frequent. If so, I could possibly verify my prediction about competitiveness and oral production. Yet, it is no certainty that I would be able to determine a sustainable result (Sundqvist, 2019).

Another missing aspect from the correlations discovered through data analysis, is that it does not imply cause. While I found positive correlations between results from the Oxford Proficiency Test scores and the extent of playing video games frequently (6.2.2), Brevik, Olsen & Hellekjær (2016) found that playing video games made students perform worse in all subjects except English, which remained unchanged. However, their finds have been criticised, as Mellingsæter (2016) points out that the sample size of the five male students who were interviewed is too small for evidence.

7.4 Summary and suggestion for future studies

This thesis investigated if there were significant interactions between Norwegian L1 lower secondary school pupils' English proficiency and the extent and characteristics of English language exposure from their media habits and EE activities. This was explored through **RQ1**[11] and **RQ2**[12]. To conclude, my main findings from testing **H1**[13] and **H2**[14] are summarised below:

- When investigating the extent of the participants' media habits and EE activities, I made several observations by examining the descriptive statistics. Listening to English music is the most common EE activity. However, statistical tests found no correlation between those variables and the pupils' English proficiency. Another common EE activity for all pupils' is watching English movies and TV-series. The results suggest that pupils who frequently watches English movies and TV-series have a high English proficiency, as significant positive correlations were found between its variables and the OPT variable. Gaming was also shown to be a common EE activity, particularly for the boys, as all were daily gamers. In contrast, only two girls reported to be daily gamers. The gaming variables shared positive correlations with the OPT variable, one was statistically significant.
- The strongest correlations were found when I scrutinised the characteristics of certain EE activities. My findings indicate that Norwegian youths who use English subtitles, or simply watches English movies or TV-series without subtitles have a higher English proficiency. Based on my findings, youths generally spend much time on this activity. A suggestion for those who currently use Norwegian subtitles is to transition into using English subtitles instead, as this can induce their English language proficiency.

[11] Are there significant interactions between the participants English proficiency levels and the extent and characteristics of their English language media habits?

[12] Which English extramural activities are most significant for the participants' English language proficiency?

[13] There will be a positive correlation between the extent of the participants' English language media habits and their English proficiency.

[14] Participants who engage in productive and active English extramural activities is expected to have a higher English proficiency than those who do not.

Watching without subtitles can increase listening comprehension skills, and watching with English subtitles can increase word recognition skills.

- A characteristic of gaming is in-game communication. My results found a positive correlation between type of communication and the OPT scores. The boys who reported speaking English *and* Norwegian in-game had a much higher mean score than the boys who reported speaking exclusively Norwegian. Sundqvist (2009b) found gaming to be an effective on the learners' L2 learning, as the activity required them to be active and productive. Singleplayer games can provide valuable input, but multiplayer games offer players to interact with others. When the players use their L2 to produce output, online gaming provides something which is considered crucial in SLA (Swain, 1985).
- The strongest correlation was found when I investigated the girls' engagement in the EE activities that I predicted to be most important for reaching a high English proficiency, namely gaming and reading books. I sorted the girls based on their EE activities[15] to form a variable I could use together with the OPT variable in a Spearman rank correlation. The test found a positive correlation, statistically significant[16]. My results indicate that girls who engage in active EE activities have a higher English proficient than those who do not. Sundqvist (2009a) acknowledges these activities to be effective because the learners need to rely on their language abilities, otherwise they would be pointless. In comparison, listening to English is an activity where the learners remain passive; the music can instead be perceived as 'background noise'.

For further studies concerning English extramural activities' effect on SLA, I suggest researching lower secondary pupil. Data from the NMA (2020) shows that when Norwegian children are aged 12-16-years, they start to use a wide range of English language websites/applications, follow more L1 English speaking content creators on YouTube and Twitch, and transition from playing *Minecraft* to games where in-game communication is required. Another important aspect of EE exposure in Norway is related to the distinction

[15] 'Non-gamer & non-reader', 'Gamer', 'Gamer & reader', 'Reader'

[16] $r_s = .54$, $p < .001$.

between boys and girls. Future studies should examine gender more thoroughly, with the aim to determine effects their EE activities and media habits have on SLA.

8 Conclusion

In this thesis, statistical tests were conducted to find significant interactions between the participants' English language proficiency and the extent and characteristics of exposure from their media habits and out-of-school English activities.

The quantitative data used in this study was gathered from three classes of different year levels in Norwegian lower secondary schools. The participants answered a survey consisting three parts. The first part was about the participants' background, the second part was to measure the extent and characteristics of their media habits and EE activities, and the third part was an Oxford Proficiency Test, to measure their English language proficiency.

Significant interactions were found for English out-of-school activities that requires the pupils to use their language, specifically for reading English books, playing video games. Another significant interaction found was found for both the extent and for characteristics concerning watching English movies and TV-series. Correlation tests suggest frequent use of this activity to induce English proficiency. Inspecting this further, subtitle preferences was declared as important.

Methodical weaknesses, such as a non-normal distributed dataset, and a possibly confusing survey design, decreases this study's relevance. Nonetheless, I hope it can contribute to more teachers taking interest in what their pupils do out-of-school, through EE activities. I argue that teachers should consider implementing assignments that let pupils cultivate their interests, in sync with beneficial L2 input.

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Appendix

Appendix 1 – Questionnaire

Spørreundersøkelse om medievaner og engelskferdigheter

Tusen takk for at du tar deg tid til å svare på spørreundersøkelsen. Hensikten med denne spørreundersøkelsen er å måle dine engelskferdigheter opp mot dine medievaner.

Spørreundersøkelsen er helt anonym og kan ikke spores tilbake til deg. Din identitet vil holdes skjult.

https://nsd.no/personvernombud/hjelp/forskningsmetoder/nettbaserte_sporreundersokelser.html

1.1 Kjønn *

Velg ...

1.2 Alder *

Velg ...

1.3 Hvilken karakter i engelsk fikk du på karakterkortet forrige semester? *

Velg ...

1.4 Hvilket språk bruker du hjemme? (Kryss av flere om du bruker mer enn ett) *

- [ ] Norsk
- [ ] Engelsk
- [ ] Annet språk

2.0 Medievaner

I denne delen av spørreundersøkelsen skal du velge hvilke typer medier du bruker i løpet av din hverdag, og hvor mye tid du bruker på dem.

2.1 Hvor ofte hører du på engelsk musikk/podcast? *

- ○ Daglig
- ○ 3-6 ganger i uka
- ○ 1-2 ganger i uka
- ○ Jeg hører ikke på engelsk musikk

2.1.1 I snitt, hvor lenge hører du på engelsk musikk/podcast per dag? *

- ○ Over 4 timer
- ○ 2-4 timer
- ○ 1-2 timer
- ○ Mindre enn 1 time
- ○ Jeg hører ikke på engelsk musikk

2.2 Hvor ofte leser du engelske bøker/tegneserier? *

- ○ Daglig
- ○ 3-6 ganger i uka
- ○ 1-2 ganger i uka
- ○ Jeg leser ikke engelske bøker

2.2.1 I snitt, hvor lenge leser du engelske bøker/tegneserier per dag? *

- ○ Over 4 timer
- ○ 2-4 timer
- ○ 1-2 timer
- ○ Mindre enn 1 time
- ○ Jeg leser ikke engelske bøker/tegneserier

2.3 Hvor ofte ser du på engelskspråklige filmer/TV-serier? *

- ○ Daglig
- ○ 3-6 ganger i uka
- ○ 1-2 ganger i uka
- ○ Jeg ser ikke engelskspråklig film/TV-serie

2.3.1 I snitt, hvor lenge ser du på engelskspråklige filmer/TV-serier per dag? *

- ○ Over 4 timer
- ○ 2-4 timer
- ○ 1-2 timer
- ○ Mindre enn 1 time
- ○ Jeg ser ikke engelskspråklig film/TV-serie

2.3.2 Når jeg ser engelskspråklig film/TV-serie, ser jeg *

- ○ med norsk undertekst
- ○ med engelsk undertekst
- ○ med undertekst på et annet språk enn norsk/engelsk
- ○ uten undertekst
- ○ Jeg ser ikke engelskspråklig film/TV-serie

2.4 Hvor ofte spiller du dataspill? *

- ○ Daglig
- ○ 3-6 ganger i uka
- ○ 1-2 ganger i uka
- ○ Jeg spiller ikke dataspill

2.4.1 I snitt, hvor lenge spiller du dataspill per dag? *

- ○ Over 6 timer
- ○ 4-6 timer
- ○ 2-4 timer
- ○ 1-2 timer
- ○ Mindre enn 1 time
- ○ Jeg spiller ikke dataspill

2.4.2 Hvilken sjanger spiller du mest? (Velg maks 3) *

- [ ] Skytespill (CS:GO, Fortnite, CoD, Battlefield osv.)
- [ ] Rollespill (The Witcher, Skyrim, Zelda, Fallout osv.)
- [ ] Online rollespill (WoW, RuneScape, Final Fantasy XIV osv.)
- [ ] Sandkasse (Minecraft, Eve Online, Garry's Mod osv.)
- [ ] Online kamparena (League of Legends, Dota 2 osv.)
- [ ] Sportsspill (Fifa, Football Manager, NBA, WWE osv.)
- [ ] Slossespill (Super Smash Bros, Street Fighter, Tekken osv.)
- [ ] Annen sjanger
- [ ] Jeg spiller ikke dataspill

2.4.3 Kommuniserer du med andre mens du spiller dataspill? *

- ○ Ja, både på norsk og engelsk
- ○ Ja, hovedsakelig på norsk
- ○ Ja, hovedsakelig på engelsk
- ○ Nei
- ○ Jeg spiller ikke dataspill

Internettsider

I denne delen av spørreundersøkelsen skal du oppgi hvor mye tid du i gjennomsnitt bruker hver dag på diverse nettsider.

2.5 Sosiale nettverk som Facebook, Instagram, Twitter og lignende *

- ○ 0-1 time
- ○ 2-3 timer
- ○ 4 timer eller mer

2.5.1 I hvor stor grad møter du engelskspråklig innhold på disse nettsidene? *

- ○ Sjeldent
- ○ Middels
- ○ Ofte

2.6 Direktemeldingsplatformer som Messenger, Snapchat, Whatsapp, SMS og lignende *

- ○ 0-1 time
- ○ 2-3 timer
- ○ 4 timer eller mer

2.6.1 Kommuniserer du med andre på engelsk via slike platformer? *

- ○ Ja
- ○ Nei

2.7 Strømmesider som YouTube, Twitch, Netflix, Viaplay, Crunchyroll og lignende *

- ○ 0-1 time
- ○ 2-3 timer
- ○ 4 timer eller mer

2.7.1 I hvor stor grad møter du engelskspråklig innhold på disse nettsidene? *

- ○ Sjeldent
- ○ Middels
- ○ Ofte

2.8 Forum som Reddit, Diskusjon.no, 9gag og lignende *

- ○ 0-1 time
- ○ 2-3 timer
- ○ 4 timer eller mer

2.8.1 I hvor stor grad møter du engelskspråklig innhold på disse nettsidene? *

- ○ Sjeldent
- ○ Middels
- ○ Ofte

2.9 Videodelingsider som TikTok og lignende *

- ○ 0-1 time
- ○ 2-3 timer
- ○ 4 timer eller mer

2.9.1 I hvor stor grad møter du engelskspråklig innhold på disse nettsidene? *

- ○ Sjeldent
- ○ Middels
- ○ Ofte

2.10 Ander nettsider hvor innholdet kun er på engelsk *

- ○ 0-1 time
- ○ 2-3 timer
- ○ 4 timer eller mer

3.0 The Standardized English Oxford Proficiency Test

Instructions: Please complete the sentences by selecting the best answer from the available answers below.

Part 1:

1) Water _____ at a temperature of 100° C.

- is to boil
- is boiling
- boils

2) In some countries _____ very hot all the time.

- there is
- is
- it is

3) In cold countries people wear thick clothes _____ warm.

- for keeping
- to keep
- for to keep

4) In England people are always talking about _____.

- a weather
- the weather
- weather

5) In some places _____ almost every day.

- it rains
- there rains
- it raining

6) In deserts there isn't _____ grass.

- the

- some
- any

7) Places near the Equator have _____ weather even in the cold season.
- a warm
- the warm
- warm

8) In England _____ time of year is usually from December to February.
- coldest
- the coldest
- colder

9) _____ people don't know what it's like in other countries.
- **The most**
- **Most of**
- **Most**

10) Very _____ people can travel abroad.

- **less**
- **little**
- **few**

11) Mohammed Ali _____ his first world title fight in 1960.
- **has won**
- **won**
- **is winning**

12) After he _____ an Olympic gold medal, he became a professional boxer.
- **had won**
- **have won**
- **was winning**

13) His religious beliefs _____ change his name when he became a champion.
- **have made him**
- **made him to**
- **made him**

14) If he _____ lost his first fight with Sonny Liston, no one would have been surprised.
- **has**
- **would have**
- **had**

15) He has travelled a lot _____ as a boxer and as a world-famous personality.
- **both**
- **and**
- **or**

16) He is very well known _____ the world.
- **all in**
- **all over**
- **in all**

17) Many people _____ he was the greatest boxer of all time.
- **is believing**
- **are believing**
- **believe**

18) To be the best _____ the world is not easy.
- **from**
- **in**
- **of**

19) Like any top sportsman, Ali _____ train very hard.
- **had to**
- **must**
- **should**

20) Even though he has now lost his title, people _____ always remember him as a champion.
- **would**
- **will**
- **did**

Part 2:

21) The history of _____ is
- **airplane**
- **the airplane**
- **an airplane**

22) _____ short one. For many centuries men
- **quite a**
- **a quite**
- **quite**

23) _____ to fly, but with
- **are trying**
- **try**
- **had tried**

24) _____ success. In the 19th century a few people
- **little**
- **few**
- **a little**

25) succeeded _____ in balloons. But it wasn't until
- **to fly**
- **in flying**
- **into flying**

26) the beginning of _____ century that anybody
- **last**
- **next**
- **that**

27) _____ able to fly in a machine

- **were**
- **is**
- **was**

28) _____ was heavier than air, in other words, in
- **who**
- **which**
- **what**

29) _____ we now call a ‘plane’. The first people to achieve
- **who**
- **which**
- **what**

30) ‘powered flight’ were the Wright brothers. _____ was the machine
- **His**
- **Their**
- **Theirs**

31) which was the forerunner of the Jumbo jets and supersonic airliners that are _____ common

- **such**
- **such a**
- **some**

32) sight today. They _____ hardly have imagined that in 1969,
- **could**
- **should**
- **couldn’t**

33) _____ more than half a century later,
- **not much**
- **not many**
- **no much**

34) a man _____ landed on the moon.
- **will be**
- **had been**
- **would have**

35) Already _____ is taking the first steps towards the stars.
- **a man**
- **man**
- **the man**

36) Although space satellites have existed _____ less
- **since**
- **during**
- **for**

37) than forty years, we are now dependent _____ them for all
- **from**

- **of**
- **on**

38) kinds of _____. Not only
- **informations**
- **information**
- **an information**

39) _____ being used for scientific research in
- **are they**
- **they are**
- **there are**

40) space, but also to see what kind of weather _____.
- **is coming**
- **comes**
- **coming**

Appendix 2 – OPT answer key

1 = boils 2 = it is 3 = to keep 4 = the weather 5 = it rains 6 = any 7 = warm 8 = the coldest 9 = Most 10 = few	11 = won 12 = had won 13 = made him 14 = had 15 = both 16 = all over 17 = believe 18 = in 19 = had to 20 = will	21 = the airplane 22 = quite a 23 = had tried 24 = little 25 = in flying 26 = next 27 = was 28 = which 29 = what 30 = Theirs	31 = such a 32 = could 33 = not much 34 = would have 35 = man 36 = for 37 = on 38 = information 39 = are they 40 = is coming