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Norwegian First-Graders' English Vocabulary Knowledge and Exposure to Extramural English

Master's thesis in English with Teacher Education
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Sammendrag

Denne masteroppgaven beskriver en kvantitativ studie av norske førsteklassingers eksponering for engelskspråklige aktiviteter utenfor klasserommet, og deres engelske ordforråd. Målet med oppgaven er å undersøke hvor mye engelsk norske førsteklassinger møter utenfor klasserommet, og hvordan deltakerne scorer på en ordforrådstest brukt for å måle deres reseptive engelske ordforråd. Studien ble utført på 12 deltakere i første klasse på en norsk barneskole. Studien ble gjennomført som et kvasieksperiment, hvor deltakernes foreldre ble spurt om å svare på en spørreundersøkelse om barnets eksponering for engelskspråklige aktiviteter utenfor klasserommet. I tillegg gjennomførte deltakerne Peabody Picture Vocabulary Test (PPVT-4) for å måle deres reseptive engelske ordforråd. Dataen fra spørreundersøkelsen og testen ble analysert ved å bruke deskriptiv statistikk, grafiske fremstillinger og korrelasjonsanalyse. Studien viste at deltakerne i gjennomsnitt ble eksponert for rundt syv timer og femten minutter med engelskspråklige aktivtiter i uken. Resultatene fra analysen viser også at de fikk mest eksponering gjennom YouTube, etterfulgt av musikk, TV og digitale spill. Videre vise resultatene at deltakernes score på ordforrådstesten kunne sammenlignes med ordforrådet til en engelskspråklig treåring, og at disse resultatene var noe høyere enn det Dahl & Vulchanova (2014) fant i deres sammenlignbare studie for rundt et tiår siden. Avslutningsvis viste resultatene ingen signifikant korrelasjon mellom eksponering for engelskspråklige aktiviteter utenfor klasserommet og ordforråd. Tendensene viste dog at mer eksponering til disse aktivitetene ikke nødvendigvis gir et mer omfattende ordforråd.

Abstract

This master's thesis describes a quantitative study on Norwegian first-grade pupils' exposure to extramural English activities and their vocabulary knowledge. The aim of the study was to investigate how much extramural English Norwegian first-grade pupils are exposed to during a week and how the participants score on a vocabulary test used for measuring their receptive English vocabulary knowledge. The study was conducted on 12 participants in first grade at a Norwegian primary school. The study was carried out as a quasi-experiment, where the participants' parents were asked to answer a questionnaire regarding their child's exposure to extramural English activities. Additionally, the participants were subjected to the Peabody Picture Vocabulary Test (PPVT-4) to measure their receptive English vocabulary knowledge. The data from the survey and the test were analysed using descriptive statistics and graphic representation, in addition to correlation analysis. Overall, the study showed that the participants were exposed to English for an estimated seven hours and fifteen minutes a week. It was found that they were exposed to English through YouTube the most, followed by music, television and gaming. Furthermore, the study found that the participants' vocabulary score was comparable to a native English-speaking three-year-old, and that the results showed a higher knowledge than was found in a study on participants of a similar age around a decade ago (Dahl & Vulchanova, 2014). Finally, the study showed no significant correlation between exposure to English extramural activities and vocabulary knowledge. However, the tendencies showed that more exposure does not necessarily correlate to a higher vocabulary score.

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Contents

1.0 Introduction

The proportion of Norwegian fifth-grade pupils who scored the highest level of results on the Norwegian national tests in English has increased by more than two percentage points from 2020 to 2021. At the same time, the amount of pupils that scored in the middle level of results has decreased, and it seems that the division in English knowledge among Norwegian pupils is increasing as the years go on (Waksvik & Mejlbo, 2022). English is a mandatory school subject for 11 years in Norway, beginning in the first year of school. Additionally, exposure to English is available in many arenas outside of school, for instance, through non-dubbed television, music, and the Internet (Rindal, 2014). According to Brevik (2019) around 52 per cent of all visited websites on the internet are in English. Thus, the Internet is a significant arena for English exposure. There is no doubt that Norwegian children are exposed to English to some degree outside of school, but interestingly, research on young children is challenging to find. Furthermore, there is very little research concerning this exposure to English knowledge and acquisition amongst Norwegian pupils. However, it is found that more than 70 per cent of Norwegian children between the age of one and five watch YouTube regularly and that Norwegian youths between the age of nine and fifteen have the most exposure to online activities amongst 19 European countries (Smahel, Machackova, Mascheroni, Dedkova, Staksrud, Ólafsson, Livingstone & Hasebrink, 2020).

In the Norwegian report called "Barn og medier" (Medietilsynet, 2020a), 32 per cent of Norwegian nine-to eighteen-year-olds use English as their predominant language in social media. Furthermore, 64 per cent watch YouTube videos predominantly in English, 62 per cent watch films or television predominantly in English, and 63 per cent play games predominantly in English. In the three platforms mentioned above, Norwegian and English are used just as much as primarily Norwegian. Although the current study focuses on younger children, it is reasonable to believe that some exposure is in English for five- and six-year-olds as well.

When deciding on a topic for my master's thesis, I wanted to investigate language acquisition. English has been my passion since I started middle school, and after starting university, I developed a further passion for language acquisition, especially second language acquisition. After working as a first-grade substitute teacher for six months, I saw some interesting patterns in the pupils' English knowledge. There were pupils with whom I could have a whole conversation in English, and there were pupils who struggled to count to ten after six months in school. After further conversations with the pupils, it became evident that

the ones who appeared to have a more extensive vocabulary and better English knowledge spent quite some time watching YouTube videos and playing English games outside of school. Thus, I decided that I wanted to dive deeper into the field of extramural English exposure among Norwegian first-grade students. The term *extramural English* was first introduced by Sylvén (2006) to explain how the out-of-school exposure to English among Swedish school students is used in the Content and Language Integrated Learning (CLIL) classroom. Sundqvist (2009, p. 1) has later defined the term as "the English learners come in contact with or are involved in outside of the walls of the classroom". In this thesis, the term will be used when referring to input outside the classroom. The term *extramural* is derived from Latin and can be translated into something like "outside of the walls"[1]. Hence, *extramural English* can describe any exposure to English outside the classroom walls. It is not necessary to have a deliberate intention to acquire English with extramural English, and the most important criterion is that the learner is exposed to English to some degree.

The current study aims to investigate Norwegian first-grade pupils' exposure to extramural English activities, such as watching television, listening to music, watching YouTube videos, and playing English games. This study is a quantitative quasi-experiment on 12 participants in first grade at a Norwegian primary school. The participants were tested on their receptive vocabulary knowledge using a standardised vocabulary test. In addition, the participants' caretakers answered a questionnaire concerning the participants' exposure to English outside of school. The results of the testing and questionnaire were analysed using correlation analysis and graphs. Finally, the thesis will explore the research questions:

1) *How much extramural English exposure do Norwegian first-grade pupils receive?*
2) *How do Norwegian first-graders score on L2 English vocabulary testing, and can this be related to the amount of extramural English exposure?*

The thesis will begin with a thorough introduction of relevant theory on second language acquisition, English acquisition and knowledge, the English language's and digital technology's position in Norway and in children's everyday lives, and previous research. After that follows a presentation of the methods used in the investigation, followed by an analysis and presentation of the results found in the investigation. Next, a discussion of the

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[1] According to the *Oxford English Dictionary Online* (Accessed March 8, 2023)

research questions, as well as some possible limitations and suggestions for further research. The thesis ends with a conclusion of the study.

2.0 Theories

2.1 Second language acquisition

Second language acquisition (SLA) refers to the study of learners of an additional language to their first language and the process of acquiring the language itself. A second language, sometimes referred to as L2, is a language that is acquired after the acquisition of a first language. In Saville-Troike (2006), there is a distinction between a second language and a foreign language, but I will use a combination of the two definitions under the umbrella term "L2". L2 is a language typically used for primary societal purposes or cross-cultural communication. We can split SLA into formal and informal L2 learning, and the acquisition happens through both learning methods. Informal L2 learning occurs in naturalistic contexts, for instance, in interaction with individuals or groups who speak the target language. Formal L2 learning, on the other hand, occurs through targeted teaching in classrooms. Users of two or more languages are referred to as multilingual, and it is assumed that at least half of the world's population fall under this category (Saville-Troike, 2006).

SLA happens through repeated interactions with individuals who speak the target language and targeted second language teaching in school. The storage and retrieval of language-relevant information in the learner's brain are just as necessary as interaction with native speakers (De Wilde, Brysbaert & Eyckmans, 2021). However, the emphasis on native speakers in SLA might not be as beneficial as it seems. Even though native influence plays a massive part in second language acquisition, it might be just as beneficial for the learners to encounter authentic speech from other second language learners (Cook, 1999). De Wilde et al. (2021) introduced the term "contextual language learning" to refer to language learning that happens with relation to context, and it is found that this type of language- learning is found everywhere as long as the learners are repeatedly exposed to the input of the target language.

Although usage-based contextual language learning is beneficial for learning a second language, the method has some limitations. For instance, De Wilde et al. (2021) present the idea that second language learners are often not in close contact with native speakers of the target language and hence do not receive the realistic input they need to learn from context. In addition, if the learners' first and second language use different expressions for the same idea, the second language acquisition will compete with already established first language

knowledge. However, by including second language teaching in the educational curriculum, the learners will still be in contact with the target language. The hope is that this will lead to further interest and communication with the target language. Finally, it is assumed that a second language can be learned through explicit explanation, practice, testing, and performance feedback (De Wilde et al., 2021).

2.2 Second language acquisition and age

Children usually learn their first language at the same time and in the same way regardless of which language they learn. They master basic grammatical and phonetic rules in their first language before age seven, and they understand and produce utterances that they have not necessarily heard around them (Saville-Troike, 2006). In addition, there is a supposed stage after which the learning of L1 cannot be complete. In other words, to be sufficient in the L1, one should usually learn it before a particular stage. All these components promote the belief that humans have an innate capacity to learn language. Every human child is genetically capable of learning a language – without it being a conscious process. Some researchers believe that the development of language acquisition slows down drastically around puberty and that any language learnt after this will likely never reach full development. This is called the *Critical Period Hypothesis* (Saville-Troike, 2006). However, it is essential to remember that the assumed criterion for success in second language acquisition is widely set as the level of native proficiency and not a criterion realistic for non-native speakers. Perhaps the Critical period hypothesis would be less prevalent if the criteria for L2 speakers were set on a level realistic to L2 proficiency. Nevertheless, there is agreement among some researchers that there can be a difference between language acquisition before and after a set period around puberty (Muñoz & Singleton, 2011). Because of this assumption, it is especially interesting to look at SLA in young children, to see if the Critical Period Hypothesis has any effect on second language acquisition at all.

2.3 Input and extramural English activities

Second language acquisition is commonly thought to occur through targeted teaching in education or interaction with a native speaker. There are, however, several different ways to learn a language (De Wilde et al., 2021). The nature of the input and the amount of input is vital in determining how proficient an individual will become in the target language. Earlier researchers have assumed that we learn structures before practising them in communication,

making us fluent. Krashen (1982), on the other hand, presents the *input hypothesis*, which challenges this view. The input hypothesis says that we acquire language by first "going for meaning", and as a result, we learn structure. It all relates to acquisition as opposed to learning, and that this acquisition happens when we understand a language that is more advanced than our current level of competence. With the help of context and extra-linguistic information, we can understand and comprehend information that we have not yet acquired through input. When we have understood the input correctly, the communication is successful, and we have encountered enough of the input, we develop our linguistic competence and acquisition even further. Complete comprehension and acquisition can only emerge gradually and not be taught directly. Although the input hypothesis is often used concerning first language acquisition, it is also relevant for second language acquisition. Similarly to L1 acquisition, SLA happens when exposed to language with a structure a bit beyond our current level of competence. We can also draw parallels to L1 acquisition with the importance of simple codes used when we receive input from native speakers who simplify their language when they speak to non-native speakers, teacher-talk in second-language classrooms and the interlanguage talk between second-language acquirers (Krashen, 1982). These simplified codes are advantageous in second language acquisition, just like "caretaker speech" is essential for first language acquisition. In addition, the input hypothesis predicts that naturalistic input can help move to a higher acquisition level. Moreover, it can be favourable to the instructed classroom exercises that aim to teach structure systematically (Krashen, 1982).

As mentioned above, extramural English is the English one encounters outside the instructed classroom. Interestingly, Peters (2018) found that Flemish 16- to 19-year-olds are exposed to large amounts of English outside of school. Brevik (2016) confirms this with her study of Norwegian high-school students, who reported that they use English as their preferred out-of-school language, and that their motivation for using English is higher than using their native language. She found that they mainly watched TV and films, listened to music, browsed social media and played online games in English rather than Norwegian. Similarly, Sundqvist (2009) found that Swedish ninth-grade pupils spent about 18 hours a week on extramural activities like the ones mentioned below.

2.3.1 TV
Watching television in the target language can contribute to L2 acquisition, especially because of the large amount of spoken, authentic input one can receive. In addition, watching

television in the target language is multimodal and is thus a good way to receive visual support, either as pictures and film or with subtitles in the target language or the individual's native language (De Wilde et al., 2021). In De Wilde et al. (2021), several studies that show the benefits of watching television are mentioned. Some studies have shown the positive effects on vocabulary, and it is described as one of the most important extramural variables for developing both reading and listening skills in European children. Peters & Webb (2018) found that watching television without subtitles can result in learning the meaning of new words. Additionally, it is found that EFL learners from countries where the foreign TV programs are subtitled watch more foreign television than learners from countries where foreign television is dubbed, and that watching foreign television leads to more vocabulary knowledge (Peters, Noreillie, Heylen, Bulté & Desmet, 2019).

Statistics Norway (2022) provides statistics on how many Norwegians watch TV, both streamed, downloaded or by television. These numbers represent the age group nine to fifteen. 72 per cent watch streamed or downloaded TV shows or videos, and 34 per cent watch television. They watch streamed or downloaded TV shows or videos for about one hour daily (Statistics Norway, 2022). This can be in any language. Additionally, Sundqvist (2009) found that the Swedish ninth-grade pupils who participated in her study reported watching television for about 3.5 hours per week. Only four per cent of the participants reported watching English TV shows less than a few times a week.

2.3.2 Music

Another extramural exposure activity that can positively affect second language acquisition is listening to music in the target language. According to De Wilde et al. (2021), there are positive effects on reading and listening skills in children from listening to music, but the effect is far less than with watching television. Some studies, such as Peters (2018), have, in fact, found a slight negative effect of listening to English music, possibly because it is not necessarily implied that the lyrics are understood when listening to a song. It is possible to enjoy songs without understanding the lyrics, whereas, with television, it is more important to understand what is being said to be able to enjoy it (De Wilde et al., 2021).

According to statistics, Norwegian citizens between the ages of nine and fifteen listen to music through vinyl, CDs, MP3 players, audio files downloaded from the internet, or streamed audio files for an average of 43 minutes daily. In total, 63 per cent report that they listen to music daily (Statistics Norway, 2022). According to the Norwegian Ministry of Culture, four of ten Norwegians report that streaming services are their main music source.

However, along with the increase in listening to music through streaming services, the sale share for Norwegian recorded music has also decreased since 2009 (Norwegian Ministry of Culture, 2019).

2.3.3 Gaming and YouTube

Gaming is another activity that is listed as beneficial for language learning. Jensen (2017) has found that individuals who are gaming frequently or moderately, predominantly in English, outperform individuals who are not gaming at all on vocabulary tests. It has also been found that they score better on vocabulary tests (De Wilde et al., 2021). Furthermore, Jensen (2017) found that young Danish learners played English computer games for about 128 minutes a week and that this correlated positively with the young learners' vocabulary knowledge. The male participants reported nearly double the amount of gaming compared to the average for the group, while the female participants reported less than half the exposure time. According to De Wilde and Eyckmans' (2017) study, computer use and gaming were two significant factors in English acquisition from the input. Brysbaert, De Wilde and Eycksman (2018) found that 98.2% of nine- to twelve-year-old Flemish children had access to a computer and mainly used it for gaming, watching films and watching film clips, and social media. More than 300 of the about 800 participants in their study used YouTube daily. In his conceptual article, Dizon (2022) mentioned that exposure to authentic materials in a second language, for instance, English, helps learners acquire and practise authentic English that they can use in their everyday lives.

Furthermore, Aldukhayel (2021) has shown that English as a Second Language (ESL) learners believe that they acquire better pronunciation and incidental vocabulary knowledge by watching YouTube. Overall, YouTube has been found to promote language development among ESL learners. Peters (2018) and González-Fernández & Schmitt (2015) have found that visiting English language websites, in general, has led to positive vocabulary learning.

According to the survey "Barn og medier" from Medietilsynet (2020a), six out of ten Norwegian children between the ages of nine and eighteen report playing videogames, and 70 per cent of these report that they believe that gaming makes them more proficient in English. There are some gender differences. 92 per cent of boys are reported to play games of any sort, compared to only 59 per cent of girls. However, this difference increases with age and is less significant for younger children (Medietilsynet, 2022). In the survey of children aged one to five (Medietilsynet, 2020b), 52 per cent were reported to play games of any sort. In addition, 72 per cent of the parents report that their child is watching YouTube or YouTube Kids, and

24 per cent of them report that they watch it daily. Although the survey does not say anything about the language on YouTube and the games, it is reasonable to believe that at least some of the exposure is in English or contains elements of English.

2.4 Vocabulary

Vocabulary knowledge is crucial when learning a language. It is, however, difficult to conclude how we measure vocabulary and what we count as a word. Nation (2001, p. 6) asks whether we count *book* and *books* as the same word. Or whether we count homonyms as two words of one. Or if we count people's names or product names as words. Furthermore, he provides several ways to count words. We can count every word form in a spoken or written text, even if it occurs more than once. We can count the words but omit the reoccurring words. We can count lemmas, which consist of a headword and some of its inflected or reduced forms. What is often used, however, is word families. They consist of a headword, its inflected forms, and the closely related forms. According to several researchers, including Peters & Webb (2018), English learners need to know about 3,000-word families to understand spoken discourse and 8,000 to 9,000-word families to understand written discourse. They found that learners with a larger vocabulary size often understand reading and listening texts better than learners with a small vocabulary size (Peters & Webb, 2018).

Nation (2001) states that when considering vocabulary learning, one should also consider the learning burden of words. It relates to the effort which is required to learn the word. Suppose the word represents the knowledge the learner is already familiar with, for instance, from their first language. In that case, the learning burden is lighter than if the word was wholly unknown or unfamiliar. Therefore, vocabulary is an important measurement when assessing English proficiency and performance. It correlates to their reading, writing, listening, and speaking skills and gives us a good estimate of their overall performance (Leona, van Koert, van der Molen, Rispens, Tijms & Snellings, 2021).

Vocabulary can be divided into *receptive* and *productive* vocabulary. Nation (2001) states that receptive vocabulary refers to the ability to recognise and understand the meaning of a word when it is encountered in written or spoken form, based on conscious awareness of its form. In addition, he states that productive vocabulary is when you find the correct use of a word in spoken or written form. While the difference in size between the receptive and productive vocabulary is quite noticeable in native speakers, with the receptive vocabulary being considerably larger than the productive vocabulary, the difference in non-native

speakers is smaller. Activities that focus on receptive vocabulary are more common in the L2 classroom than productive vocabulary. For example, some activities mentioned in Webb (2005) are looking up words in dictionaries, matching words and definitions, guessing from context, learning from word pairs and so forth.

Because of the large focus on receptive activities in language teaching, the learners often gain more receptive vocabulary than productive. Additionally, encountering incidental learning from guessing from context is one of the most important sources for vocabulary learning. While this predominantly concerns native first language acquisition, it can also be transferred to the theory of second language acquisition. However, it is often difficult to experience the conditions that make this type of vocabulary learning possible. It happens when the learner acquires vocabulary from reading or listening to normal language use while focusing on the text's message. It can, for instance, occur through extensive reading, taking part in conversations, and listening to stories, films, television, or the radio. It is important to note that incidental learning through context does not need to be opposed to the instructed and intentional learning and teaching of vocabulary. On the contrary, they can complement the language acquisition process and are equally important in enhancing learning in this process. When learning vocabulary from context, it is necessary with some structured and intentional focus in addition to the incidental learning mentioned above (Nation, 2001).

2.5 English in Norway

The English language is considered a foreign language in Norway, although it is increasingly becoming a part of the Norwegian culture and linguistic repertoire. Norwegians are, however, not classified as speakers of English as a second language as English is not an official language in Norway (Rindal & Piercy, 2013).

According to Fenner & Skulstad (2020), English was introduced into the Norwegian school system as early as 1936, but it was not made compulsory until 1969. It was seen as useful in society, as well as an entrance to higher levels of education, and was hence made a part of the Norwegian school system. By now, the former British influence on Norwegian English teaching slowly shifted towards a more American structuralist approach. In the 2006 Knowledge Promotion (LK06), English was seen as a global language and thus an important part of Norwegians' life (Fenner & Skulstad, 2020; Rindal, 2014). In the new Knowledge Promotion of 2020 (LK20), English is described as "an important subject when it comes to cultural understanding, communication, all-round education and identity development" (Utdanningsdirektoratet, 2020). Communicative influence has been a major influence in the

most recent curricula, with *communication* as a major focus point (Rindal, 2014). Although the English language in Norway often is used through instructed English teaching and learning, it has become increasingly more accessible and used. Large companies often use English as a lingua franca, and in higher education, English is often used in written material and lectures. In addition, English is now widely accessible through audio and audiovisual media and is often used as a lingua franca when travelling abroad. Young Norwegians are, in fact, among the most proficient L2 English speakers among their European peers (Rindal & Piercy, 2013)

Another reason why Norwegians are considered among the most proficient L2 speakers in Europe might be the high number of Norwegian-English cognates. De Groot (2011) writes about cognates as words that are the same as or share a significant portion of their sound with a translation in the learner's first language. It is, in other words, translations with common genealogy and shared semantic, orthographic, and phonological traits. It is revealed through testing that cognates are more often answered correctly than non-cognates (Skjelde, 2022, p. 3). For instance, it is assumed by Ringbom (1987) that cognates are the reason why Swedes are better at English than Finns. Swedish is closer to English than Finnish, and it is reasonable to believe that the high number of cognates affects this. In addition, Morrissey (1981) have found that even "false cognates", or deceptive cognates, can be helpful in translation and language acquisition. However, there are certain situations where this can fail. For instance, if the languages share cognates, but the use of them is restricted to a domain of one of the languages and is more general in the other. Romance words in English are an example of this because they are generally less broadly used in English than where they originated (De Groot, 2011). Peters & Webb (2018) also found that the high amount of Dutch-English cognates made it easier for Dutch-speaking EFL learners to learn English through incidental vocabulary acquisition.

2.6 Children and media

As the use of the internet and digital technologies has steadily increased during the past three decades, it has become an immense part of the daily lives of people of all ages. The EU Kids Online survey (2020) has found interesting data on the online use of children all over Europe and has country-specific details to compare. Although it is difficult to estimate the time children spend online because of the easy access to digital technologies like smartphones, they have provided data on how much time Norwegian children between the ages of nine and

sixteen spend online. Norwegian children are reported to spend a total of 219 minutes online each day. That is more than three hours and thirty minutes and is the highest total score amongst the 16 countries investigated. It is 25 more minutes than Malta, the country with the second-highest average time. Furthermore, it has sufficiently increased since the survey in 2010, where it ranged between 60 to 120 minutes for all the countries, and Norway was not on the top of the list. In other words, it has possibly increased to double the amount in ten years. When we look at the estimated average time divided by boys and girls, we see that Norwegian girls have the highest reported time of 227 minutes each day, while Norwegian boys have a total of 211 minutes. They have also provided data divided between three age ranges: nine to eleven years, twelve to fourteen years, and fifteen to sixteen years. On average, in all the European countries included in the survey, children aged nine to eleven spend 114 minutes online daily. In Norway, however, children in the youngest age group spend 165 minutes daily, compared to 237 and 267 minutes for the older age groups. All the countries experience a significant increase in time spent online with the older age groups, but Norway still has the highest scores overall (Smahel et al., 2020).

Skalická, Hygen, Stenseng, Kårstad and Wichstrøm (2019) have found that more screen time at age four predicts lower levels of emotional understanding at age six. "Emotion Understanding (EU) is our ability to understand, predict, and explain our own and others' emotions" (Skalická et al., 2019, p. 427). Because of its importance in mental health, social competence, and academic success, it is an important part of adaptive socioemotional development in children. In addition, they write about how children's use of screen activities, or digital technologies, has increased drastically during the last decade. US children up to age eight have an estimated screen time of nearly 2.5 hours daily. Television watching has been rather stable during the decade, but Internet use and gaming specifically have seen a radical increase. They also point out that watching television more than one hour a day before age two has been reported to increase the risk of delayed cognitive and linguistic skills. Furthermore, one hour of television watching during a weekday is associated with 45 minutes less time spent with their parents, which decreases the quality of child-parent interaction, which in turn is a great part of children´s socialisation process. Boys tend to watch more TV and game more than girls, which in turn can result in differences between the genders. Skalická et al. (2019) observed a negative effect of screen use on cognitive abilities and emotional understanding, which correlates to findings from some earlier studies.

2.7 Earlier research on vocabulary score among younger children

Dahl & Vulchanova's (2014) study on naturalistic acquisition in an early language classroom in Norway investigated if providing naturalistic second language acquisition in a classroom is possible and if it has an effect on L2 vocabulary. The study's participants were first-grade pupils, and they were tested using the Peabody Picture Vocabulary test, version four (Dunn & Dunn, 2007). This test uses pictures to measure vocabulary comprehension. This happens by letting the subject hear a word, followed by them selecting the corresponding picture from a set of four (Dahl & Vulchanova, 2014). They split the participants into a native-speaking group and a bilingual group to compare the results. The teacher in the native-speaking group was told to continue the English teaching as ordinary with the L1, in this case Norwegian, as the main medium of instruction. In the bilingual group, however, the teachers were encouraged to use English more with the students, both in and outside of class. They tested the participants first within the first six weeks of the children's first school year and then conducted a post-test within the last six weeks of the same school year. The pre-testing revealed that the native Norwegian-speaking children generally had very little English vocabulary knowledge when starting school as 6-year-olds. Compared to native English-speaking children, this is the equivalent of the age of 2 years and 4 months, or 2;4. The children in the bilingual group had an equivalent of 2;5. After eight months, however, the score had increased to an equivalent of 2;7, compared to 2;4 in the pre-testing for the children in the native-speaking group, while the children in the bilingual group had a 10-month increase – from 2;5 to 3;3.

Dahl & Vulchanova (2014) mention that children in both the native and bilingual groups had acquired some English prior to starting school. They mention computer games, music, TV, and movies as possible sources for the extramural English acquisition. However, they believe this extramural English exposure is insufficient for systematic acquisition, mainly because the native-speaking pupils' lack of vocabulary increases during the school year. They also point out the possibility that the early words in the PPVT-4 test are more expected to be familiar to English-speaking children, rather than the focus of Norwegian English classrooms. However, they believe that many of the words are, in fact, encountered during instructed English teaching in first grade. Finally, Dahl and Vulchanova conclude that the PPVT-4 test only provides information about receptive vocabulary. However, this can be assumed to be a predictor for further language acquisition because receptive vocabulary is important for comprehension(Dahl & Vulchanova, 2014).

2.8 Literature summary

This section provided an overview of (second) language acquisition and English learning in Norway. It covers various aspects of language acquisition, including the input hypothesis, extramural English activities, vocabulary knowledge, English in the Norwegian school system, and earlier research on the naturalistic acquisition of English vocabulary in Norwegian classrooms. The input hypothesis suggests that language is acquired through exposure to comprehensible input. It explains how this theory relates to first and second language acquisition and how naturalistic input can help with moving to a higher level of acquisition.

The section on extramural English activities explores how watching TV, listening to music, and gaming can positively affect second language acquisition, while the section on vocabulary examines the importance of vocabulary knowledge in language learning and how it can be measured. It explains that vocabulary can be divided into receptive and productive vocabulary, with receptive vocabulary referring to the ability to recognise and understand the meaning of a word when it is encountered in written or spoken form, based on conscious awareness of its form, and productive vocabulary being the ability to find the correct use of a word in spoken or written form.

The section on English in Norway discusses the history of English teaching in the Norwegian school system and how English has become an important part of Norwegian culture. Finally, the section on earlier research on the naturalistic acquisition of English vocabulary in Norwegian classrooms presents findings from a study on the acquisition of English vocabulary in Norwegian first-grade classrooms.

3.0 Method

3.1 The current study

This study aimed to investigate the English exposure that Norwegian first-grade pupils encounter outside of their instructed English teaching through school. The exposure investigated in this study relates to extramural activities such as watching TV, watching YouTube videos, listening to music, reading, listening to audiobooks, and gaming. The goal was to determine how much time the participants spent on extramural activities such as the ones listed above and to investigate the participants' English vocabulary knowledge. The participants' vocabulary knowledge was tested using the Peabody Picture Vocabulary Test, fourth edition (PPVT-4: Dunn & Dunn, 2007). In addition, the participants' caregivers were

asked to answer a digital survey to map out the participants' exposure to extramural activities. In particular, this study focuses on the research questions mentioned in section 1, repeated here:

1) *How much extramural English exposure do Norwegian first-grade pupils receive?*
2) *How do Norwegian first-graders score on L2 English vocabulary testing, and can this be related to the amount of extramural English exposure?*

3.2 Participants

The participants recruited for this study were all first-grade pupils from the same Norwegian primary school. The school is located in a mid-size city in the southeastern part of Norway. The area contains citizens from different economic classes and cultural backgrounds. The parents of the pupils were provided with an information letter where they could read about the project and sign to consent for both, or either, answering a survey and for the pupils to participate in a test. All in all, twelve pupils and their parents consented to participate in the survey and the test. There were three female pupils and nine male pupils and their parents who participated in the study. I will refer only to the pupils as participants further in the thesis. The pupils were six years old or turned six years old about a month later when the experiment took place, and they had been going to school for about two months. The goal was to have participants from different backgrounds and with different levels of English proficiency. Five pupils came from homes where they speak another language than Norwegian or in addition to Norwegian.

3.3 Survey

To conduct this study, a digital survey was used to get an overview of the participants' extramural English exposure during a week. As the participants were too young to be aware of the time they spent on the different extramural activities, in addition to likely being unable to answer a survey independently, the caretakers were asked to answer the survey. The survey was distributed through www.Nettskjema.no, a software developed by the University of Oslo. The questions were designed by me in cooperation with my thesis advisor. The survey consisted of 12 questions, most of which concerned an estimate of their child's exposure to English outside of school. Details of the survey questions can be found in Appendix A.

In addition, a couple of the questions concerned relevant information about the participant so that it would be possible to compare the results to the testing and the variables

against each other. Seven of the questions asked about the participants' exposure to several English extramural activities such as watching television, YouTube, reading, listening to music, listening to audiobooks, gaming, and other activities. These questions were formulated to collect information on the participants' habits concerning the activities above, as this is one of the aims of the current study. Most of the questions in this survey were close ended with multiple scaled options. For example, on the questions relating to the amount of extramural activities during the week, the intervals were divided into 0 hours, 1-2 hours, 3-4 hours, 5-6 hours, and 7 or more hours. The alternatives were divided into intervals to ensure that the participants found an alternative that fits their experience. However, this can perhaps be a challenging way to formulate the alternatives when analysing the answers. In addition, the measurement of hours per week, instead of hours per day, was used to make it easier for the participants to answer, especially on activities that do not happen daily. The thought behind it was to ensure that even if the participants only watch YouTube on Saturdays, it would still be considered when answering the survey. Suppose the alternatives were measured in daily activity. In that case, it might have been difficult for the participants to answer truthfully, or it could provide an incorrect picture of the actual amount of exposure.

When designing the questionnaire, the questions needed to be natural-worded and easily understood by the parents who participated on behalf of their children. There was a high possibility that some of the parents would come from a minority background and not speak Norwegian as their L1. Hence, the questions needed to be as simplified as possible without removing the essence of the question. The survey was made solely in Norwegian to ensure that the caretakers who participated in the survey would understand the questions. The information letter was also written in Norwegian, and thus it was reasonable to believe that the participants had at least one caretaker who could read and understand Norwegian. It was crucial that the participants understood the questions and could answer as adequately as possible. Hence, it was decided that the survey should not be written in English. All the questions concerning the estimated hours per week in this questionnaire were written in the same style, only changing the specific media or arena in focus. It can be both a strength and a weakness. If the parents understand the wording of the first question, then the likelihood of them understanding all the questions is higher. On the other hand, if the parents misunderstand the first question, it is likely that all the questions are misunderstood, and the result may eventually be invalid.

3.4 PPVT-4

The Peabody Picture Vocabulary Test, Fourth Edition – or the PPVT-4- is an instrument developed to measure children's and adults' receptive English vocabulary. The test is designed to evaluate the comprehension of spoken words in Standard English, but because of its early age tests, it can also be used on EFL pupils. The words in the early age sets are high-frequency, commonly used words that EFL speakers should have encountered and learnt (Dunn & Dunn, 2007). In addition, it is possible to track the student's word recognition and partial word knowledge. The current study aims to investigate Norwegian first-grade pupils' vocabulary knowledge. Therefore, I decided to use PPVT-4 to test the pupils' English vocabulary to evaluate their receptive vocabulary because this type of vocabulary is what they will most likely have gained from extramural English exposure. Furthermore, the possibility of using the test for young children and EFL speakers and the possibility to compare it to earlier research such as Dahl & Vulchanova (2014) made the PPVT-4 very attractive as an instrument. The tests were carried out by me alone with the pupil at the pupils' school during recess or in a different room during class. The parents had already consented on behalf of the pupils, but they were still given a choice to participate or not.

The tests were, for the most part, carried out in an undisturbed and quiet room next to the classroom. The pupils were told to sit on a bench or a chair. One of the binders from the test material was placed on the table in front of them. The experimenter explained that they would flip through the binder and that each page had four pictures. The pupils were shown a training page containing pictures of a dog, a boy, a chair, and a bicycle. The pupils would be asked if they knew what "hund" is in English, and when they answered "dog", they were told to point at the "dog". The participants were told that an English word would be read out loud, and their job was to point at the picture they believed corresponded to the stimuli word. They were reassured that it did not matter whether they chose the right picture or not; the only important thing was that they pointed to one of the pictures. If they did not know, they were told to point at what they thought was right. Their results were tracked via the record form, where it was possible to circle their answer and track whether it was an error or not. The test contains 12 items of four pictures per set and becomes progressively more difficult as one moves through the sets (Dunn & Dunn, 2007). If the participant makes more than eight errors during a set, the test does not continue. During the test, the pupils received positive feedback to ensure that they did not feel like they were tested. Some pupils were nervous before but loosened up as they understood their job and that making mistakes was not dangerous. They were not told whether they pointed at the correct picture or not.

3.5 Ethical considerations

Ethical considerations have been thoroughly considered throughout the process of developing and conducting the current study. Before being able to conduct the study, it was submitted to NSD – Norwegian Centre for research data to be cleared. In addition, an information letter and consent form were sent to the possible participants before conducting the study. This followed the template for information letters from NSD and described how the study would be conducted, how the data would be processed and used, and the participants' rights. They were informed that all data would be handled confidentially and that everything would be anonymised in the final thesis. At the end of the letter was a consent form that the participants' caretaker had to sign. Because of the participants' young age, their caretakers had to consent on behalf of the participants. They were, however, encouraged to involve the children in the process. In addition, the pupils were assured that it was voluntary to participate in the test. They were asked directly if they wanted to participate, and there was no pressure on them. The testing was done separately during class, and if some of the participants chose not to participate in the test, they would follow the class as normal. In that way, there were no implications for not participating in the test.

3.6 Data analysis

The data from the survey was downloaded as a schema from the database and then transferred into a Microsoft Excel spreadsheet for a better overview of the results. In the spreadsheet, the intervals were coded into constant numbers to make the data analysis easier. The test results were rewritten from the answer sheets to the same spreadsheet as the survey results to ensure that all the information needed for the analysis was available and easy to find. The participants' answers to the questions were marked as either correct or incorrect before the number of errors was calculated. In this way, it was possible to calculate the raw and standard scores, which again was used in the analysis. The data analysis was made using the statistical analysis software STATA.

4.0 Results

4.1 Extramural activity among the participants

The first research question of this study relates to the amount of extramural English activity among the participants. The amount of this extramural activity is shown in Table 1.0 below.

The activity is presented in minutes rather than hours. However, when analysing the results, it was more convenient to interpolate these intervals into a mean of minutes rather than hours. This was done by calculating the mean of each interval (1-2 hours = 90 minutes, 3-4 hours = 210 minutes, 5-6 hours = 330 minutes).

Table 1.0: *Reported amount of time spent on different extramural activities (in minutes)*

Variable	Obs.	Mean	Std. dev.	Min	Max
YouTube	12	150	62.67	90	210
TV-shows	12	95	63.75	0	210
Music	12	112.5	82.03	0	330
Games	12	52.5	46.34	0	90
Other activities	12	25	63.75	0	210

The most common activity amongst the young pupils was watching English YouTube videos, with a mean score of 150 minutes per week. In addition, they listened to English music for an average of 112.5 minutes per week, followed by watching English TV shows for an average of 95 minutes. The pupils played English games for an average of 52.5 minutes per week and encountered other activities for an average of 25 minutes per week. "Other activities" mentioned by the participants include watching English football, speaking to English-speaking friends, and using English words in daily conversations, for instance, "high five" or "come on".

In addition, it is interesting to see the data divided by gender, as seen in Tables 1.1 and 1.2.

Table 1.1 *Reported amount of time spent on different extramural activities (in minutes)– male participants*

Variable - male	Obs.	Mean	Std. dev.	Min	Max
YouTube	9	143.33	63.25	90	210
TV-shows	9	106.67	65.57	0	210
Music	9	130	84.85	90	330
Games	9	60	45	0	90
Other activities	9	33.33	72.62	0	210

Table 1.2 *Reported amount of time spent on different extramural activities (in minutes)-female participants*

Variable - female	Obs.	Mean	Std. dev.	Min	Max
YouTube	3	170	69.28	90	210
TV-shows	3	60	51.96	0	90
Music	3	60	51.96	0	90
Games	3	30	51.96	0	90
Other activities	3	0	0	0	0

There were 9 boys and 3 girls who participated in the test and survey. Although the selection is skewed, the numbers can still be interesting to interpret. For example, the "YouTube" variable seemed interesting, where the girls had a mean score of almost 30 minutes more a week than the boys. However, with all the other variables, the boys had a higher average score than the girls. This might suggest that boys generally encounter more English through extramural activities than girls.

Finally, to be able to investigate any possible correlations between the participants with additional home languages than Norwegian, the descriptive statistics divided by those two categories are provided.

Table 1.3 *Reported amount of time spent on different extramural activities (in minutes)– another language*

Variable – speak other language than/in addition to Norwegian at home	Obs.	Mean	Std. dev.	Min	Max
YouTube	5	162	65.73	90	210
TV-shows	5	54	49.30	0	90
Music	5	96	74.70	0	210
Games	5	72	40.25	0	90
Other activities	5	0	0	0	0

Table 1.4 *Reported amount of time spent on different extramural activities (in minutes)–Norwegian*

Variable – speaks only Norwegian at home	Obs.	Mean	Std. dev.	Min	Max
YouTube	7	141.43	64.14	90	210
TV-shows	7	124.29	58.55	90	210
Music	7	124.29	90.71	90	330
Games	7	38.57	48.11	0	90
Other activities	7	42.86	80.98	0	210

Five participants reported speaking either another language in addition to Norwegian at home or another language as their only language at home, and seven participants spoke Norwegian as their only language at home. This division is more evenly spread than with gender. On average, participants who speak another language watched about 20 minutes more of English YouTube than participants who only speak Norwegian. On the other hand, participants with Norwegian as their only language spent more than double the number of minutes watching English TV shows a week than participants with another language. Another noticeable difference is how participants who speak Norwegian spend about half an hour less weekly playing English games than participants with another language. It seems that participants who only speak Norwegian at home encounter extramural English more throughout the week than participants who speak another language.

4.2 Vocabulary score

The second research question in this study relates to Norwegian first-grade pupils' English vocabulary knowledge. The PPVT-4 test was used to test this. When completing the PPVT test, the scoring sheet provides an easy formula to determine the raw score of the participant. The raw score is determined by subtracting the total number of errors from the total completed tasks (ceiling item). It provides a picture of how their vocabulary can be determined. Each raw score does not provide any relevant information itself. Still, when seen in relation to the other participants' raw scores, we can determine whether someone has a more extensive vocabulary knowledge than the others, and vice versa.

However, the raw score was converted into a standard score to compare the results to something more tangible. In the current thesis, the standard score is the basis for the

discussion, and the raw score is thus not presented here. The manual that accompanies the PPVT-4 contains several tables divided into age or grade. To receive an insight into how the participants in the current study scored compared to native-speaking children, the table used was calculated based on native English-speaking children of 6 years and 0 to 1 month. This table was chosen because the participants are around 6 years old, with a spread of 5 years and 11 months to 6 years and 8 months. It is interesting to see how the Norwegian pupils score compared to native English-speaking pupils of approximately the same age. The PPVT-4 scoring form provides a graphical profile, where different ranges of standard score is divided into the categories "extremely low score (<69)"; "moderately low score (70-84)", "low average score (85-99)", "high average score (100-114)", "moderately high score (115-129)" and "extremely high score (>130)". The descriptive statistics of the standard scores are provided in Table 2.0 below.

Table 2.0 *PPVT-4 standard scores – divided by variables*

Variable	Obs.	Mean	Std. dev.	Min	Max
PPVT st.score – *all participants*	12	60.5	12.78	34	77
PPVT st.score - *male*	9	57.11	12.99	34	77
PPVT st.score - *female*	3	70.67	4.04	67	75
PPVT st.score – *other language*	5	58.2	16.63	34	77
PPVT st.score– *only Norwegian*	7	62.14	10.37	49	75

With a mean standard score of 60.5, the Norwegian pupils are found in the "extremely low score" category. Only four of the Norwegian pupils had a standard score of 70 or above, leaving them in the "moderately low score" category. We can see that the girls ranged from 67 to 75 in PPVT standard score, leaving a mean score of 70.67. Compared to the boys' range from 34 to 77 and a mean score of 57.11, we can establish that the girls scored higher and with less variation than the boys. As seen in section 4.1 above, the boys generally encounter more English through extramural activities than girls, yet girls score a higher score than boys in vocabulary tests. However, the low number of female participants makes it difficult to generalise the results. In addition, we can see no big differences in the mean PPVT standard score, where the participants who speak another language scored 58 on average, and the participants who only speak Norwegian scored 62.14 on average. What is noticeable, however, is how the participants who speak another language both had the lowest and highest standard scores of all the participants, as seen in Table 2.0.

If we calculate their standard score based on native children aged 4 and 3, we get some other numbers.

Table 2.1 *PPVT-4 standard scores age 4 and 3 frequency*

Standard score age 4	Freq.	Standard score age 3	Freq.
49	1	68	1
65	1	82	1
67	1	84	1
72	1	88	1
73	1	90	1
77	1	95	1
81	1	99	1
86	1	104	1
89	1	106	1
91	1	108	1
95	1	113	1
97	1	116	1
Total	**12**	**Total**	**12**

Table 2.2 *PPVT-4 standard scores age 4 and 3 descriptive statistics*

Variable	Obs.	Mean	Std. dev.	Min	Max
PPVT standard score *age 4*	12	78.5	14.15	49	97
PPVT standard score *age 3*	12	96.08	14.24	68	116

The mean standard score compared to age 4 native children is 78.5. In this case, the mean standard score is in the "moderately low score" category, and four pupils are in the "low average score". The mean standard score compared to age 3 native children is 96.08, in the "low average score"-category. In addition, five pupils are here in the "high average score"-category. Only one pupil is in the extremely low score.

Looking at these different analyses, we can say that the Norwegian pupils, on average, have English vocabulary skills on the level of an average 3-year-old native speaker. I have, however, chosen to use the standard scores compared to a native 6-year-old speaker in the rest of my analysis.

4.3 Multiple regression analysis

In an attempt to analyse the variables, a multivariate regression analysis was made in STATA, using the formula below.

PPVT standard score$_i$ = α_0 + b_{1i} x β_{1i} Total minutes of exposure + b_{2i} x β_{2i} YouTube + b_{3i} x β_{3i} TV-shows + b_{4i} x β_{4i} music + b_{5i} x β_{5i} games + b_{6i} x β_{6i} Other activities + b_{7i} x β_{7i} gender + b_{8i} x β_{8i} language + b_{9i} x β_{9i} birthday + μ_i

Here *PPVT standard score* refers to the dependent variable measuring the participants' vocabulary standard score, and *i* represents the participants. b_{1i} is an expression of the regression coefficient of the independent variable β_{1i} "Total minutes of extramural exposure". Similarly, b_{2i} is the expression for the independent variable watching English YouTube videos. This logic follows for the entire equation, and μ_i is the residual, which detects other factors not controlled for.

The aim of using a multivariate regression analysis was to see if the data collected had any statistically significant values. If that is the case, it would be possible to see correlations between the dependent and independent variables. Ideally, one would see clear patterns in the participants´ extramural English exposure and vocabulary knowledge. Therefore, in addition to the independent variables mentioned above, another independent variable was added showing the total minutes each participant spent on extramural activities. The result of the analysis is seen in Table 3.

Table 3.0 *Multiple regression analysis*

	Coefficient	Std. err.	T	P > |t|
Total minutes of exposure	0.2	0.104	1.92	0.151
YouTube	-0.033	0.127	-0.26	0.810
TV-shows	-0.333	0.237	-1.41	0.254
Music	-0.198	0.083	-2.38	0.097
Games	0.011	0.107	0.10	0.924
Other activities	0	(omitted)		
Gender (0=male, 1=female)	-2.782	11.166	-0.25	0.819
Language (0=other than Norwegian, 1=only Norwegian)	26.064	14.539	1.79	0.171
Birthday (0=after August 1st, 1=before August 1st)	-28.697	10.518	-2.73	0.072
Constant	29.277	17.857	1.64	0.200
N	12			
Adjusted R^2	0.45			

As seen above, none of the variables meets the requirement of a p-value below 0.05. With an observation number of 12, this is not surprising, as the number is quite low for statistical analysis. However, some of the variables are more significant than the others. For example, listening to music has a significance value of 0.097. Therefore, it is surprising that the B-coefficient is negative, meaning that the more music the participants listened to throughout the week, the lower their PPVT standard score was. The same tendencies can be found in the variables "YouTube" and "TV-Shows" as well, even though their p-value is quite high. What is somewhat interesting, however, is how the total minutes of exposure throughout the week has a positive B-coefficient, meaning that there are tendencies that more exposure gives a higher score on the standard score. The "other" variable was omitted in this regression analysis due to collinearity. The adjusted R^2 is 0.45, meaning that this model explains 45% of

the variance in the dependent variable, which is very high. Had the number of observations increased, it is probable that the adjusted R^2 would decrease.

Since none of the variables show up as statistically significant in the multiple regression analysis, the data was analysed via bar graphs, scatter plots and correlation analyses.

4.4 Total exposure and standard score

When it is impossible to receive a significant result from regression analysis, graphs and correlation analyses can explain how the variables can correlate and affect each other. To be able to analyse the correlation between the dependent variable of the PPVT standard score and the independent variable of the total amount of hours, the participants were exposed to English during a week, a two-way scatter graph was created. It must be noted that the variable "totalhrs" shows the total amount of *hours* of exposure the participants get and is used here to provide a better graphical representation. This does not alter the result, as the total minutes of exposure variable is a recode of the "totalhrs" variable.

Figure 1.0 *Total English extramural exposure and PPVT standard score*
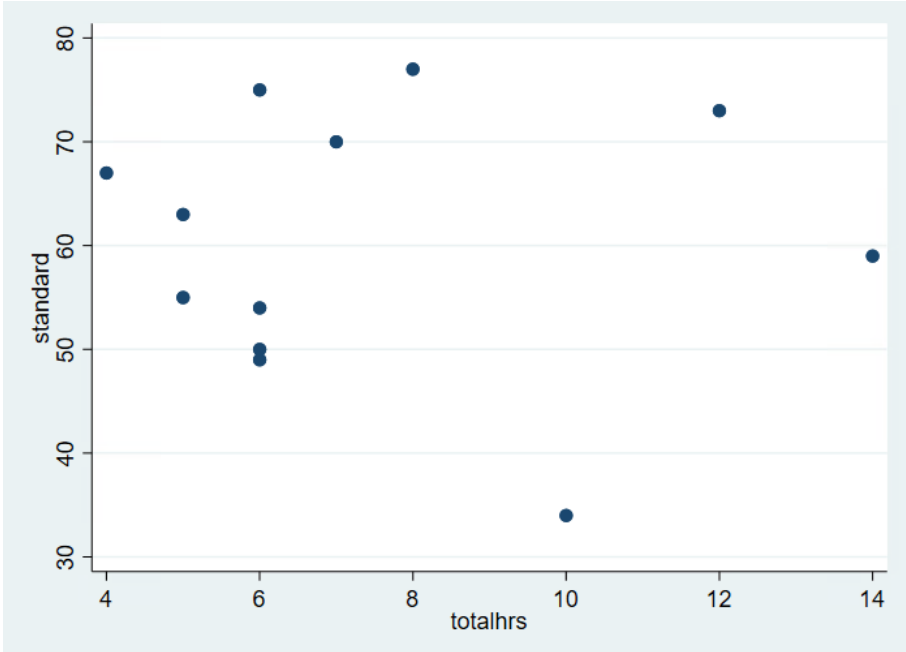
The x-axis shows the total hours the participants were exposed to extramural English within a normal week. The y-axis shows the PPVT standard scores. What is evident in this graph is how the participant with the highest amount of exposure scores one of the lowest scores. This is surprising because the regression analysis showed a positive relationship between the

amount of exposure and vocabulary score. The participant with the lowest standard score reported that they were exposed to extramural English on an average of 10 hours a week, which is the third highest total of exposure. The participants who scored the highest standard scores varied between six and twelve hours of exposure a week. The scatter graph shows how the variation predominantly spreads between four and eight hours of exposure, suggesting that it is more common in the selection to have a lower total exposure time. If we only look at the section of four to eight hours of exposure, it becomes clear that the participants with the highest standard scores also have the highest exposure time. Perhaps this is a more realistic view, as most of the scores are scattered around this area. Yet, there is still some variation in whether exposure time is relevant to the participant's vocabulary score.

When attempting to run a correlation analysis in STATA, the variable "totalmin" was used instead of "totalhrs". The result of the correlation analysis showed a negative correlation of -0.0379. The correlation can be said to be strong if the correlation coefficient is close to -1 or 1. In this analysis, the number is close to 0, and hence it is not plausible to say that the correlation between the total exposure time and the standard score is strong. Although the correlation is weak, we can see a negative correlation tendency, denoting that the more the participants are exposed to extramural English, the lower they score on the PPVT. This is interesting, as the regression analysis had a positive b-coefficient. It is difficult to conclude with anything with such a low correlation coefficient. Thus, looking at the graphs in this situation is more interesting.

4.5 Different variables and standard score

Although the total exposure was difficult to analyse, it can also be interesting to look at the different variables alone.

4.5.1 YouTube

The scatter graph for the YouTube variable (Figure 2.0) was interesting to make, as the observations were widespread and yet somewhat clustered. However, the data were collected using close-ended questions with multiple scaled options. Because the alternatives are in intervals of 1-2 hours per alternative, it might result in clustered answers like the ones below.

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Figure 2.0 *English YouTube exposure and PPVT standard score*
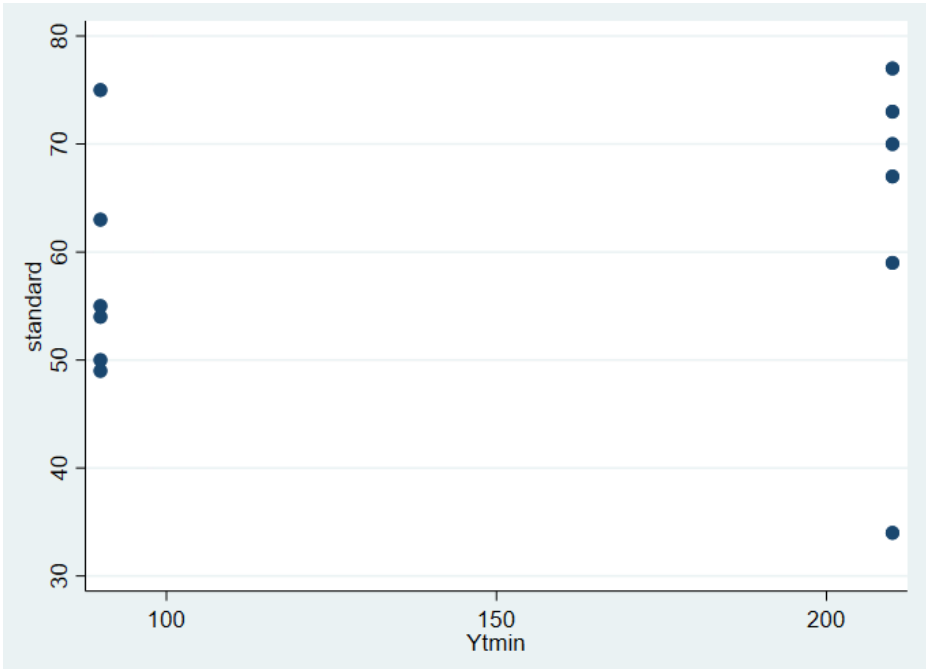
The observations were either 90 minutes a week or 210 minutes a week. Even more interesting is how six observations are in each category. In addition, the results from the vocabulary test are widespread, and there are no clear tendencies when looking at the graph. It seems that both the participant with the highest standard score and the participant with the lowest standard score had an average total of 210 minutes of YouTube exposure per week. A correlation analysis was made to attempt to see a clearer tendency, as seen in Table 5.0.

The correlation coefficient in the analysis showed a result of 0.2315. As written in section 4.4, the closer the coefficient is to -1 or 1, the stronger the correlation. The correlation between exposure to YouTube and the standard score cannot be said to be strong, as the number is closer to zero than it is to one. However, we can see that the correlation is positive. That is, the more the participants watched YouTube, the higher their score was on the PPVT.

4.5.2 TV

Watching English TV shows was another variable that was analysed through graphs and correlation. In Figure 2.1, we can see the spread in observations.

Figure 2.1 *English TV-show exposure and PPVT standard score*
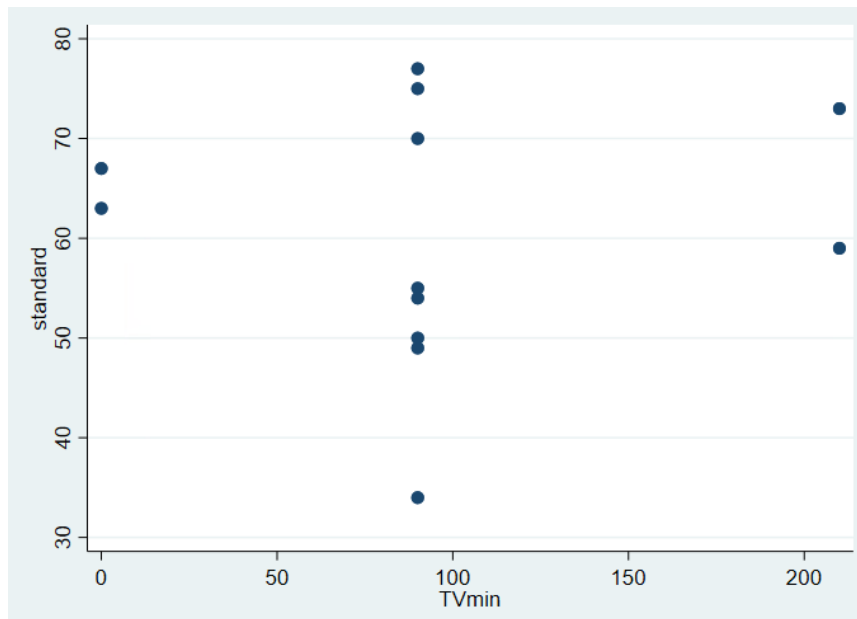
The variation is somewhat more widespread than with the YouTube variable above. In addition to the observations of 90 minutes and 210 minutes, two participants reported that they do not watch English TV shows at all. On the other hand, two participants reported watching an average of 210 minutes of English TV shows per week. The eight other participants reported watching an average of 90 minutes of English TV shows weekly. In this category, we can find both the highest-scoring and lowest-scoring participants. The participants who either watch the most English TV, or the least English TV, are all scoring in the upper section of the scoring interval.

The correlation analysis did not provide a strong correlation. Although it is very weak, the coefficient shows a positive number of 0.057. It can be assumed that the standard score is higher the more the participants watch English TV, even though the correlation is too weak to conclude anything.

4.5.3 Music

The music variable is the only variable where it is reported more than 210 minutes a week of exposure.

Figure 2.2 *English music exposure and PPVT standard score*
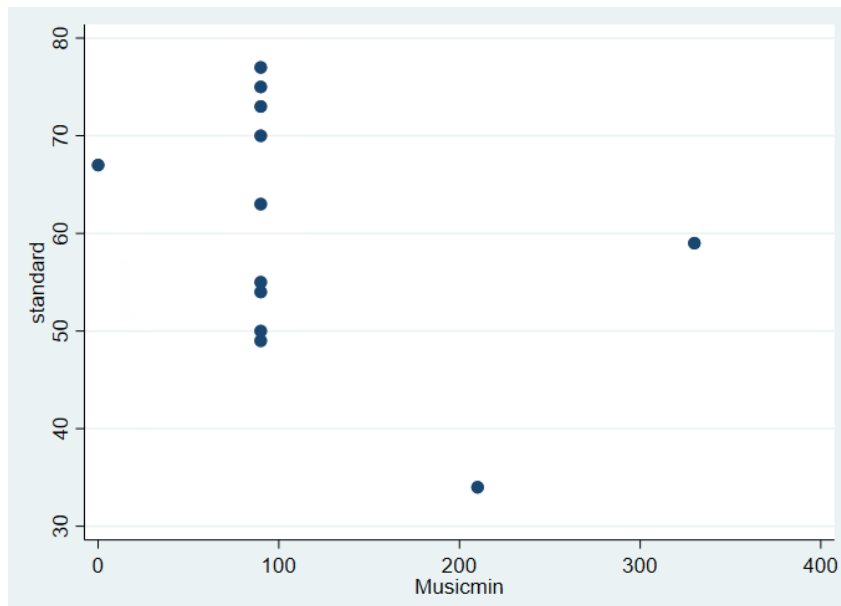
As shown in Figure 2.2, although the spread is wider than the preceding variables, it is still clustered around 90 minutes. Only three participants have reported another number, and it is hence difficult to generalise. What is yet again interesting is how the participant with the lowest score reported the second-highest exposure time.

The correlation analysis shows a correlation of -0.358 - a number closer to zero than to one, even though it is closer to one than the previous analyses. The correlation is not strong enough to be able to conclude with a correlation, but we can assume, based on the negative coefficient, that the correlation is negative. That is, the higher the standard score, the less they listen to music.

2.5.4 Games

Finally, the games variable is analysed using the scatter graph and correlation analysis.

Figure 2.3 *English gaming exposure and PPVT standard score*
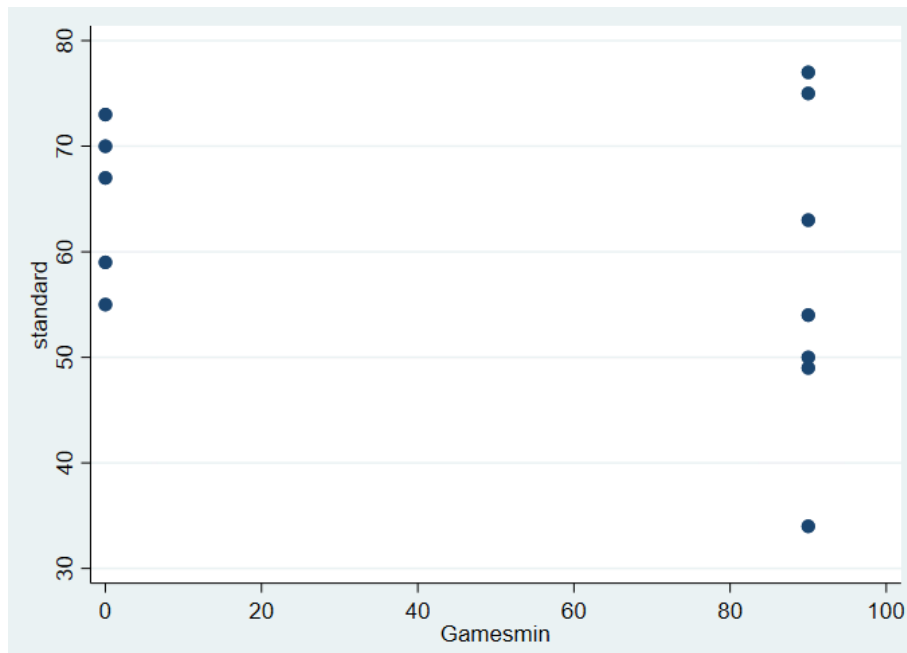
The spread is similar to the spread of the YouTube variable, except that it is five participants who have reported that they do not play English games at all and seven participants who have reported that they play English games for an average of 90 minutes a week. Again, we can see that both the highest- and lowest-scoring participant reports the highest exposure time. In addition, the three other lowest-scoring participants have reported the same. Based on this selection, we can assume that playing English video games has a negative effect on the standard score.

The assumptions above are confirmed by the negative correlation coefficient of -0.297, even though the coefficient is too small to be of any significance.

In conclusion, it is difficult to generalise the data from the research, as the observation number is low. However, it is possible to see some correlations and tendencies in the dataset that can be a foundation for further discussion below.

5.0 Discussion

5.1 How much extramural English exposure do Norwegian first-graders receive?

The first research question of this study concerns the extramural English exposure Norwegian first-grade pupils encounter outside of the instructed English teaching in school. Results from

the survey distributed to the participants' parents indicate that the pupils spend an average of approximately 435 minutes per week, or seven hours and fifteen minutes, on activities where they encounter the English language. Interestingly, this is nearly ten hours less than reported for American children up to the age of eight and Swedish ninth-grade pupils in Scalická et al. (2019) and Sundqvist (2009). However, it is important to acknowledge that these numbers were calculated from a mean of an interval, and hence does not represent the exact number of exposure. Thus, the accurate number can be higher or lower, depending on whether the participants' exposure is closer to the higher or lower end of the categories. Out of the activities listed, the pupils were exposed to English through YouTube the most, followed by music and TV shows. On average, the participants reported watching YouTube for 150 minutes per week, and some of the participants reported watching YouTube for a total of 210 minutes per week, which is about three hours and 30 minutes. The high amount of exposure through YouTube is by no means surprising. As seen in the survey "Barn og medier" from Medietilsynet (2020b), 72 per cent report that their child between the age of one and five watches YouTube, and 24 per cent report that their child watches YouTube every day. Compared to Brysbaert, De Wilde and Eycksman (2018), who found that more than 300 of their 800 Belgian-Dutch-speaking participants between the age of nine and twelve watch YouTube daily, we can assume that YouTube is a big part of the Norwegian first-grade pupils' everyday-life as well. We cannot say for sure, however, if the videos are in English or another language. Many videos on YouTube are in Norwegian or a different language. However, there is reason to believe that many of the videos either encounter English in some way or are solely in English. The difference between the native Norwegian speakers and the multilingual participants is not too evident. The multilingual children report watching YouTube for an average of 162 minutes per week, compared to 141 minutes per week for the native Norwegian-speaking children. What is more interesting is how the female participants are reported to watch YouTube for an average of 170 minutes a week, compared to 143 minutes a week for the male participants.

Music is the second most popular extramural English activity, with an average of 112.5 minutes weekly. We can compare this to the data provided by Statistics Norway (2022), that Norwegian teens between the ages of nine and fifteen report that they listen to music for an average of 43 minutes daily. This statistic does not account for whether the music is in English or another language, so it is reasonable to believe that some of the reported time is also spent listening to non-English music. If we look at the statistics from the Norwegian Ministry of Culture (2019), on the other hand, we see that Norwegian recorded music is

decreasing after the introduction of streaming services such as Spotify. It is hence reasonable to believe that a sizeable amount of the music is in English. However, the participants in the current study are younger than those in the statistics from the Norwegian Ministry of Culture (2019), and the data are thus not entirely comparable.

Nevertheless, it is interesting to see whether the reported exposure of the participants in this study can be comparable to the average population. A statistical difference worth mentioning is how the male participants report listening to English music for an average of 130 minutes a week, while the female participants only report 60 minutes per week on the same variable. The low number of female participants might explain this, but it is still interesting to see that the exposure time is more than doubled for the male participants. In addition, participants who only speak Norwegian at home have an average exposure time to English music of 124.29 minutes per week, compared to the multilingual participants who report an average of 96 minutes. However, the difference is not big enough to provide us with any information other than that both groups listen to music below the average for Norwegian nine- to fifteen-year-olds, as reported by the Statistics Norway (2022) report.

The participants' parents also report that their child spend an average of 95 minutes per week watching English TV shows. This equals about 15 minutes a day and is far below the reported data from Statistics Norway (2022) which shows that nine- to fifteen-year-olds watch TV shows for about one hour a day. However, this statistic does not account for the language in which the TV shows are; thus, the statistics for English TV shows might be much lower. If we look at the study by Sundqvist (2009), the amount of TV-watching in English is much lower than the statistics for watching television in general. Swedish ninth-graders report watching English television, both with and without subtitles, for about 3.5 hours a week. This equals about thirty minutes daily and is thus half the time reported in the Statistics Norway (2022) survey. In addition, five- and six-year-olds might generally watch less television than the older children, especially streamed TV shows, because they are more dependent on their parents to find what they want to watch. The female participants' parents report that their children watch English TV shows about 45 minutes less than the male participants. However, the low number of female participants compared to male participants might alter the data.

What is more remarkable is the difference between the native Norwegian-speaking participants and the multilingual participants. The latter is reported to watch English TV shows less than half of the amount that the native Norwegian-speaking participants do. One possible explanation might be that the multilingual participants have more options outside of English TV shows, for instance, in one of their other languages than Norwegian. As seen in

section 2.5 above, English is widely accessible through audiovisual media and is often not dubbed when the original language is English. Hence, native Norwegian-speaking children have fewer options in other languages than English because fewer TV shows are dubbed in Norwegian. This is supported by Peters et al. (2019), who found that EFL learners from countries where English TV shows are shown in the original language and with subtitles watch more English television than learners from countries where the TV shows are dubbed into another language.

Some of the most remarkable results from the data collection was the small amount of time reported for playing digital games in English. Only seven out of the twelve participants reported that they spent any time on English games, and these participants all reported the lowest possible exposure time of 90 minutes per week. This gives us an average of 52.5 minutes a week, less than ten minutes daily. This does fit the statistical result mentioned in section 2.3.3, where 52 per cent of Norwegian children between the age of one and five are reported to play games of any sort. Still, based on my experience and observation, it seems a little low that participants who play English games only play for 90 minutes a week. Jensen (2017) found that young Danish EFL learners played English computer games more frequently, with about 18 minutes a day. It is interesting to see how the female participants report playing English games half as much as the male participants. This can be supported by Medietilsynet's (2022) report about gaming, where only 59 per cent of girls are playing games, in contrast to the boys, where 92 per cent play games. However, the difference is said to increase with age and should hence not be as significant when the children are as young as the participants in this survey. On the other hand, Jensen (2017) reported that the young Danish male participants of the study played English games about five times more than the equivalent female participants. Perhaps the difference between the gender is as significant at a young age as it is when the children are older.

As we can see in the discussion above, some differences exist between families with Norwegian as their sole communication language and families with other communication languages at home. Because of the high number of participants speaking another language at home, these differences may originate in a possible confusion when answering the survey. The survey and the information letter were both written in Norwegian and might thus have been more challenging to read for parents with minority backgrounds. Some of the participants reported a considerably higher amount of exposure than the others. As we saw in sections 4.4 and 4.5, these participants did not necessarily score better than the others. Because of this contradicting previous research, it is reasonable to believe that either the

participants with the highest exposure time have misunderstood the survey and answered more than what is true, or on the contrary, that the other participants have reported a much lower exposure time than the reality. It is, of course, not possible to give a definite answer to this, and the discussion above is solely based on speculations and assumptions.

Even though this study only investigates exposure to English extramural activities, it is remarkable to see how much time the children spend on different media throughout their week. It is highly possible that they spend even more time on media containing other languages as well. The EU Kids Online report (2020) mentioned in section 2.6 shows that Norwegian children spend the most time online compared to 18 other European countries. Although the survey asked children from the age of nine to sixteen, it is reasonable to believe that some of the statistics can also be directly transferred to young children.

Not all the extramural activities above require the use of screens, but even if we remove "music" and "other activities" from the results, we are still left with 298 minutes of screen time per week, which is a little less than 45 minutes a day. The high amount of screen time will possibly only increase during the next decades. Still, it is important to be aware of the harm it can do, especially to the developing brains of children around the age of the participants in this study. Skalická et al. (2019) mentions how significant screen time in four-year-old children can provide less understanding and comprehension of emotions after only two years. Even though digital technologies can help, for instance, second language acquisition, as seen in section 2.3, one must not let screens and digital media compromise the development of emotional and cognitive skills in children. In addition, social interaction with, for instance, the children's parents or other human beings is essential in the early socialisation process and should not be replaced by screen time of any sort.

5.2 How do Norwegian first-graders score on PPVT testing?

The second research question of this study concerns how Norwegian first-grade pupils score on the PPVT-4 test in relation to native speakers and earlier research. As seen in section 4.2 above, the participants' standard scores were analysed comparatively with native-speaking 6-year-old children. When using the calculation table on the PPVT -4 scoring form, it was clear that the Norwegian participants scored in the "extremely low score" category. This is by no means surprising, as the participants had only participated in about two months of instructed English teaching prior to the testing. What is interesting, however, is that when the numbers were compared to native speakers of three years old, the Norwegian pupils were placed in the

low average and high average scores. In other words, the Norwegian first-graders had a vocabulary comparable to an average native English-speaking three-year-old. It might not seem much at first, but if we compare it to how many words a Norwegian three-year-old knows in Norwegian, it is quite a lot.

Even more interesting is the fact that when Dahl and Vulchanova (2014) conducted their research on Norwegian first-graders in 2014, they had a score equivalent to a native speaker of the age of two years and four months after about six weeks of school. In addition, the score had only increased to an equivalent of two years and seven months after eight months of instructed English teaching. It can look like Norwegian first-grade pupils are now scoring higher on the vocabulary test than in 2014. One should, of course, be careful with drawing any conclusions here, as this correlation has not been statistically tested. It is, however, interesting to look at some possible explanations as to why the results are so different.

One explanation could relate to the amount of screen time and, thus, the availability of English, which has increased during the last decade. According to the EU Kids Online survey (Smahel et al., 2020), for many countries, the average screen time per day has doubled from 2010 to 2020. Although the participants in Dahl and Vulchanova's (2014) study were tested in 2013-2014, it is reasonable to believe that the average screen time was significantly lower when they tested their participants compared to the participants tested in 2022. When we know that 72 per cent of children between the age of one and five watched YouTube in 2020, as reported in the report "Barn og medier" from Medietilsynet (2020b), we can assume that this number was much lower in 2013-2014. We can also assume that the amount of exposure to English online increases relative to the increase in screen time in general. Perhaps this escalation of online presence and screen time has positively affected Norwegian first-grade pupils' vocabulary knowledge.

When we look at earlier research, we see that extramural activities involving screen time, such as watching television and using the computer for gaming and watching videos, have positively affected the participants' vocabulary knowledge. Although many previous studies have included participants of older age than the current study, they have in common that the extramural activities have contributed to some positive effect on vocabulary knowledge, see for instance, Peters (2018), Sundqvist (2009) and Brysbaert et al. (2018). In addition, we can more directly compare the results from Jensen (2017), who concluded that computer gaming in young Danish learners between the ages of seven and nine positively affected vocabulary knowledge. Although Dahl & Vulchanova (2014) assumed that

extramural activities did have little to no effect on their participants' vocabulary knowledge, it can look like this should be more thoroughly researched now that extramural English is even more accessible than in 2013-2014.

Furthermore, it is probable that the vocabulary knowledge already acquired before starting school varies greatly among the participants. Busby (2020) found that even after completing at least 11 years of English education, Norwegian university students' English vocabulary knowledge varied massively. Extramural English is believed to be a strong predictor for better vocabulary knowledge. Because the instructed English in school follows the same curriculum, it is reasonable to believe that the amount of extramural English affects vocabulary knowledge as such (Busby, 2020). This might also be true for the participants in the current study, and it would be interesting to investigate this further. Additionally, the high amount of English-Norwegian cognates can make the PPVT-4 test easier to answer for the native Norwegian-speaking participants. Because words like "bus", "cup", and "foot" are cognates, as discussed in section 2.5, and it makes it easier for the native Norwegian-speaking participants to connect the meaning of the Norwegian word to the English word. Although the difference between the participants who only speak Norwegian at home and the participants who speak another language is minor, with a small advantage for the native Norwegian-speakers, the high amount of English cognates in Norwegian might have influenced the score. Interestingly, however, the word "drum" was only answered correctly by three participants, despite its cognate status to the similar word "tromme" in Norwegian. Nevertheless, this is an exception, and most or all participants answered the other obvious cognates correctly.

In this study, the statistical analysis did not find any significance in the relation between exposure to extramural English and vocabulary score, probably because of the low number of participants. Nevertheless, it is possible to look at some potential correlations using the scatter graphs presented in sections 4.4 and 4.5 above. What is noticeable when looking at Figure 1.1 in section 4.4 is how the participants with the highest vocabulary score have some of the lowest amounts of exposure to extramural English. This shows that the relationship between extramural English activities and vocabulary scores are not as straight forward as initially thought, and was by far the most surprising finding of the current study. When the graphs for the individual activities are taken into account, we get a more nuanced picture of it all. It seems that four of the five participants with the highest vocabulary scores watch English YouTube videos the most. This is more comparable to the initial hypothesis.

On the contrary, the participant with the lowest vocabulary score also had the highest exposure time to English YouTube videos. This is in contrast to earlier studies showing

language development, specifically in vocabulary knowledge, due to watching YouTube videos in a foreign language. The correlation between exposure time and watching YouTube videos appears to be a bit erratic, as there is no immediate relation between high exposure and high vocabulary score. This can be seen in the other activities as well. Interestingly, the participants with the highest and the lowest vocabulary scores watch the same amount of English television, about 90 minutes a week. This is neither the least nor the most exposure time reported in the survey. Watching television has been reported as an important factor in language acquisition (De Wilde et al., 2021).

Furthermore, studies have shown positive effects on vocabulary knowledge from watching television and that it positively affects both reading and listening skills (Peters et al., 2019; Peters & Webb, 2018). However, it is often associated with watching television with subtitles. This is not relevant for most first-grade pupils, as they are only in the beginning stage of learning to read. Thus, the positive effects might not be as great for younger students as it is for the older ones. This can explain why the two participants with the lowest exposure time to English television scored in the upper half of the vocabulary scores. The variable of listening to music also supports the surprising finding of a negative correlation between exposure to extramural English and vocabulary score. Most participants answered that they listen to English music for around 90 minutes weekly. The interesting discovery here is that the participant with the lowest vocabulary score reports that they listen to music for more than an hour more than four of the participants with the highest vocabulary scores. In addition, the participant who listens to English music the most – 330 minutes a week – has a vocabulary score in the middle of the range. It is not one of the lowest, but also not one of the highest. Previous studies have found some positive correlation between listening to English music and language development, although a smaller correlation than with, for instance, watching television.

Finally, the graph for playing English games shows us much of the same information as above. While the two participants with the highest vocabulary scores also reported the highest exposure to English games, the participants with the three lowest vocabulary scores reported the same amount. In other words, it is difficult to see any positive correlation between exposure and vocabulary knowledge, as the graphs depict varied results. Although previous studies have found positive correlations, these are often studies with older participants. One possible explanation for the variation found in this study might be that the participants are too young for extramural activities to affect their vocabulary knowledge. Because of the lack of studies examining the effect on young children, it is challenging to

know whether the results portray the reality or if it is limitations in this study that have created surprising correlations and assumptions. However, in Raviv & Arnon (2018), we can read that while auditive learning stays consistent from infancy to adulthood, visual learning improves with age. Hence, it might not be that the visual aid from watching videos and television is as helpful at the young age of the participants in the current study compared to older participants in other studies.

5.3 Limitations

As with all research, there are some limitations to be discussed. It is difficult to provide proper experimental research with the limited time and resources available in master thesis research. This study had only 12 participants, making it challenging to provide statistical analysis on the quantitative data collected. Additionally, the selection was not evenly divided between the genders, which again made it difficult to see any correlations between male and female participants. The participants needed to consent to both parts of the study – both the survey and the PPVT-4 testing. This might have made the threshold higher for the participant to consent than if it was only a survey. However, to investigate the hypothesis, it was important that they agreed to both.

Another limitation is whether the participants' parents have answered accurately in the survey. This is very difficult to investigate, and self-reporting surveys will always be risky. It is plausible that the topic of children's screen time, which is closely connected to the activities in this study, is sensitive. There is a lot of information about how screen time can be harmful to children, and hence it might be some stigma around children having a lot of time online or in front of a screen outside of school. This can again lead to the parents reducing the real exposure time when answering the survey. It was interesting to see the spread in how much time the children encounter extramural English activities, which again leads to the possibility that some of the participants have either reported a lower or a higher exposure time than the reality. Moreover, it is challenging to measure the exact exposure to English extramural activities when the alternatives in the survey are listed as intervals. The actual exposure time can, for instance, be closer to the higher end of the categories, making the numbers when recoding the intervals to minutes less accurate.

Additionally, there are some limitations considering the PPVT-4 test used to measure the participants' vocabulary knowledge. The test is developed to test native speakers of English, and thus might not fit as well for ESL speakers. The words are considered

appropriate for native learners but might not be the ones we hear in extramural English or even in instructed English teaching in an ESL classroom. For instance, very few of the participants chose the correct pictures for the gerunds "reading", "jumping", "painting", and "throwing". In Norwegian, there is no equivalent to gerunds in English, and hence it might be difficult to understand. Perhaps the verbs in infinitive would be easier to understand? Furthermore, the words are not necessarily used as much since they represent actions. It might be the case that the actions are performed but not orally articulated in many extramural English activities. Some other words like "juggling", "fence", "square", and "arrow" were difficult for most participants as well. They are words that might not be as frequent as, for instance, "dog", "bus", and "cup". Finally, the PPVT-4 only tests receptive vocabulary, and thus it is difficult to know whether the participants can produce the vocabulary that they recognise. However, it does not need to be a requirement to be able to produce a word to have knowledge of it.

5.4 Pedagogical implications and suggestions for further research

The findings in the current study could have some impact on the pedagogical field as well as the linguistic field. Firstly, teachers must be aware that their pupils are also being exposed to English outside the classroom. To investigate this as a teacher would provide useful information when deciding topics and planning the teaching, as it would be possible to focus less on the things that they already know and more on the things that the extramural activities do not cover. Additionally, I believe that it is important that teachers are interested and invested in the everyday life of their pupils, and especially what influences them when the teachers are not around. Moreover, teachers must be aware of the difference in the amount of extramural exposure and English vocabulary knowledge in general. Although it is feasible to believe that many pupils are exposed to a lot of extramural English, it might not be the case for everyone. Furthermore, I believe it is important to be aware of the possible downsides of extramural English and to provide the pupils with the best possible tools to be aware of the implications and advantages of extramural English activities. Finally, it is critical that teachers are aware of possible differences in genders and linguistic backgrounds, as it can provide valuable information about the pupils' knowledge and habits outside of class, as well as their needs in the multilingual classroom (Dahl & Krulatz, 2016).

There are some things which could be improved or done differently in further research. Most importantly, it would be interesting to see a larger scale research on the topic

of whether exposure outside of the classroom does make a statistical difference in the vocabulary knowledge of Norwegian first-grade pupils. Further research should include a larger, and perhaps more diverse, sample of pupils. In addition, it would be interesting to see whether the different activities impacted this difference, if there is one. It should include a more in-depth survey, where it is possible to draw better conclusions from the answers. Furthermore, it could be accounted for the English teaching they receive in school and if they receive any as early as kindergarten. Further research could focus on children over time and their exposure to English and English acquisition throughout the first years of their lives. If the research had been comprehensive enough, I believe it could provide some interesting insight into Norwegian pupils' English acquisition, that in turn, could help the development and structure of English teaching in Norwegian schools. Unfortunately, there is very little research on the youngest pupils and their English acquisition. Thus, it would be fascinating to see some data on how they are affected of the large availability of English through the increasing digital presence in their lives.

6.0 Conclusion

This study used the data collected from a questionnaire and a vocabulary test to investigate the habits in which Norwegian first-grade pupils have regarding exposure to extramural English. The aim of the current study was to look at how much extramural English exposure Norwegian first-graders receive, as well as how they score on vocabulary testing and if this can be related to the exposure mentioned above. While the sample was too small to draw any statistically significant conclusions, it was possible to look at the data collected and how they relate to each other mainly through graphs and correlation data. The study found that the participants (n=12) were exposed to extramural English for an average of seven hours and fifteen minutes a week, or about an hour a day. In addition, the study found that they were exposed to English through YouTube the most, followed by music, television, and gaming. It is clear that the participants spend a lot of time online or in front of screens, even when they are five or six years old. The female participants reported lower exposure time than the male participants overall, except for the variable "YouTube", where they reported about thirty minutes higher exposure time than the male participants. The multilingual participants reported less exposure time to both TV and music, but in turn, they reported a higher exposure time watching YouTube and gaming. Furthermore, the PPVT-4 testing results confirmed that the participants had an English receptive vocabulary knowledge comparable to an English

native speaking three-year-old. This result is higher than what was found in Dahl & Vulchanova's (2014) study nine years earlier. Interestingly, the study found no correlation between a high vocabulary score and high exposure. Contrarywise, it was found that the participants with the highest amount of exposure time had some of the lowest vocabulary scores. This is surprising, as former research suggests that extramural exposure positively affects English knowledge. The female participants scored significantly higher on the vocabulary test than their male counterparts, even though they had lower exposure time on all variables except YouTube. The multilingual participants scored slightly lower than the native Norwegian-speaking participants, but the difference is not big enough to draw any conclusions.

In conclusion, the study's findings were somewhat contrary to previous research. Although it is difficult to conclude with the low number of participants in this study, it seems that the previous findings of positive effects of extramural English exposure on English knowledge might not count for as young pupils as the ones investigated in this study. The possibility of generalisation, however, is a question for further research.

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Appendices

Appendix A – Questionnaire

1. Hva heter barnet ditt (fornavn og etternavn)?
   a. Åpent spørsmål: fyll inn
2. I hvilken måned har barnet ditt bursdag?
   a. Januar
   b. Februar
   c. Mars
   d. April
   e. Mai
   f. Juni
   g. Juli
   h. August
   i. September
   j. Oktober
   k. November
   l. Desember
3. Omtrent hvor mange timer i uken ser barnet ditt på engelskspråklige videoer på YouTube eller lignende nettsider?
   a. 0 timer
   b. 1-2 timer
   c. 3-4 timer
   d. 5-6 timer
   e. Mer enn 7 timer
4. Omtrent hvor mange timer i uken ser barnet ditt på engelskspråklige TV-program/filmer?
   a. 0 timer
   b. 1-2 timer
   c. 3-4 timer
   d. 5-6 timer
   e. Mer enn 7 timer
5. Omtrent hvor mange timer i uken hører barnet ditt på engelskspråklig musikk?
   a. 0 timer
   b. 1-2 timer
   c. 3-4 timer
   d. 5-6 timer
   e. Mer enn 7 timer
6. Omtrent hvor mange timer i uken hører barnet ditt på engelskspråklig lydbok?
   a. 0 timer
   b. 1-2 timer
   c. 3-4 timer
   d. 5-6 timer
   e. Mer enn 7 timer
7. Omtrent hvor mange timer i uken spiller barnet engelskspråklige spill på internett, mobil eller iPad/tablet?
   a. 0 timer
   b. 1-2 timer
   c. 3-4 timer

      d. 5-6 timer

      e. Mer enn 7 timer

8. Omtrent hvor mange timer i uken blir barnet ditt lest for på engelsk?
    a. 0 timer
    b. 1-2 timer
    c. 3-4 timer
    d. 5-6 timer
    e. Mer enn 7 timer

9. Møter barnet ditt engelsk i andre aktiviteter utenfor klasserommet?
    a. Ja
    b. Nei

10. Hvis ja: i hvilke andre aktiviteter møter barnet ditt engelsk utenfor klasserommet?
    a. Åpent spørsmål: fyll inn

11. Hvis noen, omtrent hvor mange timer bruker barnet ditt på disse aktivitetene i løpet av en uke?
    a. 0 timer
    b. 1-2 timer
    c. 3-4 timer
    d. 5-6 timer
    e. Mer enn 7 timer

12. Hvilke språk snakkes hjemme?
    a. Norsk
    b. Engelsk
    c. Annet

Appendix B – Consent form

<p align="center">Vil du/ditt barn delta i forskningsprosjektet
"Engelsk utenfor klasserommet"?</p>

Dette er et spørsmål til deg og ditt barn om å delta i et forskningsprosjekt hvor formålet er å undersøke om det er sammenheng mellom mengden engelsk 1.klassinger møter utenfor klasserommet og deres engelskkunnskaper. I dette skrivet gir jeg deg informasjon om målene for prosjektet og hva deltakelse vil innebære for dere.

Formål

Jeg studerer til å bli lektor i engelsk, og jeg skal i den forbindelse skrive en masteroppgave. Temaet for denne oppgaven er sammenhengen mellom mengden av det engelske språket elever møter utenfor klasserommet, og deres kunnskaper om engelske ord. Jeg ønsker spesielt å undersøke hvordan dette vises hos førsteklassinger som nettopp har begynt på skolen, og dermed har fått lite påvirkning fra skole og lærere foreløpig. Prosjektet vil innebære en spørreundersøkelse, der jeg ønsker kort informasjon om hvor mye engelsk eleven møter hjemme og utenfor skolen generelt. Dette kan være via TV, musikk, spill, YouTube eller andre arenaer der mye/noe av aktiviteten foregår på engelsk. Dette vil gi meg et bilde av omtrent hvor mye engelsk eleven møter utenfor klasserommet. Jeg vil i tillegg bruke en vokabulartest for å måle omtrent hvor mange ord eleven kan på engelsk. Ved å kombinere disse to metodene, håper jeg å få et godt bilde av sammenhengen mellom engelsk utenfor klasserommet og elevens engelskkunnskaper.

Hvem er ansvarlig for forskningsprosjektet?
NTNU – Norges Teknisk-Naturvitenskapelige Universitet er ansvarlig for prosjektet.

Hvorfor får du spørsmål om å delta?
Alle foresatte på 1.trinn får spørsmål om å delta. Det er hovedsakelig 1. trinn jeg tar for meg i oppgaven, og derfor sender jeg ut spørsmål til dere som foresatte. Det eneste kriteriet for å delta, er at eleven har startet i 1.klasse denne høsten.
Skolen har samtykket til dette prosjektet.

Hva innebærer det for deg å delta?
Hvis du velger å delta i prosjektet, innebærer det at du fyller ut et spørreskjema. Det vil ta deg ca. 5-10 minutter. Spørreskjemaet inneholder spørsmål om elevens møte med engelsk utenfor skolen. Hovedsakelig vil det spørres om hvor mange i timer eleven møter engelsk i forskjellige aktiviteter i løpet av en uke. Aktivitetene det spørres om er engelske videoer, tv-serier/filmer, musikk, spill og bøker/tekster. Dine svar fra spørreskjemaet blir registrert elektronisk. Spørsmålene besvares av deg som foresatt. Link til spørreskjemaet vil sendes ut på epost til de som samtykker i løpet av uke 42.

I tillegg vil det gjennomføres en kort vokabulartest, som skal hjelpe meg å måle engelskkunnskapene til eleven. Testen brukes kun for å se sammenheng mellom hvor mye engelsk eleven møter i hverdagen og deres engelskkunnskaper. Resultatene vil sammenlignes med svarene fra spørreundersøkelsen, og deretter anonymiseres. Resultatene vil behandles av meg, og vil ikke videreføres til lærere eller andre ansatte på skolen. Testen er helt uavhengig av skolen. Den består av bilder, og eleven blir spurt om å peke på det bildet den mener passer til ordet jeg sier på engelsk. Testen tar 10-15 minutter og vil bli gjennomført i løpet av skoledagen. Dersom dere ønsker mer informasjon om testen er det bare å ta kontakt med meg. Dere som foresatte har full rett til å få innsyn i testen og resultatene som foreligger dersom dere skulle ønske dette.

Det er frivillig å delta
Det er frivillig å delta i prosjektet. Hvis du/ditt barn velger å delta, kan dere når som helst trekke samtykket tilbake uten å oppgi noen grunn. Alle dine/ditt barns personopplysninger vil da bli slettet. Det vil ikke ha noen negative konsekvenser for dere hvis dere ikke vil delta eller senere velger å trekke dere.

Ditt personvern – hvordan jeg oppbevarer og bruker dine opplysninger
Jeg vil bare bruke opplysningene om deg/ditt barn til formålene jeg har fortalt om i dette skrivet. Jeg behandler opplysningene konfidensielt og i samsvar med personvernregelverket. Det er bare jeg og min veileder, Nicole Busby, som vil ha tilgang til disse opplysningene. Jeg vil erstatte alle navn og relevante kontaktopplysninger med en kode som lagres adskilt fra øvrige data. Jeg skal selv samle inn, bearbeide og lagre data, og det vil ikke bli gjort tilgjengelig for noen andre enn meg og min veileder.
Det vil ikke bli mulig å gjenkjenne dere når oppgaven publiseres. Kun relevante opplysninger som alder og kjønn vil bli publisert. Det vil ikke bli publisert hvilken skole eller by opplysningene er hentet fra.

Hva skjer med personopplysningene dine når forskningsprosjektet avsluttes?

Prosjektet vil etter planen avsluttes i slutten av desember 2023. Alt datamateriale vil anonymiseres når prosjektet avsluttes, og opplysningene som ikke er med i den endelige oppgaven vil slettes.

Hva gir oss rett til å behandle personopplysninger om deg?
Jeg behandler opplysninger om deg/ditt barn basert på ditt samtykke.

På oppdrag fra NTNU har Personverntjenester vurdert at behandlingen av personopplysninger i dette prosjektet er i samsvar med personvernregelverket.

Deres rettigheter
Så lenge du/ditt barn kan identifiseres i datamaterialet, har dere rett til:
- innsyn i hvilke opplysninger vi behandler om deg/ditt barn, og å få utlevert en kopi av opplysningene
- å få rettet opplysninger om deg/ditt barn som er feil eller misvisende
- å få slettet personopplysninger om deg/ditt barn
- å sende klage til Datatilsynet om behandlingen av deres personopplysninger

Hvis du har spørsmål til studien, eller ønsker å vite mer om eller benytte deg av dine rettigheter, ta kontakt med:
- NTNU ved prosjektansvarlig veileder Nicole Busby på epost (nicole.busby@ntnu.no) eller student Maren Helene Kalhagen på epost (marenhka@stud.ntnu.no) eller på telefon: 97 66 57 29
- Vårt personvernombud: Thomas Helgesen på epost (thomas.helgesen@ntnu.no) eller telefon: 93 07 90 38

Hvis du har spørsmål knyttet til Personverntjenester sin vurdering av prosjektet, kan du ta kontakt med:
- Personverntjenester på epost (personverntjenester@sikt.no) eller på telefon: 53 21 15 00.

Med vennlig hilsen

Nicole Busby   Maren Helene Kalhagen
(Forsker/veileder)   (Masterstudent)

Samtykke
Under finner dere en samtykkeerklæring som dere må skrive under på dersom dere ønsker å delta i prosjektet. Klipp ut seksjonen under og send med tilbake til skolen.

Frist for samtykkeerklæring: Fredag 14. oktober

(Klipp her)

Samtykkeerklæring

Jeg har mottatt og forstått informasjon om prosjektet Engelsk utenfor klasserommet, og har fått anledning til å stille spørsmål. Jeg samtykker til:

- at jeg deltar i spørreundersøkelse om mitt barn
- at mitt barn deltar i vokabulartest

Navn på deltaker (ditt barns fulle navn):

Jeg samtykker til at mitt barns opplysninger behandles frem til prosjektet er avsluttet

----
(Signert av prosjektdeltaker, dato)

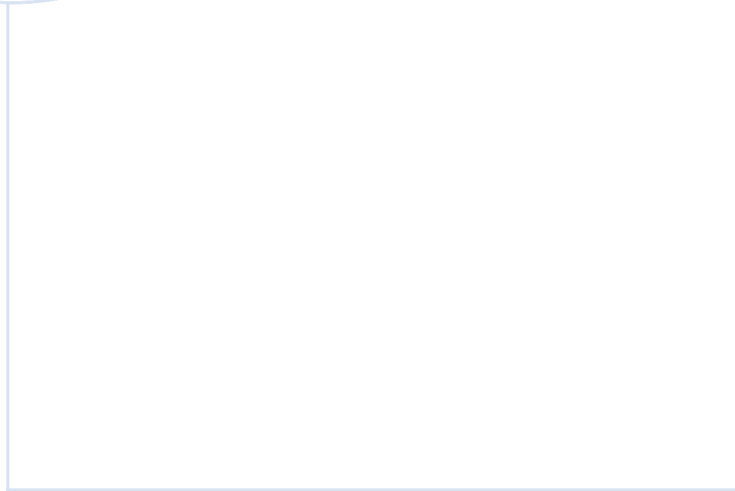
Appendix C – relevance for future profession

This master's thesis was written as a part of my Language Studies with Teacher Education program at NTNU. While working on my master's thesis, I have acquired a lot of knowledge on second language acquisition that I am sure will come in handy when working as an English teacher. I have been lucky enough to work as an English teacher at a primary school simultaneously to writing this thesis, and during the process I have become more aware of my own practice and how my pupils respond to English teaching in general. As a teacher in any subject, but perhaps especially in English, it is important to be aware of the influence of out-of-class activities. By being aware of this, I have been able to plan my lessons accordingly, and hence related the study more to my pupils' prior knowledge and their interests. Additionally, it has been helpful to be aware of first-grade-pupils' vocabulary knowledge, as it has made me more aware of what they might have already acquired outside of school, or even prior to starting school. With this knowledge at hand, it is possible to focus more on the aspects of English second language acquisition that are not as accessible in extramural activities. Although the current thesis has investigated first-grade-pupils' exposure to extramural English and their vocabulary score, I believe it is highly relevant in middle- and high-school as well. When being aware of how young children acquire their second language,

one can make sure that the focus is on the right things in later stages of the acquisition as well. In addition, because of the lack of research on young children, I have read a lot about older children or youths' exposure to extramural English. Thus, I have been made aware of the possible connections between extramural English and vocabulary knowledge in older pupils as well.

All in all, I believe that this master's thesis has helped me become more aware of my practice as an English teacher, and I look forward to use this newly acquired knowledge in my future practice as well.