

Digital gaming and other out-of-school L2 activities:

A mixed-method study of the relationship between extracurricular English language practices and English vocabulary and grammar skills in a cohort of Norwegian ninth graders

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Abstract

The present mixed-method study investigated the influence of digital gaming and other extracurricular English (EE) language practices on the English vocabulary and grammar skills of a group of Norwegian ninth graders. The participants ($n = 16$, ten girls and six boys) were aged 14–15. Quantitative data were gathered through language diaries, a productive vocabulary test, and a grammaticality judgment test, whereas qualitative data were collected through semi-structured interviews with seven of the participants. Previous research has found out-of-school English language practices, and digital gaming in particular, to positively correlate with English proficiency in young learners of English as a second language (Sundqvist, 2009; Sylvén and Sundqvist, 2012). The present study distinguished between ‘online’ (requiring communication with peers) and ‘offline’ (no communication with peers) gaming in the language diaries, with the aim of discovering potential differences in impact on the ninth graders’ English proficiency. Findings revealed statistically significant ($p < 0.05$) correlations between online gaming and productive vocabulary skills, and between total time spent on EE activities and productive vocabulary skills. Additionally, the language diary data revealed unexpected differences between the EE habits of male and female participants, with none of the girls spending any time on online gaming. Furthermore, the male participants attained higher vocabulary scores than the female participants. The difference between scores was however only marginally significant ($p < 0.1$). The qualitative data enabled triangulation of findings and interpretation of the quantitative findings in context.

Sammendrag

Denne studien undersøkte hvordan engelskferdighetene til en gruppe norske niendeklassinger ble påvirket av utenomfaglige aktiviteter som involverer engelsk. Det ble lagt spesiell vekt på å undersøke forholdet mellom digital spilling (såkalt «gaming») og deltakernes ordforråd og grammatikkunnskaper. 16 deltakere – ti jenter og seks gutter – var med i studien, som var en kombinasjonsstudie med både kvantitative og kvalitative elementer. Ved hjelp av en språkdagbok, en grammatikktest og en ordforrådtest ble kvantitative data samlet inn, mens formelle intervjuer med syv av deltakerne utgjorde de kvalitative dataene. For å kunne avdekke eventuelle forskjeller mellom «online gaming» (gaming der spillerne må kommunisere med hverandre) og «offline gaming» (gaming der spillerne ikke kommuniserer med hverandre) sin innvirkning på deltakernes engelskferdigheter, ble disse regnet som forskjellige aktiviteter i språkdagboka. Funnene viste statistisk signifikante ($p < 0.05$) positive korrelasjoner mellom størrelsen på deltakernes ordforråd og online gaming, og mellom ordforråd og samlet tid brukt på utenomfaglige engelskaktiviteter. Det ble også avdekket at jentene i studien ikke brukte noe tid på online gaming, men at alle guttene gjorde det. I tillegg til dette oppnådde guttene bedre resultater på ordforrådtesten enn jentene, men forskjellen var bare marginalt signifikant ($p < 0.1$). De kvalitative dataene gjorde det mulig å triangulere funnene, og å tolke dataene i kontekst.

Preface

Having taught English in a Norwegian lower secondary school for a few years, the process of learning a second language interests me greatly. When I came across a study by Swedish researcher Pia Sundqvist (2009) a couple of years ago, I was further intrigued, as the study had found extracurricular English language practices to improve the English vocabulary and oral proficiency of Swedish ninth graders. Similar Norwegian studies were however hard to locate. Inspired by Sundqvist's research and the lack of corresponding Norwegian studies, I decided to write my master's thesis on the relationship between out-of-school English language practices and the English proficiency of Norwegian 14–15-year-olds.

The process of writing this thesis has been comprehensive and demanding, but also greatly rewarding. The knowledge I have attained has both expanded my horizon and – importantly – been useful to my practice in teaching.

As the submission date is approaching, I would very much like to thank the people who have helped me along the way:

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1. Introduction

1.1 Background

In Norway, English is taught throughout all ten years of primary and lower secondary school and is considered one of three fundamental subjects¹ (Nilssen, 2014). Despite this, English has been assigned fewer hours than four of the five other core theoretical subjects, averaging only about two sixty-minute lessons per week (Utdanningsdirektoratet, 2016). At the same time, with the increasing digitalisation of society, several out-of-school activities now involve the use of digital devices and the Internet. As English is the dominant language of technology (Foyewa, 2015, p. 35) and the Internet (Q-Success, 2020), most young learners frequently encounter English in their spare time as well as in school². Several recent Swedish studies have found out-of-school English language practices to improve the English proficiency – and vocabulary in particular – of young learners of English as a second language (Sundqvist & Wikström, 2015; Sylvén & Sundqvist, 2012; Sundqvist, 2009), but it appears few similar studies involving Norwegian learners of English have been conducted. One qualitative study involving five Norwegian 16–17-year-old boys who were more competent readers in English than in Norwegian did however find that all these boys engaged in a variety of extracurricular English (EE) activities, and that English was their preferred out-of-school language (Brevik, 2016).

Among the different EE activities in which Swedish learners engage, digital gaming appears to have the greatest effect on English proficiency (Sundqvist & Wikström, 2015; Sylvén & Sundqvist, 2012; Sundqvist, 2009). Few, if any, studies have however differentiated between digital gaming in which players communicate with others (i.e. ‘online gaming’), and digital gaming not involving communication between players (i.e. ‘offline gaming’). Still, productive or ‘quality’³ activities have been found to produce greater learning outcomes than less productive activities (Sundqvist, 2009; Lee, 2017). This means that online gaming, which requires real-time communication and cooperation with peers, is likely to affect English proficiency to a greater extent than offline gaming, as the latter activity requires less language production.

¹ The remaining two are Norwegian and mathematics.

² Norwegian teenagers spend an increasing amount of time using digital devices, and in 2019, 63 % of ninth graders were found to spend more than three hours in front of a screen per day (Bakken, 2019, pp. 2, 59).

³ See explanation in section 2.7.

1.2 Aims and research questions

The main objective of the present study is to investigate how out-of-school English language practices affect the English vocabulary and grammar skills of a group of Norwegian ninth graders. Based on findings in similar studies, it is hypothesised that engaging in EE activities affects the participants' English skills, and that the relationship between EE activities and English proficiency is stronger for vocabulary than for grammar.

It is also hypothesised that online gaming, which is a highly productive activity involving real-time interaction and cooperation between players, is the activity that affects the English proficiency of the participants the most. The second objective of the present study is therefore to find out whether, and to what extent, online gaming has a greater impact on the participants' English skills than other EE activities. Online and offline gaming are, in other words, considered different activities in the present study.

The final objective of the present study is to gain more detailed insights into the ways in which the participants use English out of school. Data on this would provide context and detail to assist in the interpretation of quantitative findings, as well as valuable knowledge about the participants' own thoughts on learning English in and out of school.

These research aims have been condensed into the following two research questions:

1. How does extracurricular use of English affect the English vocabulary and grammar skills of a cohort of Norwegian ninth graders?
2. To what extent, if any, does playing online digital games that require communication with peers lead to greater improvement of English skills in the same group of Norwegian ninth graders compared to other extracurricular activities involving English?

To answer these research questions, data on the extracurricular English practices of a group of Norwegian ninth graders ($n = 16$) were collected through language diaries, and the vocabulary and grammar skills of the participants were measured using a productive vocabulary test and a grammaticality judgment test. Finally, seven of the participants were interviewed about their out-of-school English language practices.

1.3 Thesis outline

Including the present introductory chapter, i.e. chapter 1, this thesis is divided into six main chapters: Chapter 2 provides an overview of relevant theory on second language learning, including key definitions and theory on topics specifically related to the research (like L2 grammar and vocabulary learning), as well as a review of previous findings on L2 learning through digital gaming. Chapter 3 first outlines the methodological approach of the research, before providing more detailed information on the selection of participants, research design and methods used to perform statistical analyses. In the final section of chapter 3, the strengths and limitations of the study are reflected upon. Chapter 4 presents and explains all the quantitative findings in the present study; i.e. the language diary data, the vocabulary and grammar test results, and correlations between the variables. Tables and figures illustrating some of the findings are included in this chapter. Chapter 5 analyses and discusses findings in relation with relevant theory and previous findings. Here, the qualitative data provide additional information and context to the interpretation of the quantitative data. The quality, reliability and validity of the research are also discussed and assessed in chapter 5. Chapter 6 is the final chapter of the thesis. In this chapter, the main findings of the study are presented, and ideas for further research are proposed.

After the reference list, 10 appendices are included. The appendices comprise a sample of the language diary, the vocabulary and grammar tests, the interview guide, excerpts of the interview transcriptions, detailed quantitative data and a list of abbreviations and key terms. The appendices are included to give a more complete picture of the research process and findings.

The following chapter begins with defining key terms, before giving an overview of relevant second language learning theory.

2. Literature review

2.1 Definitions of second and foreign languages

The term ‘second language’ commonly refers to a language that is non-native, yet widely used or even an official language in a country or society. English, for instance, is a second language in Hong Kong, as it is an official language and widely spoken, yet secondary to the primary language of Cantonese. A foreign language, on the other hand, is a language neither socially nor officially prevalent in the learners’ surroundings – much like German in Norway, where it is an elective subject in many schools but not prevalent in society. Second language acquisition (SLA) encompasses the learning of both second and foreign languages (both commonly referred to as L2) and can be defined as the process of learning an additional language subsequent to having learned one’s mother tongue. As the term is not restricted to second languages only, it may refer to the third, fourth or any additional language an individual acquires (Saville-Troike, 2012, pp. 2–4; Ellis R. , 2008, pp. 5–6).

In Norway, English does not hold the position of an official language. Still it is prevalent in the everyday life of most Norwegians, both socially and in more formal contexts. Code-switching⁴, which entails ‘[switching] from one language to another within the same conversation’ (McGregor, 2009, p. 169), between Norwegian and English is common among younger Norwegians; social medias overflow with content in English; online gaming seems to have adopted English as its lingua franca; and TV and streaming services are channels through which the regular Norwegian citizen is frequently exposed to the English language. English is also taught throughout the entire ten years of compulsory school in Norway – albeit to a slightly lesser extent than Norwegian – and it is far from uncommon to encounter English subject matter or lectures in Norwegian higher education (Brandt & Schwach, 2005). Therefore, it can be argued that English is more like a second than a foreign language to most Norwegians, and in the present study it will be treated as such.

2.2 Explicit and implicit learning

When discussing language learning, it is convenient to make a distinction between explicit and implicit learning. A key reason for this is that successful native language acquisition and successful SLA depend on different respective factors. While implicit language learning is

⁴ Code-switching was first described by John J. Gumperz (Gumperz, 1964). See section 2.6 for further description of it.

sufficient in producing capable native language (L1) users, this is not necessarily the case with L2 users. To become a proficient second or additional language user, especially as an adult (or after the much-debated ‘critical period’ – the age at which an individual can acquire knowledge of and master a language in an effortless manner), explicit language instruction has been found to be central (Doughty, 2003, pp. 258–259; DeKeyser, 2003, p. 335). Explicit and implicit learning will be defined and further explained below.

Explicit language learning requires conscious effort over time and can be defined as the process of learning a language intentionally. It usually takes place in formal settings like school or language courses, but the term also encompasses conscious learning in which the learner seeks out information on their own without a teacher or instructor present. Most foreign language learning is explicit (Ellis R. , 2008, pp. 6–7; Ellis N. , 2015, p. 2). This description of explicit learning is similar to definitions of **intentional learning**, another term commonly used in language theory (Hulstijn, 2003, p. 349).

Implicit language learning is often described as unintentional or spontaneous language learning. Unlike explicit learning, it is believed to occur naturally and without putting conscious effort into the process – it is sometimes even claimed to happen ‘unconsciously’ (Hudson, 2000, p. 170), ‘without awareness’ (Ellis R. , 2008, p. 7), or more likely ‘without awareness of what is being learned’ (DeKeyser, 2003, p. 314). It should be noted that although conscious determination is – supposedly – absent from implicit learning, it is debated among researchers whether learning can take place sans awareness (Ellis R. , 2008, p. 7). A learner could, however, be intending to learn something but end up implicitly acquiring knowledge different from or in addition to what they were planning to learn (DeKeyser, 2003, p. 314). Children acquire their native language implicitly through exposure and through communication with the people around them (Hudson, 2000, pp. 121, 170). Definitions of implicit learning are comparable to those of **incidental learning** (Hulstijn, 2003, p. 349), and in this study the two terms may be used interchangeably.

Subsequent to Stephen Krashen’s introduction of the acquisition-learning distinction as a central hypothesis in second language learning theory (Krashen, 1982, pp. 10–11), the intuitive manner in which children are believed to learn their mother tongue has commonly been contrasted with the supposedly more demanding process of learning a second language. While second language acquisition is described as a complex process whose success is contingent on several factors, some of which are motivation, circumstance, instruction and cognitive ability (McGregor, 2009, p. 220; Chun & Frodesen, 2014, p. 3; Saville-Troike, 2012, pp. 5, 21), native

language acquisition is considered part of children's natural developmental process. Children 'pick up' their mother tongue as they mature, acquiring knowledge of the language spontaneously and without receiving instruction (Saville-Troike, 2012, pp. 19–21). Children's intuitive language learning process is often referred to as '**acquisition**', whereas adult second language learning – particularly that which takes place in a formal learning environment such as the classroom – is referred to as '**learning**' (Hudson, 2000, p. 170; Ellis R. , 2008, p. 7; Krashen, 1982, p. 10). However, as children may learn certain linguistic elements explicitly and L2 learners may acquire target language features implicitly (Harley, 2014, p. 160), these are not absolute definitions. Therefore, the terms 'acquisition' and 'learning' will in this study be used interchangeably. It should be noted that in recent years, learning a language – native or otherwise – has come to be regarded by a number of linguists as a process involving more than passive 'acquisition' (see for instance Halliday (1993)) – an argument which will be further addressed later in the current chapter.

Second language learners may then learn their target language either through a combination of implicit and explicit learning, or solely through explicit or implicit processes. The latter option may however leave a significant portion of L2 learners unable to progress beyond a basic level of second language competence, as certain linguistic structures have proved difficult for some to master without explicit instruction. The learners' vocabularies may expand, but their utterances tend to stay on a simple level in terms of grammar – typically lacking inflections and function words. Becoming an adept L2 user therefore appears, in many instances, to require parts of the learning process to be explicit (Ellis N. , 2015, pp. 16–18). However, even with explicit instruction, many learners remain unable to master complex grammatical structures (Ellis R. , 2008, pp. 91, 96).

2.3 Second language learning: General and relevant theory

Proficiency in a second language involves competence in a number of areas both within and outside the internal structure of language. A proficient second language user should have a sufficient vocabulary, functional grammatical knowledge and pronunciation that does not hamper communication, while also being aware of the cultural and pragmatic traditions of target language speakers (Chun & Frodesen, 2014, pp. 6, 17). While more detail on acquisition of second language vocabulary and grammar can be found in sections 2.4 and 2.5, the focus of the current section will be on general second language acquisition theory and on relevant theory of L2 pronunciation, pragmatics and cultural knowledge.

When writing about general second language acquisition theory, it seems appropriate to include some of Stephen Krashen's influential work. In 1982, he introduced five hypotheses on second language acquisition, of which the first, named **the acquisition-learning distinction**, and the second, named **the natural order hypothesis**, are mentioned and briefly described in sections 2.2 and 2.4, respectively. Also relevant to this study is **the input hypothesis**, which states that a learner at any given stage of the acquisition process needs input of 'language that contains structure a bit beyond our current level of competence' (Krashen, 1982, p. 21) to reach the next stage. This is referred to as $i + 1$, where i represents the current stage of competence, and $+ 1$ represents what is 'a bit beyond'. Context or other extralinguistic information facilitates the process (Krashen, 1982, pp. 20–21).

The input hypothesis can be related to **Vygotsky's Zone of Proximal Development (ZPD)**, which proposes that there is a 'distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers' (Vygotsky, 1978, p. 86). In ZPD, however, facilitation is explicitly interactional, as it is emphasised to be provided by another *person* rather than by 'context or other extralinguistic information'. Krashen's 'context' may of course include people as well as other elements; an important difference between his and Vygotsky's ideas, however, is their respective stressing of 'input' in contrast with 'interaction'. Today, the interactive and social aspect of language learning is receiving increasing attention (for instance, Thorne, 2012, p. 297), and **scaffolding** is now the term commonly used to describe the assistance provided by a more capable interlocutor (Ohta, 2000, p. 52). This term was introduced by Wood, Bruner and Ross in 1976 and described as a 'process that enables a child or novice to solve a problem, carry out a task or achieve a goal which would be beyond his unassisted efforts' (1976, p. 90).

Unlike children learning their mother tongue, learners of a second or foreign language bring previous knowledge of their native language (and possibly other languages) into the learning process. This knowledge inevitably affects the learners' L2 learning process, and its influence has traditionally been referred to as **interference** or **transfer**. However, as L1 knowledge has the potential of both facilitating and impeding L2 acquisition, terms like **positive** and **negative transfer** or the more neutral **cross-linguistic influence** have been coined (Odlin, 2003, p. 436; Ellis R. , 2008, pp. 349–351). The four different types of cross-linguistic influence include errors, facilitation, avoidance and over-use (Ellis R. , 2008, p. 354). In general, similarities between L1 and target language tend to facilitate learning, whereas differences may cause errors

or avoidance. Swedish learners of English, for instance, never omit prepositions in sentences like ‘[They] go to sit on the grass’, but Finnish learners often do. This is most likely due to positive and negative transfer, respectively, as preposition use in Swedish is similar to English preposition use, whereas Finnish has a different system of spatial reference which often consists of inflectional morphemes (Odlin, 2003, p. 440). Over-use can in turn occur as a result of avoidance, as the learner accesses familiar words or phrases rather than producing unfamiliar and challenging structures (Ellis R. , 2008, pp. 349–350, 354–358). Similarities do not, however, exclusively facilitate learning. In pronunciation, for instance, similar sounds are reportedly more difficult to learn than different sounds, and particularly difficult are sounds that are merely allophones in the learner’s L1 but contrastive phonemes⁵ in the target language. In English, for instance, /d/ and /t/ are contrastive phonemes, but in Spanish they are simply allophones (Ellis R. , 2008, p. 368). Spanish-speaking people may therefore experience difficulties distinguishing between English words like ‘dip’ and ‘tip’. Transfer occurs in all aspects of linguistics and affects both reception and production (Odlin, 2003, p. 437; Ellis R. , 2008, p. 352). It should be noted that not all errors matching structures in the learner’s L1 are the results of transfer – they may in fact be purely developmental and occur in all learners’ interlanguages (Ellis R. , 2008, p. 401).

Native language influence not only affects the pronunciation of phonemes; it affects L2 pronunciation in general. Chun & Frodesen highlight timing, intonation and other prosodic features of the target language as particularly difficult for a second language learner to reproduce, especially after the critical period (2014, pp. 4–5). The **critical period hypothesis**, as mentioned in section 2.2, was proposed by Eric Lenneberg in 1967 and suggests that ‘there is a biologically determined window for the full acquisition of a language’ (McGregor, 2009, p. 219), a window that supposedly closes around the age of 12 or 13 due to loss of cerebral plasticity (Sakai, 2005, p. 816; Harley, 2014, p. 73). According to the hypothesis, it is virtually impossible for learners having passed the critical period to acquire an accent indistinguishable from that of a native speaker, and also to acquire native speaker-like competence (McGregor, 2009, p. 219). Loss of cerebral plasticity is not the only explanation of post critical period language learning struggles, as second languages learned after the critical period will be processed in different parts of the brain than the native language (Doidge, 2007, p. 34). The critical period hypothesis has however been challenged, and findings suggest a decline rather

⁵ Contrastive phonemes are distinctive sound units ‘capable of distinguishing between words’ (Nilsen, 2010, p. 33), whereas allophones are distinctive sound units that ‘do not distinguish words’ (Nilsen, 2010, p. 34).

than a sudden loss of language learning ability in youth and adults. The brain may lose some of its plasticity during puberty, but the adult brain still is far from rigid. And, although very rare, there is also evidence showing adult learners achieving native-like competence and accents (Ellis R. , 2008, p. 761; McGregor, 2009, p. 219; Chun & Frodesen, 2014, p. 5; Doidge, 2007, pp. 34, 55).

In addition to being influenced by their native *language*, L2 learners are affected by the culture and pragmatics of their native country. They may for instance ‘draw inferences on intended meanings based on the interactional norms of their native cultures’ (Chun & Frodesen, 2014, p. 18), which means that utterances produced by native speakers of the target language may be misunderstood or misinterpreted by the learner due to cultural differences between the interlocutors. Such differences may also leave the learner at risk of producing inappropriate or impolite L2 responses or utterances (Chun & Frodesen, 2014, pp. 17–19). Failing to add ‘please’ to a request in most English-speaking countries, for instance, would most likely be considered impolite or even rude by native speakers. This may not only be uncomfortable for one or both interlocutors; learners may also unintentionally impede their linguistic and sociolinguistic development by failing to establish or maintain relationships with native speakers (Ellis R. , 2008, p. 170). Miscommunications are particularly common in conventional interactions in which there are ‘different implications about the level of formality of the interaction and the social relationship between interlocutors’ (Chun & Frodesen, 2014, p. 17). Inappropriate utterances due to formality discrepancies frequently occur outside of conventional interactions as well (Chun & Frodesen, 2014, p. 19). A Norwegian exchange student in the UK or the USA could for instance be at risk of unintentionally offending teachers or lecturers abroad by addressing them by their first names, as the common practice in Norway is in fact to address teachers by their given names.

Successful SLA, then, depends on a number of factors (Chun & Frodesen, 2014, p. 3; Saville-Troike, 2012, pp. 5, 21; McGregor, 2009, p. 220). Of these factors, motivation has received the most attention in SLA research (Ellis R. , 2008, p. 677), and is generally considered to be crucial in successful L2 acquisition (Csizér & Dörnyei, 2005, p. 616). Strong motivation in an L2 learner is in fact believed to be more important than language aptitude, as a lack of sufficient motivation will make it difficult to uphold the effort and patience required to master a second language. Properly motivated learners, on the other hand, are more likely to persevere and achieve their goals (Dörnyei Z. , 1998, p. 117). Although the goal for most L2 learners will be to master their target language (Dörnyei Z. , 1998, p. 120), the level of proficiency each

individual aspires to reach may vary greatly as L2 learning motivations arise from different needs or desires (Saville-Troike, 2012, p. 10).

2.4 Learning L2 grammatical structures

A central question in studies on L2 grammar acquisition is whether there is a standard order in which second language learners learn the different grammatical features of their target language, as suggested in Krashen's natural order hypothesis (Krashen, 1982, p. 12), or whether the order of acquisition differs either due to individual prerequisites or with the prior linguistic knowledge of the learners (Ellis R. , 2008, p. 67). Interestingly, findings on acquisition orders of morphology, syntax, and tense and aspect have been remarkably homogenous across studies involving participants with different native and target languages. Results are concurrent in both cross-sectional and longitudinal studies (Ellis R. , 2008, pp. 82–98; Krashen, 1982, pp. 12–14). Although some studies on acquisition order of syntactic features have found variation reflecting the learners' native languages (Ellis R. , 2008, p. 93), it seems there is a general, though not fully rigid, pattern of development in L2 grammar acquisition. These findings have led to the development of various language acquisition models predicting the order in which a naturalistic second language learning process takes place. Pienemann's Processability Theory is one of these models, which when applied to English predicts the following order of grammar acquisition:

1. Invariant forms, like one-word utterances or short lexical bundles.
2. Plural form and possessive pronouns.
3. Noun phrase agreement, i.e. agreement in number between determiner and noun.
4. Inversion, for instance verb-fronting in yes/no questions.
5. Subject-verb agreement.
6. Main and subordinate clauses, like for instance embedded questions (Ellis R. , 2008, pp. 96–98).

These six stages of acquisition include a number of related grammatical features not listed above – such as SVO word order in stage 2 – as the model shows only a 'general hierarchy of stages of acquisition' (Ellis R. , 2008, p. 98). It is however worth noting that proceeding to a higher level does not require mastering every element of every stage. Also, in addition to the features included in Pienemann's model, there are structures that can be acquired at any stage of the learning process – if acquired at all. Copulas, i.e. verbs expressing the predicate, are one such structure (Ellis R. , 2008, p. 98), although for learners of English the singular copula *is*

tends to be acquired at an early stage (McGregor, 2009, p. 218). As briefly mentioned in section 2.2, some second language learners experience fossilisation, meaning that they fail to learn certain grammatical structures and thus never attain ‘near-native competence’ (Saville-Troike, 2012, p. 54). Explicitly learning grammar does however decrease the probability of fossilisation, as there is a strong relation between mastery of certain grammatical morphemes and explicit instruction (Ellis R. , 2008, pp. 90–91).

There is some controversy regarding the order of acquisition in instructed L2 learners as compared to naturalistic L2 learners. Although some theories claim that explicit grammar instruction interferes with the natural order, it seems both groups of learners follow largely the same order of acquisition of several grammatical structures. Instructed learners may however learn a number of features at once or progress more quickly than naturalistic learners (Ellis R. , 2008, p. 863). One study also found ‘greater quantitative development’ in instructed L2 learners (Ellis R. , 2008, p. 864).

2.5 Learning L2 vocabulary

To become a proficient language user, having an extensive vocabulary is considered key (Chun & Frodesen, 2014, p. 9). There is, however, no clear definition of what ‘knowing’ a word entails, a fact which makes it difficult to measure the vocabulary of both learners and native speakers of a language (Ellis R. , 2008, p. 99). Some believe a word is ‘known’ if the learner has established a form-meaning link, as the learner most likely will be able to recognise the spoken or written word in question (Schmitt, 2008, p. 333), but expanding one’s vocabulary involves more than increasing the number of words one recognises. ‘Qualitative changes in the learner’s knowledge of individual words’ (Ellis R. , 2008, p. 99) or ‘depth of vocabulary knowledge’ (Schmitt, 2008, p. 333), i.e. knowing a word’s grammatical functions, collocations, and constraints on use, is required in the productive use of lexical items (Schmitt, 2008, pp. 333–334). It is, in other words, common to distinguish between having receptive knowledge of a word and the ability to use the same word productively.

Whether the goal is gaining receptive or productive vocabulary knowledge, an important – possibly the most important – element in any L2 vocabulary learning process is interacting with the target language *over time*. This presupposes that the input is comprehensible, and that the learner is taking an active part in the language learning process (Schmitt, 2008, p. 333; Ellis R. , 2008, p. 101; Krashen, 1982, p. 34). Active effort on the part of the learner is crucial as research has shown that engagement with lexical items – any form of engagement, like for instance a

need to use or learn a word or paying an increased amount of attention to it – leads to better qualitative and quantitative lexical knowledge (Schmitt, 2008, pp. 338–339). The time aspect of linguistic exposure is important for several reasons; one of them being that the vocabulary learning process is incremental. Establishing a form-meaning link usually is the first stage in most lexical learning processes, whereas depth of lexical knowledge increases with time – provided that the learner encounters the word in question several times, and in several different contexts. There is, however, no identifiable order in which the different components of qualitative word knowledge are acquired (Schmitt, 2008, pp. 333–335; Ellis R. , 2008, pp. 99–102).

Another reason why long-term linguistic exposure is essential, is that learning a number of words sufficient to achieve proficiency in a language inevitably takes time (Schmitt, 2008, p. 333; Ellis R. , 2008, p. 101). It is for instance estimated that a receptive vocabulary of between 5,000 and 10,000 words is needed to understand most non subject-specific texts encountered in the everyday life of an adult having completed secondary education, and that knowledge of between 95 and 98 % of words in a text is required to understand the main points of it (Hulstijn, 2001, pp. 262–263; Schmitt, 2008, pp. 330–331). With regards to productive knowledge, a ‘bottom line for speaking proficiency’ at about 1,000 words is considered by some to be a minimum (Hulstijn, 2001, p. 263). It is worth noting that these are merely estimates and not absolute numbers (Schmitt, 2008, pp. 330–331).

For any language user, it is important to have sufficient qualitative and quantitative word knowledge, but it is also important to know the right words. Learning a core vocabulary comprised of the most frequent words of the target language – many of which may be ‘lexically empty’ function words – and a number of useful lexical items would provide a promising start to most language learning processes (O’Keeffe, McCarthy, & Carter, 2007, pp. 33–37). Once a core vocabulary is in place, learners could benefit from pursuing domain-specific words and registers relevant to their particular communicative needs (Cobb & Horst, 2001, p. 196). For a sports fan intending to discuss football in a second language, for instance, it would be advantageous to learn a football-specific target language vocabulary. Linguistic corpora, which provide statistical information about the frequency of words in authentic spoken and written language, may help establishing which words would be the most useful to learn – both for communicative purposes and for constructing a foundation that allows for effective and independent further learning (O’Keeffe, McCarthy, & Carter, 2007, p. 57).

Expanding one's vocabulary does not necessarily happen one word at a time; nor is it a process that happens entirely separate from grammar acquisition. When encountering a regular verb in the past tense, like for instance 'jumped', both 'jump', which holds lexical meaning, and '-ed', which is a grammatical marker of past tense, will be processed (Saville-Troike, 2012, p. 54). Sometimes words are learned in phrases or collocations, like 'I don't know' (Ellis R. , 2008, p. 99), 'pretty much', or 'by the way' (Chun & Frodesen, 2014, p. 10). Collocations are words that commonly occur together (Carter, 1998, p. 51; McIntosh & Halliday, 1966). Collocational knowledge is gaining increasing attention in SLA theory. Avoiding infrequent (though not necessarily 'wrong') word combinations and being able to use idiomatic expressions in one's second language is more easily achieved when in possession of extensive collocational knowledge (Chun & Frodesen, 2014, p. 10). Schmitt highlights three reasons why collocational knowledge is important to language users. The three reasons include (1) the extensive use of collocations in language; (2) the large number of purposes collocations serve, like for instance the ability to express oneself in a precise manner or choose utterances that are both polite and situation-appropriate, and finally; (3) the higher level of fluent production knowledge of collocations allows for (2008, p. 340). However, which methods of teaching collocations are the most effective has not yet been established. Of the somewhat limited research on the matter, findings suggest that highlighting collocations to learners may lead to a minor improvement of their collocational knowledge. Some of the research found learners to become more proficient in spoken L2 and score slightly better in C-tests (second language proficiency tests) following a period of studying highlighted collocations, but found 'no noticeable improvement in their output of phrases in composition writing' (Schmitt, 2008, p. 340).

Although collocations appear difficult to learn intentionally, this is not the case with single word vocabulary. When vocabulary is taught explicitly, either isolated or in context, second language learners' receptive vocabulary increases more rapidly, becomes more extensive, and is more likely to be retained than incidentally acquired words. Intentional learning of vocabulary also makes learners more likely to gain productive knowledge. However, relying solely on explicit learning processes to expand one's vocabulary may be less effective than combining incidental and intentional learning, as the two learning methods support and reinforce each other. Exposure to the target language, for instance through reading or listening, should therefore be encouraged. In fact, hearing a word pronounced may reinforce knowledge of said word, which in turn may help commit it to long-term memory at an earlier stage (Schmitt, 2008, pp. 340–341; Nation, 2009, pp. 111–113).

2.6 Recent theory on language learning, languaging and translanguaging

The idea that language is a social phenomenon and an integrated part of all human endeavours has gained increased recognition in linguistics, particularly since the 1990s (Thorne S. L., 2000, p. 220). It is not, however, an entirely new idea. Almost a century ago⁶, Lev Vygotsky (1896–1934) proposed that ‘speech and action are part of *one and the same complex psychological function*’ (Vygotsky, 1978, p. 25), and that signs of all kinds – for instance speech, writing, drawings, and number systems – have a ‘social origin’ and play a ‘crucial role in the individual’s development’ (Vygotsky, 1978, pp. 32, 38). Despite this, the view of language as a code, as simply a system of signs or ‘a form of knowledge represented by symbols in the mind of individuals’ (Zheng & Newgarden, *Rethinking Language Learning: Virtual Worlds as a Catalyst for Change*, 2012, p. 14), has been the leading view in linguistics throughout the 20th century. This view is however currently under scrutiny and has been challenged by many linguists in recent years (Dufva, Aro, & Suni, 2014, pp. 22–23).

Steven Thorne, for instance, rejects the idea that literacy (i.e. the ability to understand and make use of language) is a ‘primarily brain-local skill involving an individual deciphering and producing graphically rendered language’ (2012, p. 297), and instead characterises it as a ‘social practice’ in which people ‘become literate within a dynamic interplay of personal and social-collective experience’ (Thorne S. L., *Gaming writing: Supervernaculars, Stylization, and Semiotic Remediation*, 2012, p. 297). He argues, in other words, that language learning – rather than being a process relying solely on the cognition and processing abilities of the individual learner – is a process involving a combination of the learner’s individual cognitive and linguistic abilities and their interaction with and participation in the social circles of which they are part. With the help of modern technology, social interaction now also takes place over the Internet. Online gaming, for instance, provides a platform for language learners to socialise with target language speakers and simultaneously develop their second language skills (Thorne & Black, 2008).

Language used ‘in real-time communication and coaction’ is now being referred to as *languaging* in certain linguistic circles⁷ (Zheng & Newgarden, *Rethinking Language Learning: Virtual Worlds as a Catalyst for Change*, 2012, p. 15). When languaging, interlocutors make use of any resource – linguistic and/or other – they deem useful to the particular situation they

⁶ The first four chapters of *Mind in Society* are constructed from Vygotsky’s 1930 work “Tool and Symbol in Children’s Development” (Vygotsky, 1978, p. ix).

⁷ Maturana, Mpodozis & Letelier (1995) and Becker (1991) are among the linguists using the term ‘languaging’.

find themselves in, with the primary aim of constructing meaning (Blommaert, 2012, p. 3). Context is vital in the act of languaging (Zheng, 2012, p. 544), as ‘without a context, words and utterances *do not mean*’ (Dufva, Aro, & Suni, 2014, p. 24). In essence, the word ‘languaging’ underlines the fact that language is a form of action (Swain & Watanabe, 2012, p. 1). Language learners actively *do* rather than passively *acquire*, which means that language proficiency could be considered ‘know-how, rather than know-that knowledge’ (Dufva, Aro, & Suni, 2014, p. 23). There is, in other words, more to language than simply ‘the meaning of words [being] specified or fixed by a code’ (Zheng, 2012, p. 544); context, experience and the joint effort of interlocutors to construct meaning are all affecting what is understood in communicative situations.

Closely related to languaging is *translanguaging*, a term coined by Cen Williams in 1994 (García & Kano, 2014, p. 260). It originally referred to the deliberate alternation between languages in bilingual classrooms (Park, 2013, p. 50), but the term has since been extended to include ‘the complex discursive practices of bilinguals’ (García & Kano, 2014, p. 260). When bi- or multilingual speakers ‘[shuttle] between languages in a natural manner’ (Park, 2013, p. 50), using the linguistic repertoire of which they are in possession and not restricting their utterances to include one language only, they are translanguaging. As in languaging (see previous paragraph), all linguistic resources deemed useful – including sequences from different languages – are employed in translanguaging (García & Kano, 2014, p. 260). The term ‘translanguaging’ has to some extent replaced ‘code-switching’, which entails alternating between different languages or dialects within the same utterance (Park, 2013, p. 50; Gumperz, 1964, p. 150). With the shift away from viewing language as a code, the term code-switching is believed by some to inadequately express the complex processes involved in multilingual utterances (Wei, 2017/2018, p. 13; Blommaert, 2012, p. 3; García & Kano, 2014, p. 260).

2.7 Digital gaming and L2 English proficiency

In recent years, several studies on the possible correlation between spare time activities and L2 skills have been conducted. Learners of English as a second language, for instance, have been found to benefit linguistically from engaging in extracurricular activities in which they are exposed to or required to use the English language (Sylvén & Sundqvist, 2012; Sundqvist & Wikström, 2015; Sundqvist, 2009). Digital (and particularly online) gaming, which has become extremely popular (Veltri, Baumann, Krasnova, & Kalayamthanam, 2014), is perhaps one of the activities whose impact on English skills in non-native speakers has been researched the

most over the past few years. In several studies on this topic, the focal point has been the impact of digital gaming on learners' vocabulary, although some have investigated whether frequent gaming also correlates with improved oral proficiency and reading and listening comprehension (Sundqvist & Wikström, 2015; Sundqvist, 2009; Sylvén & Sundqvist, 2012; Lee, 2017; Jensen, 2017).

A Swedish study from 2009 tested the oral proficiency and vocabulary size of 80 Swedish ninth graders (aged 15-16 years) after collecting data on the participants' engagement in extracurricular activities involving the English language (Sundqvist, 2009, p. i). The aim of the study was to investigate whether extramural English has an impact on young learners' English proficiency (Sundqvist, 2009, p. 5), and results showed a positive and significant correlation between time spent on extracurricular English and both vocabulary size and oral proficiency. Activities requiring active participation, such as playing digital games, using the Internet and reading, resulted in higher scores than more passive activities such as listening to music and watching TV. Boys showed a stronger preference for productive activities than girls, and thus achieved higher scores (Sundqvist, 2009, p. i).

Similar studies, of which many have focused on the impact digital gaming in particular seems to have on learners' English proficiency, have since been conducted. Another Swedish study, for instance, looked into the relationship between amount of time spent on gaming and performance in English both in school and in vocabulary tests. Results showed the highest vocabulary scores in participants regarded as 'frequent gamers' (playing digital games more than five hours per week), whereas moderate gamers (playing digital games for up to five hours per week) scored second best and non-gamers attained the lowest scores (Sundqvist & Wikström, 2015, p. 65). In addition to measuring participants' vocabulary, this study also assessed essays and collected grades. Here, however, scores aligned less directly with time spent on gaming, as non-gamers and frequent gamers achieved significantly better essay results and end-of-year grades than moderate gamers (Sundqvist & Wikström, 2015, pp. 65, 72). Yet another Swedish study, however, found that moderate gamers came second to frequent gamers in all areas tested, i.e. receptive and productive vocabulary and reading and listening comprehension (Sylvén & Sundqvist, 2012, pp. 302, 313–314).

Results comparable to those found in the research reviewed above have also been found in other recent studies. A 2017 study found that Danish 8 and 10-year-olds playing digital games achieved better vocabulary test results than their non-playing peers. Results were significant for the participants who received written English input only and those receiving both oral and

written English input. Spending five times more time than girls on gaming per week, boys also attained significantly higher vocabulary scores (Jensen, 2017). Another 2017 study, in which 77 Korean EFL students participated, revealed no direct correlation between time spent on extracurricular English and vocabulary scores but found quality and diversity of extracurricular activities to be positively correlated with higher vocabulary scores. It is not entirely clear what ‘quality’ entails in this study, as each participant was asked to assess their extracurricular activities themselves (Lee, 2017). It could be argued, though, that Lee’s ‘quality’ activities could be similar to the ‘productive’ activities of Sundqvist (2009), as in her study productive activities elicited better results than the more passive extramural English activities. In fact, one of the hypotheses of the present study is that English proficiency is affected more by productive than passive activities. This will be investigated and discussed further in chapters 4 and 5 (Results and Discussion).

Although some of the studies reviewed in this subchapter mention different types of digital games, none of them appear to have made a distinction in their research between individual or offline gaming and gaming in which players communicate with others through the Internet – despite the two potentially being very different and possibly eliciting different linguistic outcomes. When gaming online, players can talk to each other through headsets with microphones, write to each other using different chat services, or even interact with each other through live-streaming video. A number of online games are designed for people to cooperate with or play against each other in real-time whilst communicating to coordinate their efforts; a feature that will inevitably be absent from offline digital games (Veltri, Baumann, Krasnova, & Kalayamthanam, 2014, p. 1).

Though language learning is unlikely to be the primary objective of most online games, the research reviewed above indicates that learners of English in particular appear to benefit from engaging in online gaming. Thorne points out the unique potential that Internet communication provides for language learners to interact with ‘expert speaker age-peers’ (2003, p. 41), i.e. more capable peers who may provide the assistance needed for the learner to develop their second language skills, as described in ZPD and scaffolding theories (see section 2.3). However, learners may also assist each other in the learning process, as negotiation for meaning – either with a more capable interlocutor or with another learner – will most likely involve ‘improved comprehensibility of input, enhanced attention, and the need to produce output’ (van Lier, 2000, pp. 247–248). It is far from unthinkable that in-game situations requiring negotiation for meaning may arise for online gamers.

3. Method

3.1 Methodological approach

The main objective of the present study was to investigate whether extracurricular activities involving English affect Norwegian ninth graders' English skills, and, if so, determine which of these activities are the most influential. Another objective was to obtain more detailed information on how and why the participants engage in EE activities. Based on the data collected from the tests and language diaries, it was also considered relevant to compare the EE practices and motivations of girls and boys, respectively. To properly explore these matters, a non-experimental **mixed-method approach** consisting of both quantitative and qualitative research methods was chosen. Quantitative research provided the opportunity of quantifying and measuring factors like linguistic performance and amount of time spent on different activities. The ensuing values could then be explained and analysed using numbers, figures and statistics (Creswell, 1999, p. 455). Qualitative research, on the other hand, provided insights into the motivations of the participants along with more detailed information on their extracurricular English practices, and provided more context to the interpretation of the quantitative data.

The quantitative data in this study, then, comprise language diary data from all participants as well as their test scores in one vocabulary test and one grammar test. Interviews with seven of the participants constitute the qualitative data. Detailed descriptions of the language diaries, tests and interviews are provided in sections 3.3 and 3.4, while selection and statistics are described in sections 3.2 and 3.5, respectively. In section 3.6, the method and research questions are tied together, and key points are summarised. The final section of this chapter (3.7) addresses the method's strengths and limitations.

Prior to the commencement of the research, the study and its methods were approved by the NSD⁸ (Norwegian Centre for Research Data).

3.2 Participants

16 ninth graders – six boys and ten girls, all aged 14–15 – attending Norwegian public school participated in the present study. Initially, 17 ninth graders volunteered to participate; however, one boy eventually decided to withdraw from the study. Attempts to recruit participants were

⁸ The NSD is an archive and centre for research data. The organisation also evaluates research projects to make sure requirements for personal data protection are met. The present study's NSD case number is 675187.

made in three different schools but were successful in only one, which means that all participants attended the same school. The participants did however belong to three different classes taught by different English teachers.

The schools were invited to participate on the basis of their convenient geographical locations, and ninth graders were recruited mainly for two reasons: First, all pupils at this level still follow the same obligatory English course, and second, most ninth graders are skilled enough to use English independently outside of school. There were no inclusion criteria other than location and age. The sole exclusion criterion was that participants could not be native speakers of English.

Participation was voluntary. As the participants were all under the age of 16, parental consent was required (Larsen, 2013). Signed consent forms were collected from all participants before the research process was started.

3.3 Research design

Inspired by the methods of Swedish researchers Sundqvist (2009) and Sylvén & Sundqvist (2012), the participants were given a ‘language diary’ (Appendix 1) in which they reported the amount of time they spent each day throughout one week on different extracurricular activities involving English. The language diary consisted of seven identical forms, one for each day of the week and each listing nine specified activities in addition to one open category. Next to each activity listed, there was a blank space into which the participants wrote down hours and minutes spent on the given activity, as well as comments deemed relevant. The language diaries were handed out four weeks prior to the testing (the tests and testing process are described below) and collected once the participants had completed them. All 16 diaries were collected before the tests were conducted.

Upon completing their diaries, the participants’ English skills were tested using one vocabulary production test and one grammaticality judgment test. The vocabulary test (Appendix 2) was assembled using ten sentences from each of the five different word frequency levels⁹ available (2,000; 3,000; 5,000; University and 10,000-word levels) in Laufer & Nation’s Vocabulary Levels Test, version A (Laufer & Nation, 2019). This added up to a total of 50 sentences, each of which had a number of letters removed from the end of one of the words. The first ten tasks

⁹ The word level estimates are made on the basis of different corpora and word lists (Cobb, Vocabulary Tests, n.d.; Laufer & Nation, 1999).

were at the 2,000-word level; the next ten were at the 3,000-word level; and so on. The task was for the participants to complete the partial words by filling in the missing letters. The grammaticality judgment test (Appendix 3) consisted of 30 multiple choice tasks, all selected from a Cambridge Advanced English entry test (Hewings, 2019) which is at the CEFR's¹⁰ C1 level¹¹ of difficulty (University of Cambridge Local Examinations Syndicate, 2020a). Three alternatives, of which only one was correct, were listed in each of the 30 tasks. The participants were instructed to choose and circle the alternative they believed to be grammatically correct. All participants completed both tests on the same day, using pen and paper only. They had 90 minutes to complete both tests – 80 tasks in total – and everyone finished within the given time frame.

3.4 Interviews

Seven of the 16 participants – four boys and three girls – were interviewed about their extracurricular English practices. A semi-structured interview format was decided upon, as it allows for elaborate answers and follow-up questions when needed (Barkhuizen, Benson, & Chik, 2014, p. 17). An interview guide consisting of nine pre-prepared interview questions (Appendix 4) formed the basis of the interviews, and all seven interviews were recorded with a Zoom H1n recording device borrowed from the library at the University of Agder. The interviews were all conducted within ten days of each other, and subsequent to the participants taking the tests. The interviews were transcribed using intelligent verbatim transcription style (Warrior, n.d.), and translated to English¹². Data were stored and processed in accordance with NSD guidelines.

As one of the purposes of the interviews was investigating whether boys and girls use second language English in different ways, it was considered important to interview both male and female participants. Interviewing participants with different EE habits was also a priority, mainly to investigate a wide variety of individual practices. The decision to interview seven rather than all 16 participants was based on the assumption that sufficient insights into the EE habits and motivations of Norwegian ninth graders (sufficient for this study, that is) could be gained by interviewing some – ideally 5–7 – of the participants. It was also decided to carry out

¹⁰ The Common European Framework of Reference for Languages, which is 'a series of descriptions of abilities at different learning levels that can be applied to any language' (IELTS Partners, 2020).

¹¹ C1 is the second highest level of proficiency. The learner is considered 'proficient' at this stage (IELTS Partners, 2020).

¹² Excerpts from the interview transcriptions, both the original ones in Norwegian and the English translations, are included in Appendix 9.

the interviews in Norwegian, for one key reason: 15 of the 16 participants are native speakers of Norwegian, and are therefore likely to be more (or, for some, at least equally) comfortable speaking Norwegian than English. The assumption was that the participants' answers would be more precise and/or elaborate if they were allowed to speak their native language.

3.5 Statistics

Statistical analyses were performed using SPSS Package 25 (IBM Corp, 2017), and figures were made using GraphPad Prism version 8.3.1 for Windows (GraphPad Software, 1995–2020). To check for normal distribution, Q-Q plots and a Shapiro–Wilk test were used. For sample sizes smaller than 50, as in the present study, the Shapiro–Wilk test is the appropriate choice of normality test (Mishra, et al., 2019, p. 70). Relationships between variables – in this case, time spent on the different EE activities and results from the vocabulary and grammar tests – were measured with stepwise linear regression analyses. In a stepwise linear regression, all variables are entered – stepwise – into the equation before non-significant variables are identified and removed, leaving influential variables only (George & Mallery, 2020, p. 213). Paired t-tests, which are typically used to compare two sets of variables from one group of individuals (George & Mallery, 2020, p. 149), were used to compare vocabulary and grammar test results.

3.6 Methodological choices

The mixed-method approach chosen in the present study was considered the best option for answering the study's two research questions, which are:

1. How does extracurricular use of English affect the English vocabulary and grammar skills of a cohort of Norwegian ninth graders?
2. To what extent, if any, does playing online games that require communication with peers lead to greater improvement of English skills in the same group of Norwegian ninth graders compared to other extracurricular activities involving English?

To be able to answer the two research questions, data on the extracurricular use of English and the English vocabulary and grammar skills of a selection of Norwegian ninth graders had to be obtained. By doing so, the amount of time participants spent on different EE activities could be compared to the participants' results in vocabulary and grammar tests. Using statistical calculations, relationships between the variables could be accurately measured and potential statistically significant correlations could be revealed. Self-reporting was considered the most

practical method for collecting data on EE habits, and language diaries, as used in previous studies similar to the present one (for instance, Sylvén & Sundqvist, 2012), were considered easy for participants to fill out. In their diaries, participants self-reported the amount of time they spent on ten different EE activities every day for one week. To measure the participants' vocabulary skills, a vocabulary production test was chosen. Tasks from five different difficulty levels were included to differentiate between participants and find out whether they were more or less at the expected level of proficiency for their age group. A grammaticality judgment test was chosen to measure the participants' grammar skills, as it would be easy for the participants to complete, and easy to correct. Both the language diary and the two tests would elicit quantifiable results (number of hours spent on different EE activities and number of correct answers), which means data could be compared and potential correlations between EE practices and vocabulary and grammar skills could be determined.

The quantitative measurements produced statistical relationships between variables, but they did not answer how specifically extracurricular English practices affected the vocabulary and grammar skills of the participants. Therefore, interviews were conducted with what was considered a representative number (7) of the 16 participants. A semi-structured interview format was decided upon to ask the same important questions to all the interviewees but at the same time have the opportunity to follow up on interesting or relevant information provided by the participants. The interviewees were asked questions about how and why they use English in their spare time and when gaming, how or where they think they learn English, and more (see Appendix 4 for complete interview guide). With these qualitative data, it was possible to answer the research questions more thoroughly and accurately than with quantitative data only.

3.7 Strengths and limitations

In the present study, a limited number of ninth graders volunteered to participate. As a large sample is needed to ensure an accurate representation of a population (Simmons, 2016), the number of participants in the present study is a limitation. With 16 participants only, findings may at best reveal trends that could reflect the English skills and EE habits of the average Norwegian ninth grader. The present study is, in other words, far too small to make generalisations from. It should however be noted that a small sample also has its advantages: It allows for closer follow-up of all participants, as well as the opportunity to interview a large portion of the participants. Another advantage is the possibility of using small-sample studies as pilot studies in areas where little previous research has been conducted.

The fact that all language diary data are self-reported is another limitation. Several studies on the reliability of self-reporting on different matters have found discrepancies between self-reported values and objectively measured values (Otten, Littenberg, & Harvey-Berino, 2009; Gennuso, Matthews, & Colbert, 2015). One study also found adolescents to be less accurate in their self-reports than adults (Slootmaker, Schuit, Chinapaw, Seidell, & van Mechelen, 2009). In light of these findings, it can be assumed that the language diary data of the present study, which comprise the number of hours each participant spent on ten different EE activities over the course of one week, are not entirely accurate. Inaccurate language diary data would mean that potential correlations might in reality also be somewhat higher or lower than what is found, which would make the results less reliable.

Furthermore, the language diary data (although containing a week's worth of information) are cross-sectional, which means they comprise information gathered at one point in time only. The data are therefore likely not to be representative of a typical week. Collecting language diary data at several points in time would increase the representativeness of the data. This is further discussed in sections 5.2.2 and 5.2.3.

The grammar test also has its limitations. This was a multiple-choice test in which three possible alternatives were given with each task, which means that the chance of participants guessing the correct answer in a given task was one in three. Still, this is a professionally designed test used by employers and universities (albeit as part of a more comprehensive test) to determine prospective employees' or students' English proficiency (University of Cambridge Local Examinations Syndicate, 2020a). For the purposes of the present study, this was considered satisfactory.

As mentioned in section 3.2, all participants attended the same school. The chances of the sample being representative of the average Norwegian ninth grader would definitely be higher with participants from different geographical locations, which means this is a limitation. The quality of the data in the present study would be higher with a more diverse sample, preferably including ninth graders from different parts of the country. However, it can also be argued that the similar backgrounds are an advantage, as the differences between the participants' English proficiency levels are more likely to originate in the participants spending time on different extracurricular activities than in different curricula or school practices. Having had three different English teachers, the participants have nonetheless experienced different teaching practices.

Unlike the grammar test, the vocabulary test was not multiple-choice, and completing it required productive knowledge. Therefore, any guesswork is unlikely to have elicited misleading vocabulary scores, which means that the vocabulary test results are likely to be more accurate than the grammar test results. Also, the reliability and validity of the vocabulary test have been evaluated and found to be satisfactory (Laufer & Nation, 1999, p. 44). The vocabulary test is, then, one of the strengths of the present study.

The fact that all participants completed the tests on the same day is another one of this study's strengths. This way, no participants were further along in their English curriculum in school than others, and participants having taken the tests could not discuss tasks with those not having taken the tests. The tests were however cross-sectional, meaning that participants were tested only once. Conducting two or more rounds of tests would have increased the reliability of the study.

The mixed-method approach employed in the present study is another one of the study's main strengths, as combining quantitative and qualitative research in a single study 'allows the development of a comprehensive understanding of the phenomena' (Kitto, Chesters, & Grbich, 2008, pp. 244–245). The quantitative part, which in this study constitutes most of the data, provides values that are both fairly reliable (see section 5.2.2 for reliability assessment of the language diary and the tests) and easy to interpret, and that can easily be compared to the findings of other similar studies. The qualitative part, on the other hand, provides material helpful to the interpretation and explanation of the quantities. While the quantitative data provide information about the amount of time participants spend on different EE activities and their respective levels of English proficiency, the qualitative data offer greater understanding of how these Norwegian ninth graders learn English and why they engage in activities involving English in their spare time.

The qualitative part of the study has both strengths and limitations. The semi-structured interview format is definitely a strength, as it facilitated elaboration and follow-up questions but also made it easy to stay on topic. Limiting interviewees to only seven out of the 16 participants, on the other hand, is one of the study's limitations. Interviewing every participant instead would most likely have elicited more diverse and detailed data for the support and interpretation of the quantitative measurements, and also for the discussion.

4. Results

This chapter begins with a brief introduction of relevant statistical terms (section 4.1). In the following section, data from the participants' language diaries are presented (section 4.2). The data include the total amount of time spent on extracurricular English (EE) as well as more detailed information on the nine activities plus the one open category listed in the diaries. Following this are the results from the vocabulary and grammar tests (both section 4.3). The vocabulary test results include total scores and scores in each of the five frequency levels, whereas the grammar test results include total scores only. Results from the two tests are then compared and correlated with each other and with the language diary data (section 4.4) and summarised in the final section (4.5) of the chapter. Results include values for all 16 participants as a whole, as well as isolated values for boys (participants playing online games) and for girls (participants not playing online games). Total, mean and standard deviation (SD) values are presented.

It is important to note that in the present study, 'online gaming' entails playing online games whilst communicating with fellow gamers. 'Offline gaming', on the other hand, involves playing any digital games that do not support or require communicating with others. In theory, these too could be online games. The two categories are listed in the participants' language diaries as, respectively, 'playing digital games in which you communicate with others in English' and 'playing digital games in which you do not communicate with others' (translated from Norwegian; see Appendix 1 for language diary in Norwegian and English).

4.1 Statistics

Before performing statistical analyses, it is vital to determine whether the samples of the research are **normally distributed**. In a normally distributed sample, values are symmetrically distributed around the mean (i.e. average) value and the majority of values are mid-range, i.e. close to the average value (George & Mallery, 2020, p. 113). Where normal distribution is confirmed, data are presented in mean values and compared using parametric tests. Nonparametric methods and median values are used where the sample is not normally distributed (Mishra, et al., 2019, p. 70). In the present study, the samples – in this case the participants' language diary data and scores from both tests – were found to be normally distributed. Therefore, data are presented in mean values and analysed using parametric tests.

In the tables presenting the data of the present study, **standard deviation (SD)** values are included. SD is described as a '[measure] of variability around a mean' (George & Mallery,

2020, p. 112), which means that it measures the distribution of a sample's values in relation to its mean value. 68 % of values in a normally distributed sample lie between ± 1 standard deviation of the average value, while 95.5 % of values lie between ± 2 standard deviations (George & Mallery, 2020, p. 113). A high relative SD would, then, indicate that values are more spread than in a sample where the relative SD is low.

To establish whether the correlations and variations in the data material of the present study were statistically significant, the **p-values** of the different quantities were calculated. The p-value determines the probability (hence the p) of a given result occurring coincidentally. A p-value of 0.05 or less means that the probability of an outcome having occurred by chance is 1 in 20 or less and is considered statistically significant. It should also be noted that a p-value between 0.05 and 0.1 is regarded as marginally significant (George & Mallery, 2020, pp. 112–113). In this study, significant p-values are presented either as $p < 0.05$ or $p < 0.01$ (the latter signifying that there is a 1 in 100 or less chance of an occurrence being coincidental).

Correlations between variables are measured using **the correlation coefficient r** . A correlation is perfect when $r = 1$, and non-existent at $r = 0$. A perfect positive correlation signifies that an increase in one variable leads to the other variable increasing at the exact same rate, which means that the closer r is to 1, the stronger is the correlation between variables. Correlations can also be negative; in which case the value of r would be between 0 and -1. R , in other words, determines the strength of association between variables (George & Mallery, 2020, p. 139).

R^2 , the square of r , indicates how much of the variance in one variable can be explained by the other variable (George & Mallery, 2020, p. 195). If the R^2 -value of the relationship between for instance time spent watching TV and vocabulary performance was 0.43, it would mean that 43 % of the vocabulary performance could be explained by the amount of time spent on watching TV (these are made-up numbers).

4.2 Language diary data

The language diary data include the number of hours the participants reported spending on extracurricular English activities throughout one week. Below, Table 4.1 shows an overview of the data from all participants' language diaries.

During the week of keeping a language diary, the average amount of time each participant reported spending on EE activities was 31.4 hours. Individual variation was however considerable ($SD = 24.1$), with total values per participant ranging from a mere 0.2 hours to a

substantial 81.5 hours (of which 46 hours was spent listening to music) in one week (see Appendix 5 for detailed language diary data on all participants).

Table 4.1: *All participants' language diary data.*

EE activity	Total (hours/week)	Mean (hours/week)	Mean (hours/week) per active participant	SD
Books	0.4	0.0	0.2	0.1
News/magazines	9.4	0.6	4.7	2.2
YouTube	125.5	7.8	10.5	9.8
TV-series	51.4	3.2	4.3	3.6
Films	53.6	3.4	4.5	3.1
The Internet	22.6	1.4	2.5	2.1
Online gaming	59.9	3.7	10.0	5.8
Offline gaming	25.4	1.6	4.2	3.6
Music	135.6	8.5	8.5	11.7
Other	18.2	1.1	2.6	2.9
Total	502.2	31.4	31.4	24.1

Adding up to a weekly total of 135.6 hours and an average of 8.5 hours per participant, listening to music was the activity on which participants spent the most time. This was also the only activity all participants took part in. Reading books was the least popular activity, with only two participants reporting spending a total of 0.4 hours doing this. A total of 18.2 hours was reported spent on 'other' activities. According to the information provided by participants in the 'comments/description' box, these activities included interaction with native speakers of English, use of social media, and non-specified activities.

When looking at time spent by each participant actually engaging in the various activities (i.e. not counting the participants who have reported spending no time on the activities in question), watching YouTube and playing online games replace listening to music as the most time-consuming activities. In one week, these two activities occupied each participant for an average of 10.5 and 10.0 hours, respectively. With an average time consumption of 0.2 hours per active participant, reading books retains its position as the least popular activity.

There is a statistically significant difference ($p < 0.01$) between the total amount of time boys and girls reported spending on EE activities, with boys spending significantly more time than girls. Below, Tables 4.2 and 4.3 show isolated language diary data for boys and girls, respectively.

Table 4.2: Boys' language diary data.

EE activity	Total (hours/week)	Mean (hours/week)	SD
Books	0.3	0.1	0.1
News/magazines	9.0	1.5	3.7
YouTube	90.2	15.0	11.2
TV-series	29.6	4.9	5.1
Films	17.2	2.9	3.1
The Internet	10.3	1.7	2.0
Online gaming	59.9	10.0	5.0
Offline gaming	20.8	3.5	5.3
Music	93.0	15.5	16.5
Other	0.3	0.1	0.1
Total	330.6	55.1	19.1

The boys reported spending an average of 55.1 ± 19.1 hours on EE activities. Listening to music and watching YouTube videos were the most popular activities, occupying each male participant for a weekly average of 15.5 and 15.0 hours, respectively. With an average of 10.0 hours per week, online gaming was the third most time-consuming activity. This means that boys spent a substantial amount of time on an activity requiring L2 production. Reading books and 'other' were the least popular activities, with the boys spending a weekly average of only 0.1 hours engaging in each.

Table 4.3: Girls' language diary data.

EE activity	Total (hours/week)	Mean (hours/week)	SD
Books	0.1	0.0	0.0
News/magazines	0.4	0.0	0.1
YouTube	35.3	3.5	6.0
TV-series	21.8	2.2	2.1
Films	36.5	3.6	3.3
The Internet	12.3	1.2	2.2
Online gaming	-	-	-
Offline gaming	4.7	0.5	1.4
Music	42.6	4.3	4.8
Other	17.9	1.8	3.6
Total	171.6	17.2	13.0

The girls reported spending an average of 17.2 ± 13.0 hours on EE activities – less than a third of what the boys reported. The most popular activity was, however, the same for the girls as for the boys, namely listening to music. On average, each female participant spent 4.3 hours

engaging in this activity. The second and third most popular EE activities were watching films and watching YouTube videos, with an average time consumption of 3.6 and 3.5 hours, respectively. None of the girls reported spending any time on online gaming, making this the least popular activity among the female participants.

4.3 Test results

Table 4.4 shows vocabulary test results for all participants as a whole, and for male and female participants as separate groups. It should be noted that spelling mistakes such as ‘lovely’ instead of ‘lovelly’ (task 8) and inflection errors such as ‘scares’ rather than ‘scare’ (task 16) were marked as correct answers, as participants were believed to have productive knowledge of these words despite making minor errors in spelling or grammar.

Table 4.4: Vocabulary test results (number of correct answers).

Group		2,000 level*	3,000 level*	5,000 level*	University level*	10,000 level*	Total score**	%
All	Mean	7.0	4.6	2.3	3.0	1.7	18.6	37.1
	SD	2.6	2.0	2.4	2.2	1.7	9.9	
	Range	2–10	2–8	0–9	0–7	0–6	6–40	
Male	Mean	8.2	5.8	3.7	3.7	2.5	23.8	47.6
	SD	2.3	1.5	2.9	3.0	2.1	10.8	
	Range	4–10	4–8	0–9	0–7	0–6	9–40	
Female	Mean	6.3	3.9	1.4	2.6	1.2	15.4	30.8
	SD	2.5	2.0	1.6	1.5	1.4	8.2	
	Range	2–10	2–7	0–4	0–5	0–4	6–29	

*Highest possible score is 10. **Highest possible score is 50.

As can be seen in Table 4.4, participants achieved an average of 18.6 correct answers out of 50 possible, which equates to 37.1 %. The fairly high standard deviation at 9.9 coupled with total scores ranging from 6 to 40, however, indicate great variation in the participants’ individual vocabulary test scores.

Male participants attained higher scores than female participants both in total and at all five word-frequency levels. On average, boys answered 23.8 (47.6 %) tasks correctly, whereas girls answered 15.4 (30.8 %) tasks correctly. In relative terms, this means boys scored 54 % higher than girls. Although the difference is notable, it is however only marginally significant ($p < 0.1$).

Table 4.5 shows grammar test results for all participants, as well as results for male and female participants as distinct groups.

Table 4.5: Grammar test results (number of correct answers).

Group		Score*	%
All	Mean	19.8	66.0
	SD	4.3	
	Range	10–26	
Male	Mean	20.7	68.9
	SD	4.4	
	Range	13–26	
Female	Mean	19.3	64.3
	SD	4.4	
	Range	10–25	

*Highest possible score is 30.

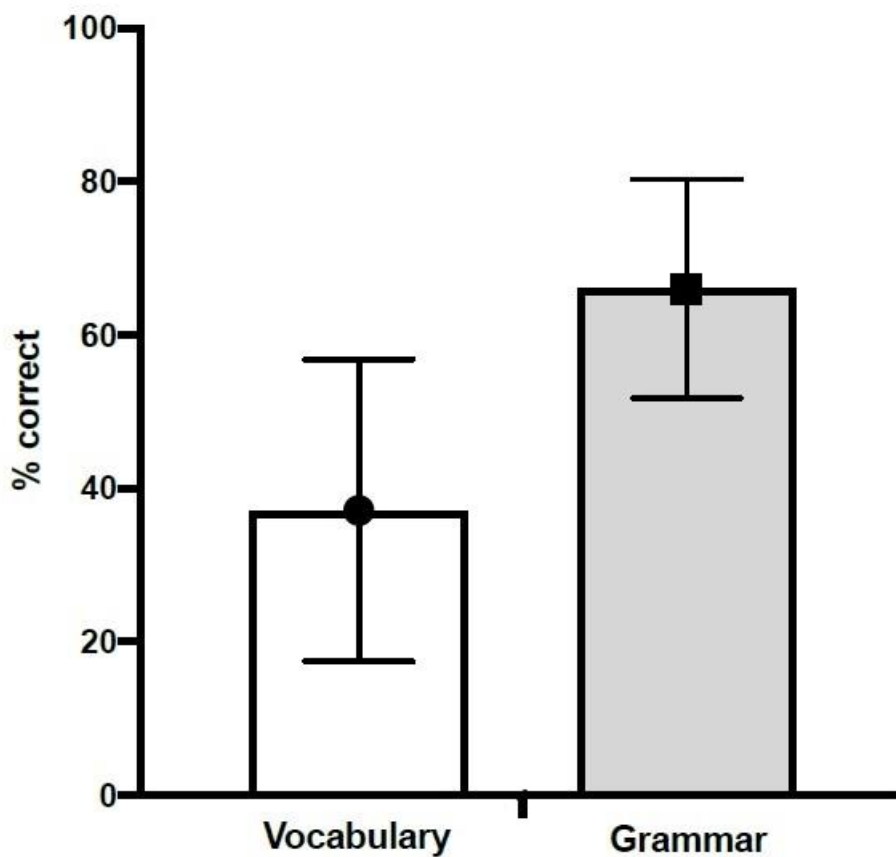
The participants answered an average of 19.8 grammar questions correctly, out of 30 possible. This equates to an average score of 66.0 %. The relatively low standard deviation value of 4.3 and the range of correct answers spanning only from 10 to 26 indicate a lower degree of variation in the participants' grammar results than in their vocabulary results. Task by task results, on the other hand, were highly varied (see Appendix 8). What turned out to be the hardest grammar task was answered correctly by only three of the 16 participants, whereas all 16 participants circled the correct answer in four of the tasks. On average, 10.5 participants answered each grammar task correctly.

In the grammar test, too, the male participants attained higher scores than the female participants. The difference, however, is slight, with the boys scoring on average 20.7 points (68.9 %) and the girls scoring an average of 19.3 points (64.3 %). This produces a relative difference of 7.3 % in favour of the boys – a non-significant difference in statistical terms ($p = 0.55$).

4.4 Comparisons and correlations

As can be seen in section 4.2, the participants attained notably higher scores in the grammar test than in the vocabulary test. Below, Figure 4.1 shows the difference between test results.

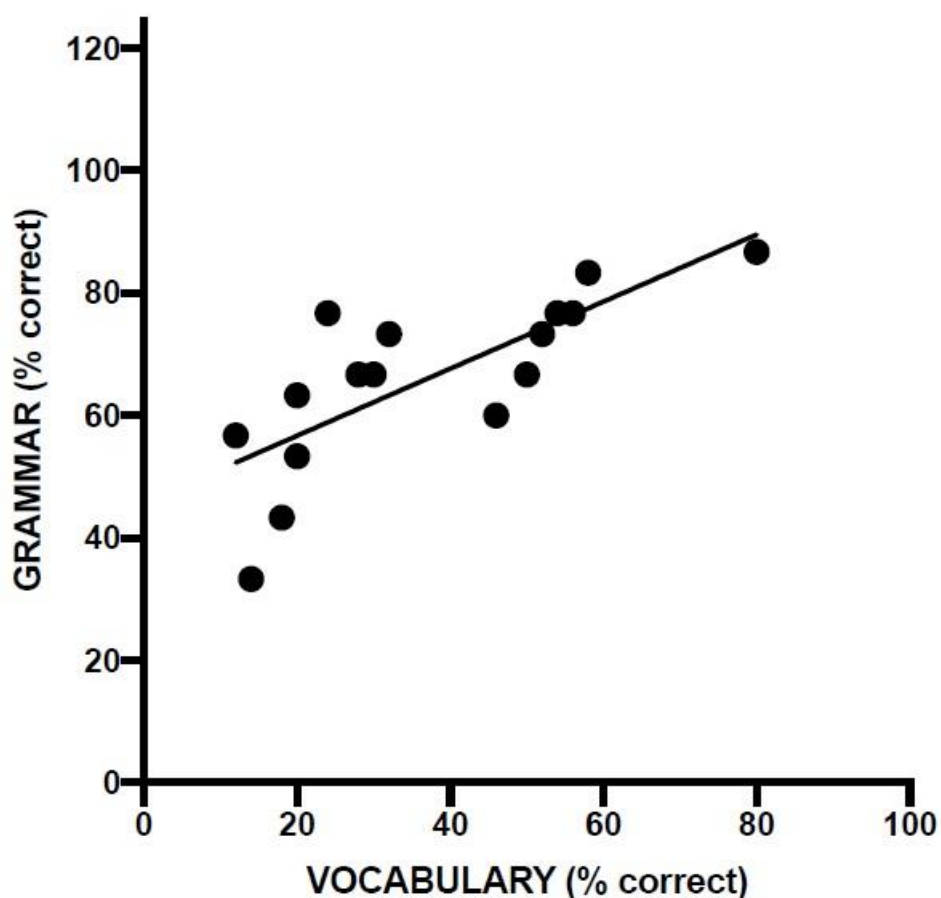
Figure 4.1: Vocabulary and grammar test scores (mean percentage (bars) and standard deviation (Ts)).



The difference between grammar and vocabulary test results is not just notable – it is also statistically significant ($p < 0.01$). On average, the participants answered 66 % (19.8 out of 30) of the grammar tasks correctly compared to a mere 37.1 % (18.6 out of 50) of the vocabulary tasks. This amounts to a difference of 28.9 percentage points, or, in relative terms, a 77.9 % difference in performance. It should also be noted that all participants attained relatively higher scores in grammar than in vocabulary.

Although vocabulary test scores varied considerably more among the participants than grammar test scores (SD 19.7 % versus 14.3 %, see Figure 4.1), there was a highly significant positive correlation between vocabulary and grammar results ($r = 0.76$; $r^2 = 0.57$; $p < 0.01$). This means that a participant having attained a high score in one test is likely also to have attained a high score in the other. The scatter diagram below (Figure 4.2) shows this correlation, with each participant's individual score represented by a black dot.

Figure 4.2: Correlation between vocabulary test results and grammar test results.

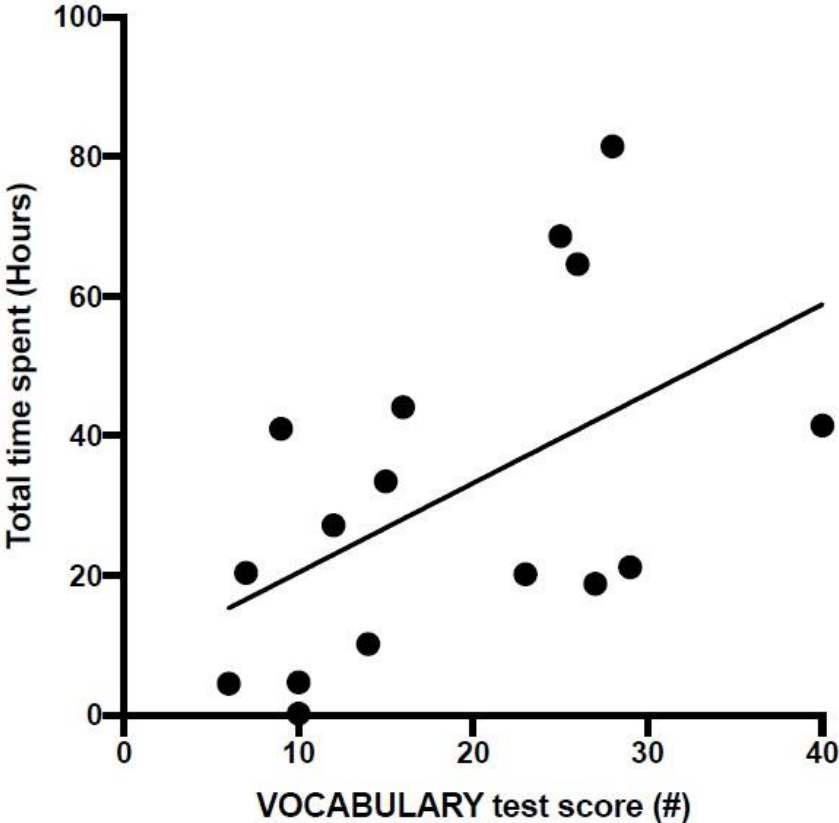


The fairly close proximity of the black dots to the straight line indicates a positive correlation between grammar and vocabulary test results. In fact, the r^2 -value of 0.57 means that 57 % of the grammar test variance could be explained by vocabulary test scores. Also, in addition to the vocabulary-grammar correlation there is a consistent significant correlation between 2,000-word level vocabulary test scores and scores in all of the remaining levels of the vocabulary test ($r = 0.74 - 0.78$; all $p < 0.05$) (see Appendix 7 for each participant's score level by level). This means that 2,000-word level test results could predict higher-level vocabulary performance to a certain extent.

One of the main objectives of the research in this thesis was finding out whether the amount of time spent on EE activities improved the participants' English proficiency and if so, which of the activities affected performance the most. When comparing the participants' language diary data to their test results, it turned out that there is a statistically significant correlation between vocabulary results and total time spent on extracurricular activities involving English ($r = 0.52$; $r^2 = 0.27$; $p < 0.05$). This means, in other words, that the participants spending the most time on

EE activities attained higher vocabulary test scores than the participants spending little time on EE activities. No significant correlation was found between amount of time spent and grammar test results ($p = 0.22$).

Figure 4.3: Correlation between total time spent on EE activities and vocabulary test results.



To check for correlations between time spent on each individual activity and English proficiency, a stepwise linear regression was performed. Out of all ten EE activities, online gaming was the only factor significantly correlating with vocabulary scores ($r = 0.60$; $r^2 = 0.36$; $p < 0.05$), while no significant correlation was found between any EE activity and grammar scores. Online gaming is, in other words, the only EE activity in this study to positively correlate with improved English (vocabulary) proficiency.

4.5 Key findings

The 16 participants spent on average 31.4 hours on extracurricular English activities throughout the week of keeping language diaries, with the most time-consuming activities being listening to music, watching YouTube and playing online games. Gender variation was however significant ($p < 0.01$), as the male participants reported spending an average of 55.1 hours on EE activities over the course of the week compared to the female participants’ weekly average

of 17.2 hours. The boys also reported spending an average of 10.0 hours playing online games, whereas none of the girls spent any time engaging in this activity. Therefore, in this study, differences between genders equal differences between online gamers and participants not playing online games.

The participants attained significantly ($p < 0.01$) higher scores in their grammar tests (mean score = 66.0 %) than in their vocabulary tests (mean score = 37.1 %). There was also a significant correlation between grammar and vocabulary test results ($p < 0.01$), and between the 2,000-word level vocabulary test scores and higher-level scores ($p < 0.05$). In addition to this, the boys outperformed the girls in both tests – though only narrowly in the grammar test (relative difference = 7.2 %). In the vocabulary test, however, there was a relative difference in results of 54 % in favour of the boys. Although notable, the difference was not statistically significant ($p < 0.1$).

Finally, two factors were found to positively correlate with the participants' English proficiency: total amount of time spent on EE activities, and online gaming. Statistically significant correlations were found between the two respective factors and vocabulary test results (both: $p < 0.05$). This means, in other words, that the participants spending the most time on EE activities and online gaming were the most likely to perform well in their vocabulary tests. No significant correlations were however found between any language diary category and grammar test results.

The results are discussed and interpreted in connection with interview data and theory on second language learning in the following chapter.

5. Discussion

5.1 Data analysis

5.1.1 Language diary data

In their language diaries, the ninth graders participating in the present study reported spending an average of 31.4 hours per week engaging in extracurricular activities involving English. Considering the fact that these same ninth graders' formal English education in school is limited to only three 45-minute lessons per week, it is highly likely that their out-of-school English activities affect their English language skills – possibly even significantly. This hypothesis is supported by recent research, which has found that extracurricular exposure to a target language improves language proficiency in learners of a second or foreign language (Yildiz, 2016; Kuimova & Ukhov, 2016). Even when 'listening to music' – the one activity listed in the language diaries that does not require paying attention to – is removed from the equation, the amount of time the participants spend engaging in EE activities is more than ten times higher (22.9 hours/week on average) than time spent learning English in school (2.25 hours/week). Still, these are average values that do not take individual variation into account. As can be seen in Appendix 5, the least amount of time one participant spent on EE activities during the week of keeping a diary was 0.23 hours, or 14 minutes. Assuming these values are representative of a typical week, the participant in question is likely to have learned most of her English in school.

The language diaries not only revealed substantial individual variation but also considerable gender variation, as male participants reported spending significantly ($p < 0.01$) more time (55.1 hours/week) on EE activities than female participants (17.2 hours/week). This was unexpected, particularly in light of findings presented in previous similar studies. Although most comparable studies have found boys to spend more time on EE activities than girls, the gender differences have been far smaller. Sylvén and Sundqvist (2012, p. 311), for instance, found that the weekly average time spent on extracurricular English was 10.6 hours for boys and 8.4 hours for girls – a non-significant difference ($p < 0.187$). The respective weekly values for boys and girls found in a study by Sundqvist (2009, p. 120) were 20.8 hours and 16.4 hours, which at $p < 0.136$ is also non-significant. Despite girls generally achieving better results than boys in Norwegian schools (NTB, 2019), the extreme difference between boys' and girls' EE habits found in the present study may explain why the male participants showed better English proficiency than the female participants.

In addition to the findings discussed above, the language diary data showed – more predictably – that boys and girls had somewhat different preferences regarding choice of spare time activities. Although ‘listening to music’ was the most popular activity for both genders, girls and boys showed different preferences for most of the other activities. The girls listed ‘watching films’ and ‘watching YouTube videos’ as their second and third most popular activities, respectively, while ‘watching YouTube videos’ and ‘online gaming’ were the second and third most popular activities among the boys. Interestingly, none of the girls reported spending any time on online gaming, making this their least popular activity. In fact, most of the girls reported spending little time on any EE activities requiring either production of English or a great degree of active participation. By contrast, all six male participants reported engaging in online gaming; an activity most definitely requiring both production and active involvement. It can be argued, though, that an activity like watching YouTube requires more participation than for instance watching TV or films, as searching for YouTube videos in English necessitates actively using the English language¹³. This means that girls had at least one semi-productive activity high on their list. Still, the boys spent more time actively engaging in EE activities than the girls, and Sundqvist (2009, p. i) and Lee (2017) both found that productive or ‘quality’ EE activities elicited better results than did activities requiring little production. This also appears to be the case in the present study. In addition to their spending less overall time engaging in EE activities, the girls’ propensity for activities requiring little production may then be a contributing factor to their being outperformed by the boys in the English tests.

It should however be mentioned that the girls reported spending more time on ‘other’ activities (17.9 hours in total; 1.8 hours on average) than the boys (20 minutes in total; 0.1 hours on average), and that the majority of this time (12.5 hours in total) was spent talking to English-speaking friends and family. This is undoubtedly an activity requiring active participation, which means that the two female participants reporting this would be likely to score relatively well in the tests – at least in theory. Supposing that these values are representative of a normal week, a weekly total of 12.5 hours of productive EE activities may still have little impact on the combined English proficiency of the ten female participants, particularly when compared to the effect 59.9 weekly hours of online gaming may have on the six male participants’ English proficiency. It may still have had an effect on their individual scores, though. Participant 7

¹³ When watching TV or films, one usually picks a channel or, if streaming, a film or TV-series from a catalogue. When watching YouTube, on the other hand, one often has to type (i.e. produce English) into the search field to find what one is looking for.

scored a few points above average (18.6) in the vocabulary test, answering 23 tasks correctly, but slightly below average (19.8) in the grammar test, attaining a score of 18. Participant 8, on the other hand, scored well above average. With 29 correct answers in the vocabulary test and 25 correct answers in the grammar test, she attained the second highest scores of all the participants in both tests.

The values on total time spent on EE activities obtained in the present study are noticeably higher than what has been found in two of the comparable studies mentioned above, in which young Swedish learners¹⁴ of English reported spending a respective weekly average of 18.4 hours (Sundqvist, 2009, p. 116) and 9.4 hours (Sylvén & Sundqvist, 2012, p. 311) on EE activities. Given that the variety in and access to material (such as streaming services for TV shows, films and music) and activities (such as digital and online games) involving the English language have increased considerably since 2009 and 2012, it is however not unlikely that similar studies conducted in Sweden today would have produced higher numbers.

5.1.2 Vocabulary test results

In the vocabulary test, the participants correctly answered an average of 18.6 out of 50 tasks (37.1 %). However, the average score does not reflect the considerable individual variation ranging from 6 to 40 correct answers (SD = 9.9), nor the relatively big difference between the boys' average score of 23.8 and the girls' average of 15.4. Considering the fact that all 16 participants were at the same point in their formal English education in school, the substantial variations in vocabulary sizes could indicate that exposure to and production of English outside of school are in fact key factors in the development of young learners' vocabularies. The interview data support this theory, as the participants interviewed reported learning new words in a variety of manners and places, with 'school' being mentioned only once in this context. Participant 5 was the only interviewee listing school as the source of her English vocabulary; the other six reported to be expanding their vocabularies when communicating with English-speaking people, watching YouTube or TV-series, reading books or 'English stuff on the Internet', or from being taught by older and more capable peers – all activities reportedly taking place outside of school. When asked *how* they gain an understanding of unfamiliar words, they related guessing from context, asking peers or looking up the words in question on the Internet

¹⁴ Sundqvist's (2009) study involved 80 Swedish ninth graders aged 15–16, whereas Sylvén & Sundqvist's (2012) study involved 86 Swedish fourth graders aged 11–12.

– either by searching for a Norwegian translation or for a definition in English (see Appendix 9: Excerpts from interview transcriptions).

The relatively substantial difference between boys' and girls' average vocabulary scores could then be explained, at least in part, by the girls spending less than a third of the time the boys spend on EE activities. This claim is supported by literature on L2 vocabulary learning, which emphasises the importance of being exposed to the target language *over time* – both because the vocabulary learning process is incremental and because learning an extensive number of words inevitably takes time (see section 2.5). Findings in the present study also support this claim, as statistically significant correlations were found between the total amount of time spent on EE activities and vocabulary scores (see section 4.4). Online gaming – an activity all six boys but none of the girls engaged in – was the only other factor to significantly influence vocabulary scores and may therefore explain more of the difference in results between genders. This, too, is a claim supported by literature on the subject, as research suggests actively engaging with the target language – as the male participants do when using English to coordinate efforts in an online game – is another crucial aspect of the vocabulary learning process (see section 2.5).

The average score of 37.1 % in the vocabulary test is not surprising, particularly when taking the difficulty of the test into consideration. Although there is no specific English vocabulary target for Norwegian ninth graders in school – competence aims simply state that upon completing tenth grade, pupils should be able to ‘understand and use a general vocabulary in connection with various topics’¹⁵ (Utdanningsdirektoratet, 2013) – it was assumed that a majority of the participants would have productive knowledge of most of the words in the 2,000- and 3,000-word level tasks and some of the words in the 5,000-word level tasks¹⁶. Only 30 of the 50 tasks were however at these levels – 10 from each level – while the remaining 20 tasks were more difficult. Excluding the university word level and 10,000-word level tasks from the vocabulary test was contemplated but ultimately decided against, as it would have eliminated the possibility of discovering participants with extraordinarily varied vocabularies. Any participant attaining a notably higher score than most would be interesting to interview to find out whether his or her EE habits diverge in any way from those of the other participants.

¹⁵ Translated from Norwegian.

¹⁶ This assumption is founded on five years of experience teaching eight to tenth graders.

As it turned out, one participant (number 4) did attain a substantially higher vocabulary score than the others. The male participant in question answered 40 of the 50 tasks correctly, whereas the second highest score was 29. Although his score stood out, his language diary data were fairly inconspicuous. In fact, he reported spending a total of 41.5 hours on EE activities throughout the week of keeping a diary – 18.4 hours *less* than the average reported by the male participants. Of these activities, online gaming (12 hours), watching TV-series (11.5 hours) and listening to music (10 hours) were the most time-consuming. Aside from spending less time in total on EE activities, participant 4's language diary data did not deviate much from those of the other male participants. However, when interviewed, participant 4 provided some potentially significant information about his habits that was not included in his language diary: Unlike most of the other participants (at least according to the language diary data and the information obtained in four of the six other interviews¹⁷), he reads books in English. At the time of the interview, he had read three of Neil deGrasse Tyson's book on astrophysics and had ambitions of reading all of them, which in all likelihood is considerably more advanced than the common practice of Norwegian ninth graders¹⁸. Though this probably does not explain the entire difference in vocabulary results between participant 4 and the other participants – several factors do after all play a role in individuals' second language aptitude (see for instance section 2.3, or Ellis, R. (2008), pp. 643–723) – reading is likely to have had some effect on his vocabulary. Reading is, after all, known both to improve language proficiency and expand learners' vocabularies (Guo, 2012; Kuimova & Ukhov, 2016; Duff, Tomblin, & Catts, 2015). The fact that participant 4 spent 20 % more time on online gaming than the average of the male participants (he spent 12 hours; the average was 10) may however also have affected his vocabulary.

The average vocabulary test scores attained in the present study (37.1 %) are relatively similar to the scores attained by the 80 Swedish ninth graders¹⁹ participating in Sundqvist's study, who out of 45 tasks answered an average of 16.1 correctly (35.8 %) (2009, p. 148). The vocabulary test in the present study and the productive vocabulary test in Sundqvist's study are both based on the same Vocabulary Levels Test (Laufer & Nation, 2019), and although some of the tasks are identical (see Appendix 12 in Sundqvist, 2009 and Appendix 2 in the present study), there is one substantial difference between the two tests: The majority of the tasks in Sundqvist's test

¹⁷ When interviewed, two other participants (number 1 and number 7) reported reading or having read books in English. Also, participant 3 reported reading news in English in his language diary.

¹⁸ Participant 1 also reported having read two English books on astrophysics.

¹⁹ 15-16-year-olds; corresponding to Norwegian tenth graders.

were 5,000-word level or lower level tasks (a few were university level), whereas 20 out of 50 tasks in the present study were university- and 10,000-word level tasks. Even though the participants in Sundqvist's study were given more lower-level tasks and were a year older than those participating in the present study, the two studies are likely to be comparable. In the 11 years having passed since Sundqvist conducted her study, technology has progressed massively, meaning that most people are likely to spend more time receiving digital input²⁰. Considering that English is 'the language of the Internet', with English constituting more than half of Internet content (Q-Success, 2020), this probably means that people also receive an increased amount of input in English. In addition to this, online gaming has become significantly more advanced over the past decade, particularly in terms of the possibilities for oral communication in real-time. Discord, which is the app used for in-game communication by the participants in the present study (see Appendix 9), was for instance not launched until 2015. This app allows online gamers to create their own private 'servers', for free, and communicate and cooperate through these while gaming (Gonzalez, 2018). Had Sundqvist's study been conducted a decade later, her participants would most likely have attained higher scores, as the participants would probably have received more input in English and the possibilities for interacting with others in English would be more varied and readily available.

5.1.3 Grammar test results

The participants' scores were both higher and more consistent in their grammar tests than in their vocabulary tests. The average grammar scores were 19.8 out of 30 possible points, or 66 % correct answers, and individual scores ranged from 10 to 26 points (SD = 4.3). This could for instance indicate that the grammar test was easier than the vocabulary test, or that most of the participants' grammar knowledge is obtained in school – or a combination of both. In the interviews, the participants were asked what they believed to be the main source of their grammar knowledge; a question to which five of the seven interviewees replied 'school'. Of the other two interviewees, one was unsure of where she learned the most grammar and the other believed having learned grammar from hearing people talk. It appears from these answers that a majority of the participants believe most of their grammar knowledge to originate in formal education, which, when taking their consistent grammar test results into consideration, is likely. The considerable individual differences in both choice of EE activities and time spent

²⁰ Bakken (2019, p. 2), for instance, has found that screen time among Norwegian teenagers is increasing.

engaging in them do not, then, appear to significantly have affected the participants' grammar skills.

Grammar being learned primarily in school merely explains the grammar score consistency and not the substantial difference between grammar scores and vocabulary scores. A possible explanation for this difference is, as mentioned above, the grammar test being less demanding than the vocabulary test. This is probably the case, at least partly, as the Cambridge Advanced English test is at the CEFR's C1 level (University of Cambridge Local Examinations Syndicate, 2020a), whose difficulty roughly corresponds to the 5,000-word frequency level (Oxford University Press, 2020). This means, in other words, that the university- and 10,000-word level tasks in the vocabulary test – i.e. two fifths of it – most likely were more difficult than the grammar tasks, which may explain some of the divergence between results in the two tests.

In addition to this, the different respective designs of the two tests may have influenced test scores. The grammar test was, after all, a multiple-choice test with three alternatives per question, which means the chance of guessing the correct answer was 33 %. To correctly complete the tasks in the vocabulary test, on the other hand, participants were required to have productive knowledge of the partly written words in each task, as well as sufficient knowledge of contexts in which the words would typically be used. Some guesswork may have gone into the process of answering certain tasks, at least for some of the participants, but it is highly unlikely that the chance of guessing a correct answer in the vocabulary test is as high as 33 %. The chance of this is most likely significantly slimmer, as – unlike in the grammar test – there were no pre-given alternatives to choose between.

In the grammar test, too, the male participants attained higher scores than the female participants. The difference between genders was however slight, with boys and girls answering a respective average of 20.7 and 19.3 out of 30 tasks correctly. The difference is highly insignificant at $p = 0.55$, meaning that the probability of the boys scoring higher than the girls due to differences in their EE habits is low. Lack of statistical significance does not however mean that correlations are non-existent. As the male participants attained notably higher scores in their vocabulary tests than the female participants, it would not be surprising if they were more proficient than the girls in other aspects of English, too – even if these differences are slighter.

The total scores of each participant in the grammar test were, as discussed above, fairly consistent, whereas task by task results were rather varied (see section 4.3 and Appendix 8). The most difficult task, in which only three of the participants circled the correct alternative, was the very first task in the grammar test. Here, the problem to solve was which verb tense out of the past perfect, the simple past and the present perfect tense was correct in the given context.

Task 1: John me three times
 already this morning, and I've
 only been at work for an hour.

A had phoned
B phoned
C 's phoned

Although Norwegian rules of syntax and tense correspond almost perfectly to those of English in the sentence in task 1, 13 of the 16 participants circled either A or B, i.e. one of the two incorrect alternatives. Taking theory on cross-linguistic influence (see section 2.3) into consideration, the parallels between Norwegian and English in task 1 should have made identifying the correct alternative an easy task; yet this was not the case. The use of contractions in English may however have obstructed any beneficial cross-linguistic influence, as contracting words is a virtually non-existent phenomenon in written Norwegian. The fact that the correct alternative in task 1 was the only alternative in which there was a contraction ('s phoned') and that the finite verb in the following clause also was contracted ('I've'), may have prevented cross-linguistic influence from being of any assistance to the participants. Also, this particular task may be difficult for other reasons. Although alternatives A and B are grammatically incorrect in written language, it is not unthinkable that alternative B, at least, could have been uttered in spoken English, even by native speakers. Spoken and written language do not, after all, follow the same linguistic norms (Linell, 1982, pp. 75–76). Therefore, according to the norms of spoken English, alternative B may also be an acceptable answer.

Of the tasks that few participants answered correctly, it appears unfamiliarity either with words²¹ or grammatical construction is a recurring theme. There were for instance only four

²¹ Being unacquainted with certain words may appear to be more strongly connected to vocabulary than grammar. The problem of distinguishing between grammar and vocabulary is further discussed in section 5.1.4.

correct answers to task 23; a task in which participants were supposed to choose the correct conjunction. In this case, the correct answer was ‘whereas’.

Task 23: Nick is always out playing football
 or cycling, his brother
 prefers to stay indoors reading or
 watching television.

- A in contrast
- B whereas
- C instead

Based on a search of the 60,000 most frequent words in the Corpus of Contemporary American English (Davies, n.d.), it can be argued that this might be an unfamiliar word to most Norwegian ninth graders. Although ‘whereas’ is listed as the 2748th most frequent word, which falls within the category of words (up to 3,000-word frequency level) most of the participants are expected to know, the database also reports ‘whereas’ to be a word mainly used in academic texts. ‘Whereas’ is after all a conjunction that connects two contrasting ideas (Cambridge Dictionary, 2020) and is therefore commonly used in argumentative or academic literature. This is most likely not a type of literature frequently encountered by Norwegian teenagers – particularly in their second language – and ‘whereas’ may therefore be an unfamiliar word to many of them.

Task 7 also elicited few correct answers, with only five participants circling the correct alternative. Here, subject-verb agreement was the problem – another structure not transferrable to the Norwegian language.

Task 7: Today’s *Times* reporting that
 the number of people emigrating from
 the country risen to record
 levels.

- A is ... have
- B is ... has
- C are ... have

In Norwegian, the verb form is fixed regardless of who or what the subject of the sentence is. Lack of similarity between the languages and thereby lack of positive transfer possibilities may

then have contributed to the low number of correct answers in task 7. Subject-verb agreement is also a structure that according to Pienemann's Processability Theory is learned fairly late in the grammar learning process, and several of the participants may simply not yet have mastered this stage.

By contrast, it seems the tasks most or all participants answered correctly either had Norwegian-like structures or familiarly worded alternatives. Task 5, for instance, was answered correctly by all 16 participants. Here, the task was to choose the verb and tense most suitable in the given context.

Task 5: My parents gave me the money for
 the car. I have afforded to
 buy it myself.

- A couldn't
- B can't
- C mustn't

With a sentence structure similar to that of Norwegian and the correct alternative ('could'²²) being the 71st most frequent word in the Corpus of Contemporary American English (Davies, n.d.), both cross-linguistic influence and familiarity with the word in question may have assisted participants in choosing the correct alternative. It should be noted that there were contractions in task 5, too, but that these were identical for all three alternatives ('couldn't', 'can't' and 'mustn't') and did not directly interfere with the verbs as 'not' was the only word affected. They are therefore unlikely to have hampered the participants' ability to solve the task.

Task 11 was also answered correctly by all the participants. In task 11, the problem to solve was choosing the correct quantifier and deciding whether or not to include the definite article.

Task 11: Although the villagers were very
 poor, they were always happy to share
 with us food they had.

- A the few
- B little
- C the little

²² The correct alternative was in fact 'couldn't', but searches for contracted words resulted in error messages.

The syntax of this sentence, at least the clause after the comma, differs from the syntax of a corresponding Norwegian sentence. Even so, all 16 participants chose the correct answer. Despite the different syntax, it is likely that positive transfer has assisted the participants in this task, too, as the three alternatives have very similar Norwegian counterparts and ‘the little’ would be the correct answer also in Norwegian. Additionally, both ‘little’ and ‘few’ are common words in the English language (in the Corpus of Contemporary American English, they are ranked in place 256 and 185, respectively (Davies, n.d.)), which means they should be very familiar to the participants.

According to Pienemann’s Processability Theory, most of the participants may be placed approximately at the fifth stage of their English grammar learning process (see section 2.4). This is mainly based on their struggles with subject-verb agreement. However, only one of the grammar tasks included this particular structure, which means it would be imprudent to draw any firm conclusions on the basis of this alone. Interestingly, though, the participants’ answers in the vocabulary test add some weight to the argument that many of them may indeed be placed at Pienemann’s fifth stage. In tasks 16 and 17 (‘The farmer sells the eggs that his he _____ lays.’ and ‘Sudden noises at night sca_____ me a lot.’), several participants wrote ‘hens’ and ‘scares’; answers which indicate that the participants in question have not yet mastered subject-verb agreement. In fact, only three participants correctly wrote ‘hen’, whereas four participants correctly wrote ‘scare’ – and none had subject-verb agreement in both tasks. It should be noted that ‘hens’ and ‘scares’ were both marked as correct answers, as the participants writing this showed productive knowledge of the words despite incorrectly adding inflectional s’s. In total, 11 participants answered task 16 correctly, and all 16 participants answered task 17 correctly (spelling or grammar mistakes disregarded).

5.1.4 Correlations and grammar-vocabulary distinction

As shown in chapter 4, statistically significant ($p < 0.05$) positive correlations were found between two respective variables and vocabulary results. These variables were online gaming – i.e. gaming in which participants communicated with other gamers – and the total amount of time the participants spent on extracurricular English activities. This means that engaging in extracurricular activities involving English appears to have an effect on the English vocabulary of the Norwegian ninth graders participating in the present study. It is however important to note that correlation does not necessarily imply causation (George & Mallery, 2020, pp. 141–

142), but if further larger-scale research reveals similar findings, it is likely that the relationship between out-of-school English language practices and vocabulary proficiency is in fact causal.

The strongest correlation was found between online gaming and vocabulary scores ($r = 0.60$; $r^2 = 0.36$; $p < 0.05$), which was not unexpected but interesting nonetheless, particularly when taking the interview data into account: Three of the four male participants who were interviewed believed not to have learned much vocabulary from gaming, as they reported mostly using the same words and phrases over and over (see Appendix 9, interviews with participants 3 and 4). Participant 4 did however add that he sometimes speaks with people between games and that the language used in these conversations is more advanced and less rushed than in-game language. The players also talk to each other as if they know one another properly; ‘making jokes and things’, and therefore do not normally use standardised phrases to get to know one another. This could mean that it is not online gaming itself that leads to more extensive vocabularies, but rather the conversations between games. Another possibility is that the participants use more advanced or diverse English while playing than they believe themselves, or that they learn more than they think when using English to coordinate efforts in real time. This is further discussed in section 5.3.

The correlation between total amount of time spent on EE activities and vocabulary scores was, as mentioned above, also statistically significant ($r = 0.52$; $r^2 = 0.27$; $p < 0.05$). No significant correlations were found between the remaining nine variables and vocabulary results, nor between any variable and grammar results. Lack of statistical significance does not however equal lack of association. The mere fact that there was a correlation between total time spent on EE activities and vocabulary results, for instance, suggests that more than one and possibly all of the different activities did affect the participants’ English proficiency. Neither activity, except for of course online gaming, had any statistically significant impact on proficiency on their own, but combined the activities were found to improve participants’ English skills. It can therefore be argued that most or all of the different EE activities contributed – albeit to different degrees – to the improvement of the participants’ vocabularies.

In addition to this, there was a strong positive correlation between the vocabulary and grammar test results ($p < 0.01$), meaning that a participant performing well in one of the tests was likely also to perform well in the other. This suggests that although no variable – single or combined – was found to influence grammar scores to any statistically significant degree, EE activities may at the very least have had an indirect effect on the participants’ grammar skills. Most of

their explicit grammar knowledge may have been obtained in school, but both the test result correlation between vocabulary and grammar and the fact that all 16 participants attained a higher relative score in the grammar test than in the vocabulary test indicate that English activities outside of school also account for some of the participants' grammar competence. It is unlikely that such results would occur purely by chance, and particularly unlikely that exposure to and use of a language would have no impact on participants' grammar skills.

This is supported by relatively recent theory on language use and languaging, which shows that any activity involving the use of language may lead to the development of language skills (see for instance Dufva, Aro, & Suni, 2014, p. 26). Some of the data from the interviews also support out-of-school grammar learning: Although most of the participants who were interviewed believed to learn most of their grammar in school, participant 3 claimed to have obtained most of his grammar knowledge from hearing people – British people in particular – talk. Participant 4, too, reported learning grammar partly outside of school, but from reading rather than hearing people talk, as in his experience, the latter would often be 'ungrammatical'. Participant 4 also believed having learned explicit rules of grammar in school but syntax and sentence structure outside of school (see Appendix 9). It is however likely that many ninth graders associate the term 'grammar knowledge' with the explicit knowledge of rules and structures typically learned in school, and therefore fail to realise that they might also be 'picking up' some grammar knowledge from their everyday use of English. There are, after all, different norms of grammar for spoken and written language (Linell, 1982, pp. 75–82; Knapp & Watkins, 1994, p. 1), but it is quite possible that schools' focus on the prescriptive grammar of written language overshadows this distinction. This may also be why participant 4 regarded spoken English as 'ungrammatical'.

Furthermore, treating grammar and vocabulary as entirely separate and independent parts of language is impossible. Rather than being autonomous entities, grammar and vocabulary are interdependent components of the same phenomenon, namely lexicogrammar, that overlap in several – though far from all – areas. Morphological markers, for instance, provide grammatical information, but are part of lexical items (see section 2.5). Collocations, too, have both grammatical and lexical characteristics. Sometimes referred to as 'phrases' (Kennedy, 1990, p. 217), collocations may be considered relatively fixed structures and thereby a grammatical component of language. Other terms describing collocations, such as 'phrasal vocabulary' (Schmitt, 2008, p. 340), stress their relationship with vocabulary. Robert de Beaugrande argues that the ambiguity of collocations stems from their fairly loose structures; that they are partly

conforming to the constraints of both grammar and vocabulary and thereby ‘operate [...] along the interface between lexicon and grammar’ (1997, p. 45). In a later article, de Beaugrande even predicts an impending ‘paradigm shift’ after which language will be considered a ‘dynamic system of relations’ rather than the ‘static system of units’ it is considered by some to be today (2001, p. 129). All this theory underlines the interconnection and interdependence of different components in language; grammar and vocabulary in particular. The interconnectivity and overlapping of linguistic components mean that activities affecting vocabulary skills must necessarily also affect grammar proficiency – at least to some extent.

5.2 Reliability, validity and methodological choices

5.2.1 *Methodological choices*

To investigate whether extracurricular English activities influenced the participants’ English proficiency, two variables needed to be measured: the amount of time the participants spent engaging in different EE activities, and each participant’s level of proficiency in English. A quantitative method was deemed the most practical and reliable for this, as numbers are easily compared and allow for statistical interpretation. It was also considered beneficial to employ methods similar to those of previous studies on related matters, as this would facilitate comparing findings. Both the language diary and the vocabulary test were comparable to the diaries and vocabulary tests in the Swedish studies referred to in the present study (see Sylvén & Sundqvist, 2012; Sundqvist & Wikström, 2015; and Sundqvist, 2009). Another practical matter considered was the fact that measuring and evaluating skills on the bases of open tasks or language samples would require both an extensive amount of time and careful assessment procedures, and findings would be harder to interpret and compare. Considering the ease with which findings can be interpreted and compared, the quantitative method chosen is believed to have been the most reliable and practical choice in the present study for measuring the two variables listed above.

However, in a study where human behaviour influences at least one of the variables measured – in this case individuals’ choice of EE activities and the amount of time they spend engaging in them – a qualitative component provides valuable insights which cannot be gained from quantitative data. To triangulate results and to help with the interpretation of the quantitative findings, interviews with seven of the participants were therefore conducted. Interviewing only a selected few and not all 16 participants is not ideal but was considered sufficient for the purposes mentioned above, i.e. to supplement and enrich the analysis and interpretation of the

quantitative values. The value of qualitative research – interviews in particular – is elaborately explained and emphasised by Carl Ratner. He points out, for instance, that statistical relationships between variables may be discovered by positivistic research, but that interviews can provide the data necessary to explain them (2002, p. 151). In the case of the present study, statistical relationships between participants' language diary data and test results were found, but it was the interviews that provided the details and nuances making it possible to analyse the quantitative findings in context. Interviews also provide the possibility of probing for potentially vital information that would not have been revealed through quantitative research or questionnaires (Ratner, 2002, pp. 147–148), like for instance the fact that some of the present study's participants typically spend more time reading books in English than what was reported in their language diaries (see Appendix 9: interviews with participants 1, 4 and 7). Unlike the quantitative research, the qualitative data also reveal where and how the participants believe to have learned most of their English (see Appendix 9).

The mixed-method approach is regarded by some as exclusively advantageous (Sechrest & Sidani, 1995, p. 77), or at least as the approach with the fewest weaknesses (Velez, 2008, p. 9) – particularly in social science research. Using two (or more) different methods means the research is double-checked: findings can be verified or contradicted, and errors that may otherwise have gone unnoticed may be unearthed. This means, in other words, that the quantitative and the qualitative approaches complement each other and offer the possibility of triangulating research (Sechrest & Sidani, 1995, pp. 77, 85). Triangulation entails using at least two aspects of research to increase confidence in both method and results (Thurmond, 2001, p. 253). In the present study, quantitative research constitutes most of the data, and qualitative research enables the data to be interpreted and explained in context. Finding out more about the ways in which participants communicate with others in English, i.e. their productive and interactive use of English in online gaming and other social situations, was highly important to the analysis, interpretation and discussion of the quantitative findings.

5.2.2 Reliability

Reliability and validity are factors traditionally used to evaluate the quality of quantitative research (Golafshani, 2003, p. 597). Qualitative research, on the other hand, does not have a standard of evaluation corresponding to reliability and validity (Mays & Pope, 2000, p. 50). However, terms like representativeness, rigour and relevance are often used when assessing the quality of qualitative studies (Kitto, Chesters, & Grbich, 2008, pp. 243–244). Because different

criteria are used to evaluate the two research methods, the quantitative and the qualitative components of the present study will be evaluated in light of their respective criteria. The focal points of the current section and section 5.2.3 are the quantitative components, with theory on reliability and validity briefly being presented before being applied to the quantitative research conducted in the present study. Following this, in section 5.2.4, is an outline of some theory on the evaluation of qualitative research and an assessment of the present study's qualitative element; i.e. the interviews. Finally, section 5.2.5 briefly addresses the generalisability of the research.

The reliability of a measurement is determined by the accuracy and consistency of said measurement. A study or measurement, then, is considered reliable if its results can be reproduced using a similar methodology, and if the measurement accurately represents the population being studied. Results should also be consistent over time (Golafshani, 2003, p. 598). The consistency of a measurement over time is also known as the measurement's test-retest reliability. To assess test-retest reliability, the same test is administered to the same group of people at two or more different points in time before the correlation between test results is calculated. In a measurement like the vocabulary test, where several tasks are intended to measure the same factor²³, the internal consistency of the test can also be calculated (Price, Jhangiani, & Chiang, 2016, pp. 87–89).

In the present study, three quantitative measurements were administered to the 16 participants. These were the vocabulary test, the grammar test, and the language diary. In their original and complete forms, both tests have been evaluated by their creators and found to be both reliable and valid (Laufer & Nation, 1999; University of Cambridge Local Examinations Syndicate, 2020b). The vocabulary test has been found to be satisfactory 'for diagnostic purposes' (Laufer & Nation, 1999, p. 44) and was therefore well-suited to the present study, as the main objective of using this test was determining the size of the participants' vocabularies at one point in time. An evaluation of the specific grammar test used in the present study was not found, but the UCLES reports their exams to be fair, relevant, and of high quality (University of Cambridge Local Examinations Syndicate, 2020b). In the present study, however, the tests were not administered to the participants in their complete forms: The vocabulary test was assembled using 50 of the original test's 90 tasks (Laufer & Nation, 2019), and the grammar test was assembled using 30 of the original 75 tasks (Hewings, 2019). The reliability of the less

²³ Productive knowledge of words, in this case.

comprehensive versions of the tests used in the present study has not been formally evaluated, but as no changes were made to the tests other than excluding a number of tasks from each, it can be argued that the reliability of the tests remains the same.

Because of the different test designs, the vocabulary test is arguably more reliable than the grammar test. In the grammar test, participants were presented with the option of choosing which of three given alternatives was the correct in each task. As all 16 participants had answered all tasks, and none had answered all correctly, it is reasonable to assume that some of the tasks were answered on the basis of sheer guesswork. In theory, no knowledge of the grammatical structure in a given task would be needed to guess the correct alternative. In the vocabulary test, on the other hand, participants had to draw on their productive knowledge to answer the tasks correctly. If the missing word of a given vocabulary task was unknown to a participant, the chance of guessing it correctly would be microscopic. It is of course difficult to estimate the number of correct answers attained through guesswork or impulsive choice, but it is highly likely that this number is higher for a multiple-choice test than for a productive test like the one measuring participants' vocabulary. Therefore, the vocabulary test should be more accurate in measuring the size of participants' vocabularies than the grammar test is in measuring their grammar knowledge. The test-retest reliability is probably also higher for the vocabulary test than for the grammar test. Participants may admittedly perform differently on account of day-to-day variations, but overall, a productive test should elicit more consistent answers than a test in which guessing is possible. If uncertain, a participant might choose a different alternative when completing the grammar test for the second time²⁴. Having no alternatives to choose from, it would be more difficult to choose a different answer in the vocabulary test²⁵.

The language diary design was inspired by the language diaries used in Sundqvist's (2009, p. 239) and Sylvén and Sundqvist's (2012, p. 321) studies. In the diaries, the participants wrote down the number of hours they spent each day on the ten different activities listed. The reliability of the language diaries has not been formally evaluated, but Sundqvist collected two separate one-week language diaries from each participant (2009, p. 89). By doing this, the reliability of her language diary data would be increased. In the present study, on the other hand, language diaries were collected only once. Thus, there was no possibility of recognising

²⁴ Variability in learners' judgments is a known problem with grammaticality judgment tests (Ellis R., 2008, p. 587).

²⁵ As the participants in the present study were tested only once, these are however merely speculations.

variations or calculating average values and thereby increasing confidence in each participant's typical weekly values. Furthermore, the language diaries relied on self-reporting (this has been discussed also in section 3.7). Objective measurements would most likely have been more accurate but would have been difficult to administer. The fact that participants appeared to take the task of completing their language diaries very seriously, on the other hand, increases confidence in the diary data. Moreover, it is unlikely that participants would have anything to gain from deliberately altering their language diary data, as engaging in the different activities listed in the diary is neither illegal nor – in all likelihood – embarrassing. Also increasing the reliability of the language diary data is that the diaries were kept in a regular school week. As there are more school weeks than holidays²⁶, the data should be fairly representative of a regular week. However, weekly variations may still be notable, even between two school weeks (though smaller than the possible variations between holiday weeks, as pupils would then have the entire day at their disposal, every day), which means that consistency may be lower than what would be ideal. Still, the probability of all or most of the participants diverging significantly from their usual EE habits in the one week of keeping language diaries is very low. In sum, the reliability of the tests is higher than that of the language diary, as the diary has more elements of uncertainty than the tests. Nevertheless, the diary data should be fairly representative of each participant's typical week and are therefore considered sufficiently reliable for the purposes of the present study.

5.2.3 Validity

The validity of research is determined by the extent to which said research accurately measures what was intended to be measured (Price, Jhangiani, & Chiang, 2016, p. 90). In the present study, the vocabulary and grammar tests were designed to measure the participants' knowledge of words and grammar, respectively, and the language diaries were designed to measure the amount of time each participant spent on 10 different extracurricular activities involving English over the course of one week. The validity of these three research components will be discussed in the current section. It should be noted that reliability sometimes assists in determining the validity of a study or measurement, as high test-retest reliability and internal consistency may indicate that the intended construct is indeed what has been measured (though not necessarily) (Price, Jhangiani, & Chiang, 2016, p. 90).

²⁶ In Norway, ninth graders have 39 weeks of school and 13 weeks of holiday in a year

As mentioned in section 5.2.2, the vocabulary and grammar tests have both, in their original forms, been found to be both reliable and valid by their creators. There is little reason to believe that the validity of the tests has decreased significantly as a result of excluding a number of tasks from each test – particularly when it comes to the vocabulary test. In it, all tasks at each word frequency level are similarly constructed and measure knowledge of words at the same difficulty level. This means that the main and only difference between the original test and the one used in the present study is the latter including fewer tasks, which means that it measures knowledge of fewer words. The content validity of the test, which is determined by the extent to which a test measures all aspects of the intended construct (Heale & Twycross, 2015, p. 66) – in this case knowledge of words at different word frequency levels – should therefore still be high.

The validity of the grammar test may however have decreased somewhat as a result of it being less comprehensive than the original. Unlike in the vocabulary test, where productive knowledge of words is the only construct being measured, grammar tests – the one in the present study included – test the knowledge of a variety of different grammatical structures. When choosing which of the 75 original tasks to include in the grammar test of the present study, one of the main objectives was to preserve as much as possible of the original test's diversity. It was however inevitable that the original test of 75 tasks ended up being more diverse and comprehensive than the revised 30-task test. The content validity of the grammar test is then somewhat reduced after the exclusion of several of the original test's tasks.

It is argued that the content validity of the language diary, on the other hand, is high. With nine specified activities listed and a tenth category in which the participants themselves could provide information about the activities they had engaged in, the diary should cover most existing EE activities.

Assuming that the participants' self-reporting is fairly accurate, the language diary's construct validity should also be high. The construct validity of a research instrument is determined by the 'extent to which a research instrument (or tool) measures the intended construct' (Heale & Twycross, 2015, p. 66). For the present study, this means that the language diary data should reflect the actual EE habits of the participants in the week of keeping a diary, and many correct answers in the vocabulary and grammar tests should mean that the participants performing well are in fact proficient in English vocabulary and grammar. Unless participants have severely miscalculated time spent on different EE activities or deliberately modified diary values, and

there is no reason to believe they have done either, the construct validity of the language diary should be high.

The construct validity of the vocabulary test also is high. The original test has been found to ‘show the gradual mastery of the successive frequency levels of the test as proficiency increases, indicating that it is a valid measure of vocabulary growth’ (Laufer & Nation, 1999, p. 41). The vocabulary test should, in other words, accurately measure the intended construct, which in this case is productive vocabulary size across different word frequency levels. The different levels are also fairly homogenous. This means that each level of the test measures one construct; namely vocabulary size at the given word frequency level. Homogeneity is one of the factors that can be used to determine the construct validity of a measurement (Heale & Twycross, 2015, p. 66).

The construct validity of the grammar test is somewhat lower than it is for the vocabulary test and the language diary. One reason for this the grammar test being a multiple-choice test, as it is difficult to ascertain whether a multiple-choice test actually measures the knowledge of test subjects and not their ability to guess. In the ninth grade, though, after having learned English in school since the first grade, it is reasonable to assume that pupils have a fair amount of English grammar knowledge. In fact, when taking the discussion on Pienemann’s Processability Theory into account (see section 5.1.3), most of the participants may be placed at the fifth of six grammar proficiency stages, which means they should be quite proficient. The ninth graders participating in the present study have therefore most likely answered a majority of the tasks on the basis of grammar knowledge, but they have probably also resorted to guessing when answering tasks of which they were uncertain. Unless a structure were entirely unfamiliar to participants, though, it is likely that their guesses were somewhat educated and not just shots in the dark. The grammar test being a multiple-choice test may then have reduced its construct validity to some extent, but it is still likely mainly to measure the intended construct; i.e. the grammar knowledge of the participants.

The other factor possibly lowering the construct validity of the grammar test is the fact that grammar and vocabulary are constrained by each other and overlap in certain areas – like for instance in collocations (Carter, 1998, p. 51). To answer grammar tasks like number 23 (this task is also discussed in section 5.1.3), for instance, the participants would need to have a certain receptive vocabulary in addition to knowledge of the types of sentences requiring different conjunctions. They would, in other words, need to know both the meaning of the word

‘whereas’, which was the correct answer, and the types of sentences (contrastive) in which the word typically occurs. This means that the grammar test may measure more than just the intended structure – i.e. grammar knowledge – and thereby is less homogeneous and has lower construct validity than the other two quantitative components. Although this is the case for some of the grammar tasks, most of the tasks mainly measure grammar knowledge. It should also be mentioned that although the grammar test measures knowledge of several different structures in grammar and therefore may appear less homogeneous than the vocabulary test, the construct being measured still is grammar knowledge. As ‘grammar knowledge’ encompasses a greater variety of components than vocabulary knowledge does, a grammar test would necessarily need to include a greater variety of tasks.

Finally, it should be noted that some theory argues that language out of context – like that of the vocabulary and grammar tests – loses its meaning (Dufva, Aro, & Suni, 2014, pp. 23–24; O’Keeffe, McCarthy, & Carter, 2007, pp. 24–26). It is therefore possible that some of the participants would have shown more extensive vocabulary and grammar knowledge in authentic situations than they did in the tests. In that case, the validity of the tests would be somewhat decreased, as they would not accurately measure the intended constructs.

5.2.4 Qualitative research assessment

The diversity in qualitative research approaches as well as the vast number of different criteria for assessing their quality make evaluating qualitative research a complicated endeavour (Kitto, Chesters, & Grbich, 2008, p. 243). As this is a mixed-method study in which the qualitative research component – i.e. the interviews – involves less than half of the participants, assessing this research is an even less straightforward process. The qualitative research of the present study will therefore be evaluated on the basis of factors deemed relevant and applicable to this particular research. Among these factors are relevance, rigour and consistency.

In a mixed-method study like the present one, it is reasonable to determine whether the qualitative research component is relevant and worth including. To assess the relevance of qualitative research, it should be determined whether the research increases knowledge in a way that is useful to the study (Mays & Pope, 2000, p. 52). In the present study, the interviews have provided information considerably more detailed than the study’s quantitative components. This is valuable when discussing and exploring why, for instance, online gaming correlated with increased vocabulary proficiency, as the interviewees’ explanations of how they communicate when playing online games may help gain an understanding of why this

correlation exists. The interviews have also provided information that may support or contradict hypotheses and quantitative findings. The consistent grammar results, for instance, could be a result of the participants learning most of their grammar in school; a hypothesis supported by the interview data. Furthermore, the language diary data included information of all the participants spending a combined weekly total of 25 minutes reading books in English; a total which, according to the interviews, is likely to be lower than that of an average week. Contradictory data lead to more questions, which may facilitate a richer discussion and also encourage further studies. The qualitative component of the present study has, then, increased knowledge in a way that is useful to the study, as information obtained in the interviews can be used to deepen the understanding of the participants' extracurricular language practices and corroborate or contradict hypotheses and findings.

Assessing the rigour of a qualitative measurement involves scrutinising both the research procedure, the interpretation of the data, and the study's ethical aspects (evaluative rigour). Procedural rigour mostly involves the transparency of the study (Kitto, Chesters, & Grbich, 2008, pp. 244–245). To ensure this, detailed information on the interview process is given in section 3.4, and both the interview guide and excerpts from the interview transcriptions are provided as appendices (see Appendices 4 and 9). Next is interpretative rigour, which involves 'as full as possible a demonstration of the data/evidence' (Kitto, Chesters, & Grbich, 2008, p. 244). To ensure a nuanced demonstration and interpretation of the data, multiple researchers should analyse the findings, and related theory should be applied to the process. Triangulation also increases interpretative rigour (Kitto, Chesters, & Grbich, 2008, pp. 244–245). In the present study, the data were analysed in light of previous findings and theory, and both quantitative and qualitative data were collected for the purpose of triangulating findings. The data analysis has however not involved multiple researchers. Had this been done, the interpretation of the data might have been more nuanced. Finally, the ethical aspects of the present study have been evaluated and approved by the Norwegian Centre for Research Data (NSD).

Consistencies in research process and product are considered essential criteria for quality in qualitative research (Golafshani, 2003, p. 601). In the present study, a semi-structured interview format was decided upon to ensure a satisfactory degree of consistency but also the opportunity of asking follow-up questions to gain a deeper understanding of the interviewees' EE practices. A semi-structured interview is conducted using an interview guide with a set of pre-prepared questions, and thereby 'elicits reliable, comparable data because it asks all the subjects the same

specific questions' (Ratner, 2002, p. 154). Despite allowing for probing and follow-up questions, semi-structured interviews have an overarching order and structure that make them consistent and comparable. In the interviews of the present study, the interviewees were for instance all asked where or how they learn the most English. These answers were easily comparable, and there was a possibility of asking follow-up questions about specific aspects of English or how, if relevant, they assist each other in the learning process. The interviewees were also asked what motivates them to engage in the different EE activities. For participant 3, the main motivation to play online games was the social aspect of it. The remaining three male participants interviewed did not mention this at first, but when asked specifically, all three of them confirmed that the social aspect is in fact one of the reasons why they, too, engage in online gaming (see Appendix 9). Both the interview process and the product were, then, fairly consistent.

Furthermore, it is particularly important in qualitative research to address deviant or negative cases, i.e. cases that deviate markedly from or contradict the general findings (Kitto, Chesters, & Grbich, 2008, p. 245; Mays & Pope, 2000, p. 51). In the present study, deviant or contradictory findings in both the quantitative and the qualitative data are addressed. Participant 4, for instance, attained a notably higher score than the other participants in the vocabulary test. Although he reported spending a fair amount of time both on online gaming (12 hours/week, see Appendix 5) and EE activities in general (41.5 hours/week, see Appendix 5), which are both factors positively correlating with vocabulary knowledge, these data were inconspicuous and could therefore not explain participant 4's extraordinary vocabulary results. This has been addressed in section 5.1.2. The qualitative data also revealed discrepancies between the language diary data and information obtained in the interviews. In the interviews, two of the participants (4 and 7) reported reading books in English despite not having reported spending any time on this in their language diaries. This has been briefly addressed both in the current section and in sections 5.1.2 and 5.4.

5.2.5 Generalisability

In both quantitative and qualitative studies, the ability to generalise findings is considered important (Golafshani, 2003, p. 603). When participants are recruited on the basis of convenience, as in the present study, the generalisability of the research is generally considered weak. Convenience was however not the only criterion in the selection of the participants in the present study, as prospective participants were required to be in the ninth grade, and not to be

native speakers of English. The data were also found to be normally distributed (see section 4.1), which indicates that the sample could be representative of Norwegian ninth graders in general. Even so, a study including only 16 participants is far too small to base general assumptions upon. This is imperative to note. Considering, too, the fact that the qualitative data were obtained from interviewing less than half of the participants, it would be imprudent to make generalisations extending beyond the ninth graders actually participating in the present study. Further research involving a larger sample could instead be encouraged.

5.3 Digital gaming

In this section, digital gaming, online gaming and offline gaming are discussed in connection with learning English as a second language. In the present study, the term ‘digital gaming’ encompasses all forms of digital gameplay, i.e. both single-player and multiplayer games, and games played online and offline. ‘Online gaming’ covers online games in which players communicate with other people when gaming, and ‘offline gaming’ covers games, online or offline, in which players do not communicate with others.

5.3.1 Gender differences in digital gaming

Playing digital games has traditionally been regarded as a predominantly male activity (Veltri et al., 2014, p. 3). This is however not just a perception but a reflection of reality, as research has found boys to spend considerably more time on digital gameplay than girls (Griffiths, et al., 2011; Sundqvist & Wikström, 2015; Sylvén & Sundqvist, 2012; Bakken, 2019; Jensen, 2017). Findings in the current study are consistent with this research, with the six male participants spending a total of 80.7 hours and the ten female participants spending a mere total of 4.7 hours on digital gaming over the course of one week (see section 4.2). There are several possible explanations for the differences in digital gaming habits between genders. In a 2019 review article, Lopez-Fernandez, Williams, Griffiths & Kuss list gender expectations, violent content, problems identifying with characters or avatars, harassment and different motivations as reasons why women choose not to play digital games (pp. 6–7). Based on these factors, it seems the concepts or designs of many digital games suit men better than women, and that women may avoid gaming for fear of being stigmatised or harassed. The girls participating in the present study were however not asked why they spend little or no time on digital gaming, and it is therefore difficult to determine whether or to what extent any of these factors apply to the present study.

Boys and girls also appear to favour different types of digital games. Sylvén & Sundqvist, for instance, found boys to prefer online multiplayer games and girls to favour offline single-player games (2012, p. 311). Uz & Cagiltay found that 82 % of the male participants in their study preferred multiplayer games, whereas only 21 % of the female participants reported the same preference (2015, p. 5). This is consistent with findings in the present study: The only form of digital gaming reported by the female participants was offline gaming, whereas all six male participants reported spending time on online gaming. Four of the six boys also reported playing offline games, but to a much lesser extent than online games, with a total of 20.8 hours spent on offline gaming and a total of 59.9 hours spent on online gaming in the week of keeping their language diaries (see section 4.2 and Appendix 5).

It is difficult to draw any firm conclusions about why the differences in game type preferences between genders exist, but some previous research and some of the present study's interview data may provide some clues. Griffiths et al., for instance, found that significantly more boys than girls 'found it easier to converse online than offline' (2011, p. 28). This means that more boys than girls may prefer socialising online, and that online gaming may provide an environment that encourages conversation. The male participants interviewed in the current study reported not conversing much about trivial or personal topics when in a game, but participant 4 described players in between-game conversations to behave as if they already know each other, even if that is not the case, and that these conversations are more proper or complete than those taking place during games (see Appendix 9). Moreover, online gaming often is competitive (*Overwatch*, for instance, involves being part of a team that works together to bring another team down (Chitwood, 2018)). Competitiveness is considered a masculine trait (Lopez-Fenandez, Williams, Griffiths, & Kuss, 2019, p. 7), and males have found to be more competitive than females when competing to win (Hibbard & Buhrmester, 2010, p. 420). As winning is the objective of many (perhaps even most) online games, the competitive aspect is therefore likely to be part of the reason why boys show a preference for online gaming.

5.3.2 Games played and in-game communication

In their interviews, the boys reported playing either *Overwatch*, *Apex Legends*, *Fortnite*, *League of Legends* or *Call of Duty* when gaming online, and *Rocket League* or *Farming Simulator* (both of which were reportedly played online, but without communicating with others) when playing offline games. According to participant 3, *Fortnite* and *Apex* are so-called 'Battle Royale' games in which the point is to gather weapons to use to try to survive, whereas *Overwatch* and

Call of Duty involve what he referred to as ‘team death matches’ and ‘capture the point’ (see Appendix 9). None of the girls provided any information on type of games played in their language diaries or their interviews.

All of the online games listed above require real-time cooperation. Usually, the players work together as a team either to take down another team, to capture a point and defend it from the other team(s), or to fight to be the last team standing. The four male interviewees all reported mostly talking to each other while gaming (as writing would take too long and would leave them periodically inactive in the game), and that they speak English whenever they play with people from countries other than Norway (which is quite often for most of them). When they play with other Norwegians only, they speak Norwegian but substitute several Norwegian words for English ones. Participant 4 explained that speaking like this is easier than strictly adhering to one language, as ‘you get a more extensive vocabulary when you can use both languages’ (see Appendix 9). In selecting features from different languages and assembling these to fit his communicative needs, he has, in other words, practiced translanguaging (García & Kano, 2014, p. 260). Some of the interviewees also reported applying Norwegian conjugation to English words.

5.3.3 Scaffolding

The research in the present study found online gaming to be the most influential factor on the English vocabulary proficiency of the participants. Scaffolding and interaction with peers are likely to explain some (and possibly a lot) of this influence, as research has found both expert-novice scaffolding and learner-learner scaffolding to improve language skills in learners (Thorne & Hellermann, 2015). Expert-novice scaffolding, which is closely related to Vygotsky’s Zone of Proximal Development theory (see section 2.3), involves learning situations in which an adult or a more capable peer facilitates learner development. Novice-novice scaffolding, on the other hand, involves learning situations in which learners at more or less the same level of skill successfully scaffold one another. Though approximately at the same level, learners in novice-novice scaffolding situations often take turns operating as expert and novice (Thorne & Hellermann, 2015, pp. 286–287). In online gaming, both types of scaffolding appear to take place – also in gaming situations involving the participants of the present study. Participant 3, for instance, reported sometimes having to rephrase or explain words to fellow gamers; thereby functioning as the expert despite not being a native speaker himself. All of the male participants interviewed also informed of having learned some English – mostly

pronunciation, intonation or words and phrases – from fellow gamers when playing online games (see Appendix 9).

Unlike most other EE activities in which Norwegian teenagers typically engage, online gaming provides the possibility of frequent communication with native speakers of English. This means the L2 learning potential in online gaming is large. The online gamers in the present study reported having learned words, pronunciation and intonation from fellow gamers – native speakers in particular – but they are likely also to have become increasingly proficient in other aspects of English from communicating with native speakers. Interacting with native speakers of the target language provides the opportunity for learners both to develop pragmatic awareness and to learn linguistic features of English that do not have Norwegian counterparts (Thorne & Black, 2008, pp. 141–142). Research has found that the desire to be on good terms with native speaker peers is an incentive for learners to obtain pragmatic knowledge; a feature that can be difficult to teach or learn in decontextualised school settings. Non-transferrable features are also difficult to teach out of context in school, but learners’ use of such features was significantly improved when theory was linked to authentic language practices with native speakers. Particularly interesting is the importance of personal relationships in these settings, as meaningful relationships between learners and native speakers motivate learners to master both grammar and pragmatics in the target language (Thorne & Black, 2008, pp. 141–142). As several of the participants interviewed – both boys and girls – reported being friends with people from English-speaking countries (see Appendix 9), they are likely to have become more attentive to pragmatic and grammatical appropriateness when using English.

5.3.4 L2 learning through meaningful activity

Online gaming not only facilitates scaffolding (that is, peers explicitly assisting each other in developing language skills – see previous section); it also provides an excellent arena for learning English through socialising and co-synchronous activity, or languaging. In online gaming, language learning is ‘action-based, contextualized, [and] personally meaningful’ – all of which are factors contributing to the language learning process (Zheng & Newgarden, 2012, p. 16). As language has a crucial role in ‘co-ordinating cognitive processes among and within individuals’ (Zheng & Newgarden, 2012, p. 16), like the processes among online gamers working together or against each other in a game, online gamers need to be skilful in both language and games to succeed. Through real-time meaning making, then, online gamers practice a form of languaging that is arguably more effective for L2 learning – and at least more

motivating – than decontextualised second language learning in a classroom. Motivation is, after all, one of the most important factors for successful second language learning (see section 2.3).

The social aspect of languaging and language learning in online gaming is central. All of the male participants interviewed in the current study listed social interaction as one of their main motivations for engaging in online gaming²⁷ (see Appendix 9), and the inherent dialogical nature of language suggests that dialogue and co-production are essential to language learning processes (Dufva, Aro, & Suni, 2014, p. 24). As the online gamers participating in the present study are motivated and frequently practice their target language in dialogue, co-production and co-action, it was therefore not surprising that they were found to be proficient second language users. In most of the other EE activities listed in the language diaries (see Appendix 1), social interaction, dialogue and co-action are absent, which means that the less productive and less dialogical natures of these activities may explain at least partly why they made less of an impact on participants' English proficiency. It should however be added that all interviewees – boys and girls – reported engaging in the different EE activities entirely because they wanted to (see Appendix 9), which means these activities must all be considered meaningful to the participants choosing to engage in them.

5.3.5 The unique role of online gaming in learning English as a second language

In the current study, online gaming was found to influence participants' English vocabulary more than any other activity alone and the other activities combined (see section 5.1.4). From an L2 learning perspective, there is most likely no one defining feature of online gaming that makes it a uniquely influential EE activity, but rather a combination of many. In the previous sections, scaffolding, interaction with native speakers, motivation, co-action and meaningfulness have been listed as some of online gaming's features likely to enhance L2 learning, but these features are not the only ones. In this section, additional factors facilitating learning English as a second language through online gaming are addressed.

First, the male participants in this study reported playing online games both regularly and frequently. In their language diaries, they all reported engaging in online gaming at least four of the seven days, and some even played every day. The amount of time each participant spent

²⁷ Three of them confirmed that the social aspect was part of their motivation for gaming when being asked specifically about this, whereas one listed social interaction as his main motivation. See interviews with participants 1–4 in Appendix 9.

on online gaming was also considerable, with an average time consumption of 10 hours over the course of one week. Regularity and frequency may then be two of the factors of online gaming that increase language learning outcomes, as repeated L2 exposure has been found to enhance vocabulary (and most likely other aspects of language) learning (Schmitt, 2008, pp. 334–335). The considerable amount of online gameplay is also likely to facilitate learning, as research has found amount of exposure to English to positively correlate with greater English proficiency (Ismail, 1991).

Online gaming is also a highly productive activity. Sundqvist (2009, p. i) and Lee (2017) both found productive or ‘quality’ activities to produce better results in participants’ language tests than other, less productive activities (see also section 5.1.1), and Schmitt writes that higher involvement with target language vocabulary has been found to elicit greater vocabulary learning outcomes (2008, pp. 338–339). When engaging in online gaming, the male interviewees all reported to be speaking and writing English, as well as of course listening to and reading it. To speak and write English, gamers will necessarily have to produce language themselves, and will therefore arguably learn more than if they were listening and reading only. Speaking English during games as part of synchronised action with fellow gamers in real-time may arguably lead to an even greater language learning outcome, as bodily (or, in this case, avatar) activities in combination with language have been found to produce ‘faster recognition of words rated as high for body-object interaction’ (Zheng & Newgarden, 2012, p. 15).

The combination of all of these factors are, then, unique for online gaming. Although the male participants reported spending more time both listening to music and watching YouTube, these are less productive activities that lack both dialogue and scaffolding. Participants 7 and 15 (both female) both reported frequently interacting with native speakers of English, but although dialogue and scaffolding are part of these interactions (see Appendix 9), the co-synchronised action of online gaming is absent.

5.4 Further reflections: SLA theory and findings in the present study

In this section, the study’s findings will be briefly discussed in connection with SLA theory. Topics that are relevant to the discussion but have not yet been addressed, as well as topics previously addressed but about which there is more to say, will be discussed.

When interviewed, the participants in the present study reported relatively frequently using English words when speaking Norwegian, both when gaming and when talking to or messaging

friends. Many of them also used the occasional English word during their interviews. Participant 1, for instance, used words like ‘delay’ and ‘dictionary’ rather than their Norwegian equivalents, and even denominalised (i.e. made a verb from a noun) the word ‘PayPal’ in his interview (see Appendix 9). This practice has traditionally been referred to as code-switching, but the mixing of different languages is now instead termed translanguaging in several linguistic circles (see section 2.6). Though more research on the matter is necessary, translanguaging is believed to benefit language learning as learners may be able to ‘utilize different linguistic [and multimodal] resources for participating in linguistic practices’ (Dufva, Aro, & Suni, 2014, p. 25). Participant 4, as mentioned in section 5.3.2, recognised the advantages of mixing languages, saying that the combined greater vocabulary of Norwegian and English makes communication easier (see Appendix 9). Also, allowing second language learners to develop and express their thoughts in their native language is believed to improve their ability to do the same in their target language (García & Kano, 2014, p. 261). Translanguaging should therefore be encouraged rather than discouraged, especially in L2 classrooms.

Theory on second language learning sometimes refers to the process of learning a second language through activities in which language learning is not the main objective as an ‘implicit’ or ‘incidental’²⁸ process in which learners are unaware of what is being learned (see section 2.2). However, as all the participants interviewed in the present study were able to provide insights into how and where they learn different aspects of English (see Appendix 9 and sections 5.1.2 and 5.1.3), it is highly likely that they are in fact quite aware of learning taking place. These interview data also contradict the notion of language being a construct that can be passively acquired, and the idea that there should be a distinction between learning and acquisition. Instead, learners are actively participating in the learning process – even when they engage in activities not requiring L2 production. Participant 2, for instance, believed learning both pronunciation and new words mainly from watching TV series (see Appendix 9). This indicates that he is attentive to the language even outside of explicit learning situations. The fact that he identifies watching TV as a situation in which he learns English indicates that he is also aware of learning taking place in this setting. Although learners may do little in the way of explicit action in some of these ‘implicit’ learning situations, they are cognitively present and conscious of obtaining knowledge. Linguaging theory supports this, as the use of language is

²⁸ The terms ‘incidental’ and ‘implicit’ learning are considered all right to use, as they may simply refer to language learning being secondary in given situations. It is the definition of them in SLA theory that is questioned.

believed to be an integrated part of all human experience and therefore not a separate construct to be effortlessly acquired (see for instance Halliday, 1993, pp. 8–9, and section 2.6).

In language learning as well as other areas of knowledge or skill, learning outcomes depend on the motivations of the learners (see section 2.3). The present study investigated how extracurricular practices involving English affect English language skills in a group of Norwegian ninth graders, and to what extent, if any, online gaming elicits greater English learning outcomes in the same group of participants. Interestingly (but perhaps not surprisingly), none of the participants interviewed reported ‘increasing English proficiency’ to be part of their motivation for engaging in EE activities, which means that L2 learning motivation in this case is secondary, if at all existing. Instead, participants reported engaging in EE activities to have fun, to have something to do, for entertainment, or simply because they like engaging in the different activities (see Appendix 9). However, theory on motivation indicates that the perception of one’s own capabilities may direct the learners’ choices of activities to some extent, as people with a low sense of self-efficacy²⁹ in a given domain, like second language settings, are less likely to choose activities within this domain. High sense of self-efficacy in a domain may on the other hand lead to heightened efforts (Dörnyei Z. , 1998, pp. 119–120). Learners’ own perceptions of themselves as users of English may then either decrease or increase their motivation to engage in activities involving the use of English. This may also mean that the gap between proficient learners and less proficient learners widens, as learners who are already proficient in English (or at least regard themselves as proficient) are likely to spend more time on activities involving English, while less proficient users are likely to spend little time on this, and thereby learn less.

Finally, the role of reading in second language learning should also be addressed. Before modern technology, L2 reading was perhaps considered the number one extracurricular activity for facilitating the development of target language skills. Numerous studies have found strong positive correlations between reading and L2 proficiency (Guo, 2012, p. 196), but ever since the introduction of modern technology it seems digital activities have replaced traditional book or magazine reading – at least to a certain extent or in certain groups of people. People having grown up using the Internet, smartphones and social media, i.e. fairly young people, are perhaps the most likely to choose modern technology over books. The language diary data in the present study support this assumption, given that reading books was the activity participants reported

²⁹ I.e. ‘People’s judgment of their capabilities to carry out certain specific tasks’ (Dörnyei Z., 1998, p. 119).

spending the least amount of time on, and that reading newspapers or magazines came in second last. However, when interviewed, three of the participants (1, 4 and 7), including two of whom had not reported reading in their language diaries (4 and 7), informed of regularly reading books in English. One also reported reading newspapers and magazines (participant 3, who also reported this in his language diary). All of these participants scored well above average in their vocabulary tests (23–28 correct answers, average score was 18.6), which means that their reading habits may have contributed to their above-average vocabulary skills. However, as the language diary data obtained in the present study appear not to reflect the typical reading habits of all the participants, the extent to which reading may have influenced their English skills cannot be determined.

6. Conclusion

The present study utilised a mixed-method approach to investigate how extracurricular English language practices affected the English proficiency of a group of Norwegian ninth graders ($n = 16$), and to what extent, if any, online gaming produced greater L2 learning outcomes than other extracurricular activities. The quantitative data were collected through a language diary, a grammaticality judgment test, and a productive vocabulary test, whereas the qualitative data were collected through semi-structured interviews with seven of the participants. The mixed-method approach enabled the data to be triangulated and compared in order to ensure the reliability of the results and provided a richer context for the interpretation of the findings.

Upon starting the research, it was hypothesised that engaging in EE activities would positively affect the English proficiency of the participants, and that vocabulary outcomes would be greater than grammar outcomes. The findings partially support this hypothesis, as they revealed a statistically significant ($p < 0.05$) positive correlation between the total amount of time participants spent on EE activities and the participants' English vocabulary proficiency, but no significant correlations between any activity, single or combined, and the participants' grammar proficiency.

It was also hypothesised that online gaming, due to its highly productive nature, would have a greater effect on the participants' English proficiency than the other EE activities; offline gaming included. This hypothesis is supported by the research, which found that online gaming was the only activity to significantly ($p < 0.05$) correlate with the participants' English vocabulary proficiency. The relationship between online gaming and vocabulary proficiency was also slightly stronger ($r^2 = 0.36$) than the relationship between total amount of time spent on EE activities and vocabulary proficiency ($r^2 = 0.27$).

Additional findings show that all the participants attained significantly ($p < 0.01$) higher scores in the grammar test than in the vocabulary test, but also, as mentioned above, that no statistically significant correlations were found between grammar proficiency and EE practices. The male participants were also found to spend significantly ($p < 0.01$) more time on EE activities than the female participants, and to be the only participants engaging in online gaming. Furthermore, the male participants attained higher scores in the vocabulary test than the female participants, although the difference between scores was only marginally significant ($p < 0.1$). As all of the male participants, and none of the female participants, reported engaging in online gaming, which was the activity most strongly correlating with vocabulary proficiency, it is however

impossible to determine whether the differences in test scores derive from gender differences, differences in EE practices, or a combination of both.

In sum, the findings suggest that EE activities in general, and online gaming in particular, affect the English vocabulary proficiency of the participants, as statistically significant ($p < 0.05$) correlations were found between the amount of time the participants spent on all EE activities combined and their vocabulary scores, and between online gaming and vocabulary scores. Further research is however needed to substantiate the findings, as the present study involved a limited number of participants ($n = 16$). Future research could also investigate whether other aspects of Norwegian learners' English proficiency, like for instance performance in school, comprehension, or oral proficiency, are also affected by extracurricular English language practices. Another possibility is future research incorporating real-time recordings of authentic online gaming situations, using appropriate capture software, as such data are likely to yield valuable insights further explaining why online gaming appears to produce a greater L2 vocabulary learning outcome than other out-of-school English practices.

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Appendices

Appendix 1: Language diary

Språkdagbok

Dag 1: _____ dag den ____/____

Hvor mye tid har du brukt på aktiviteter som involverer engelsk i dag?

Fyll inn i skjemaet ved aktuelle aktiviteter.

Sammenlagt tidsbruk
Skriv timer og minutter. Hvis du har brukt 35 minutter på aktiviteten, skriver du 0 timer, 35 min

Lese bøker (på engelsk):	Kommentar/beskrivelse:	
Lese engelskspråklige aviser eller magasiner, enten på nett eller papir:	Kommentar/beskrivelse:	
Se på engelskspråklige YouTube-videoer:	Kommentar/beskrivelse:	
Se på engelskspråklige TV-serier:	Kommentar/beskrivelse:	
Se på engelskspråklige filmer:	Kommentar/beskrivelse:	
Bruke internett generelt, på engelsk (søke på søkemotorer, finne informasjon, annet):	Kommentar/beskrivelse:	
Spille engelskspråklige TV- eller dataspill der du kommuniserer med andre på engelsk:	Kommentar/beskrivelse:	
Spille engelskspråklige TV- eller dataspill <u>uten</u> å kommunisere med andre:	Kommentar/beskrivelse:	
Høre på engelskspråklig musikk:	Kommentar/beskrivelse:	
Andre aktiviteter som involverer engelsk, for eksempel snakke med utenlandske venner (forklar):	Kommentar/beskrivelse:	

Language diary

Day 1: _____ day the ____/____

How much time have you spent today on activities involving English?

Write down the amount of time you have spent on the different activities.

<p>Total time consumption Write hours and minutes spent. If you have spent 35 minutes on an activity, write '0 hours 35 minutes'.</p>
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Reading books (in English):	Comment/description:	
Reading newspapers or magazines in English, either online or paper versions:	Comment/description:	
Watching YouTube videos in English:	Comment/description:	
Watching TV series in English:	Comment/description:	
Watching films in English:	Comment/description:	
Using the Internet in English (searching for things using search engines, finding information, or other):	Comment/description:	
Playing digital games in which you communicate with others in English:	Comment/description:	
Playing digital games in English, in which you <u>do not</u> communicate with others:	Comment/description:	
Listening to music:	Comment/description:	
Other activities involving use of the English language, like for instance speaking to friends from other countries (explain):	Comment/description:	

Appendix 2: Vocabulary test

English proficiency test, part 1: Vocabulary.

1. I'm glad we had this opp_____ to talk.
2. There are a doz_____ eggs in the basket.
3. Every working person must pay income t_____.
4. The pirates buried the trea_____ on a desert island.
5. La_____ of rain led to a shortage of water in the city.
6. He takes cr_____ and sugar in his coffee.
7. The telegram was deli_____ two hours after it had been sent.
8. The dress you're wearing is lov_____.
9. He wasn't very popu_____ when he was a teenager, but he has many friends now.
10. If you blow up that balloon any more it will bu_____.
11. He had a successful car_____ as a lawyer.
12. She wore a beautiful green go_____ to the ball.
13. The children's games were amusing at first, but finally got on the parents' ner_____.
14. Many people in England mow the la_____ of their houses on Sunday morning.
15. The farmer sells the eggs that his he_____ lays.
16. Sudden noises at night sca_____ me a lot.
17. France was proc_____ a republic in the 18th century.

18. He perceived _____ a light at the end of the tunnel.
19. She showed off her sleek _____ figure in a long narrow dress.
20. Many people are injured _____ in road accidents every year.
21. Soldiers usually swear an oath _____ of loyalty to their country.
22. The voter placed the ballot _____ in the box.
23. They keep their valuables in a vault _____ at the bank.
24. A bird perched at the window ledge _____.
25. The kitten is playing with a ball of yarn _____.
26. This is a complex problem that is difficult to comprehend _____.
27. The management held a secret meeting. The issues discussed were not disclosed _____ to the workers.
28. The boss got angry with the secretary and it took a lot of tact to soothe _____ him.
29. We do not have adequate _____ information to make a decision.
30. The prisoner was put in solitary _____ confinement.
31. The area _____ of his office is 25 square meters.
32. According to the communist doctrine _____, workers should rule the world.
33. He usually read the sports section _____ of the newspaper first.
34. Because of the doctors' strike, the clinic _____ is closed today.
35. A considerable amount of evidence was accumulated _____ during the investigation.

36. The suspect had both opportunity and mot_____ to commit the murder.
37. They insp_____ all products before sending them out to stores.
38. He finally att_____ a position of power in the company.
39. The story tells about a crime and subs_____ punishment.
40. The urge to survive is inh_____ in all creatures.
41. The baby is wet. Her dia_____ needs changing.
42. The prisoner was released on par_____.
43. Second year university students in the US are called soph_____.
44. Her favourite flowers were or_____.
45. Computers have made typewriters old-fashioned and obs_____.
46. The rescue attempt could not proceed quickly. It was impe_____ by bad weather.
47. She was sitting on a balcony and bas_____ in the sun.
48. Some coal was still smol_____ among the ashes.
49. For many people, wealth is a prospect of unimaginable felic_____.
50. She found herself in a pred_____ without any hope for a solution.

English proficiency test, part 2: Grammar.

Circle the correct answer.

1. John me three times already this morning, and I've only been at work for an hour.

- A had phoned
- B phoned
- C 's phoned

2. When I said I'd visit them in New Zealand, I how expensive the airfare would be.

- A haven't realised
- B hadn't realised
- C hadn't been realising

3. If you give me your coat, Iit up for you.

- A 'll hang
- B 'm going to hang
- C 'm hanging

4. When the snow blocked the road, motorists abandon their cars and walk.

- A have to
- B must
- C had to

5. My parents gave me the money for the car. I have afforded to buy it myself.

- A couldn't
- B can't
- C mustn't

6. I have listened to your advice and started out before the rush hour.

- A must
- B had better
- C ought to

7. Today's Times reporting that the number of people emigrating from the country risen to record levels.

- A is ... have
- B is ... has
- C are ... have

8. Scientists are predicting that Britain will have as cold as Canada's within a hundred years unless global warming is brought under control.

- A the climate
- B climate
- C a climate

9. welcome the decision to turn street lights off at midnight.

- A Not all residents in the area
- B All residents in the area don't
- C Not any residents in the area

10. He had a neat beard and a small gold earring in ear.

- A every
- B each of
- C each

11. Although the villagers were very poor, they were always happy to share with us food they had.

- A the few
- B little
- C the little

12. The new magazine for teenagers is

- A weekly to be published
- B to be weekly published
- C to be published weekly

13. The conference has been a great success, and I'd like to thank all the

- A people involved
- B very involved people
- C involved people

14. It wasn't the holiday I've ever had, but it was certainly the

- A cheapest ... most relaxing
- B cheapest ... relaxingest
- C most cheap ... most relaxing

15. If you, maybe I can help you solve it.

- A explain me the problem
- B explain the problem to me
- C explain the problem for me

16. Considering that we don't have many interests in common, we get along quite well.

- A with each another
- B with each other
- C for each other

17. I often don't have time to eat a proper lunch, so I just a banana.

- A make to do with
- B make do for
- C make do with

18. As warm air rises, it mixes with cooler air above and cools to a point it stops rising.

- A where
- B there
- C which

19. I was just about to ring the bell the door opened.

- A as
- B when
- C while

20. It's still hot in here the air-conditioning is turned up high.

- A even though
- B unless
- C even if

21. on a box, I was just able to see through the window.

- A Standing
- B I stood
- C Stood

22. A committee has been set up to decide or not the two colleges should merge.

- A whether
- B unless
- C if

23. Nick is always out playing football or cycling, his brother prefers to stay indoors reading or watching television.

- A in contrast
- B whereas
- C instead

24. She asked me why to work any more.

- A did I not walk
- B didn't I walk
- C I didn't walk

25. 'Do you think Claire really wants to come with us?' 'I

- A suspect not
- B suspect not so
- C don't suspect so

26. I helped Tim clean the house from top to bottom, but 'thank you'.

- A not he did once say
- B not once did he say
- C not once he did say

27. I first tried to contact with Mr Rogers by phone, but when there was no answer I emailed him instead.

- A make
- B have
- C take

28. Everyone was at the meeting, and by the time I got to the hall to sit.

- A there were nowhere
- B it was nowhere
- C there was nowhere

29. I don't think I'll get the job, but
..... in an application.

- A it's no harm in putting
- B there's no harm in putting
- C there's no harm to put

30. He travelled everywhere by train
because of his fear

- A to fly
- B in flying
- C of flying

Appendix 4: Interview guide

1. Fortell om hvordan du bruker engelsk når du gamer/er på YouTube, kommuniserer med venner eller familie/annet. Snakker, skriver eller lytter du, eller er det en god blanding? Foregår det kun på engelsk?
How do you use English when you are engaged in either gaming or watching YouTube, or when you communicate with friends or family (or when you do other things)? Do you speak, write, or listen, or all of these? Does it happen exclusively in English?
2. Fortell *hvorfor* du driver med disse aktivitetene. Hva er motivasjonen din/hva får du ut av det? Plikt?
Why do you engage in these activities? What are your motivations, or what do you get out of doing it? Are you required to spend time on any of these activities (like speaking to friends or family)?
3. Bestemmer du selv hvor mye tid du bruker på dette?
Are there restrictions on the amount of time you are allowed to spend on these extracurricular activities, or do you decide this yourself?
4. Tenker du over språket du bruker når du driver med dette (gaming, YouTube, sosiale medier, film/TV (tekst eller ikke?) osv.)?
Do you reflect on/are you conscious about the language you use when engaging in these activities (gaming, YouTube, social media, film/TV (subtitles or not) etc.)?
5. Hvordan lærer du nye ord? Spør du den/de du spiller med, søker du opp ord på nettet, gjetter du ut ifra sammenheng, eller annet?
How do you learn new words? Do you ask the people you play online games with (if playing) or communicate with, do you look up the words online or in dictionaries, do you guess from context, or do you do other things?
6. Hvor kommer de du kommuniserer med fra? På hvilken måte påvirker det språket ditt hvem du snakker med og hvor de kommer fra?
Where do the people you communicate with come from? Does your way of using English depend on who you speak with and where they come from?
7. Hjelper dere hverandre med språket? Hvordan?
Do you ever help each other with your English? How?
8. Diskuterer du noen gang med medspillere/de du snakker med om hva dere mener? Er dere uenige om meningen av noe som blir sagt?
Do you ever discuss the meaning of what is being said with your fellow gamers/the people you communicate with? Do you ever disagree about the meaning of things being said?
9. Hvor/hvordan tror du selv du lærer mest/best engelsk? Lærer du ulike komponenter av engelsk (f.eks. ord og grammatikk) i ulike situasjoner?
Where or how do you think you learn the most English? Do you learn different components of the language (for instance words and grammar) in different situations?

Appendix 5: Detailed language diary data

Number of hours spent on each EE activity

Participant	Books	News/ magazine	YouTube	TV-series	Films	The Internet	Online gaming	Offline gaming	Music	Other	Total
1	0.3	-	17.1	2.0	-	2.3	17.0	3.5	22.0	0.3	64.6
2	-	-	14.0	10.5	-	4.5	2.5	-	9.5	-	41.0
3	-	9.0	9.0	5.3	2.0	-	10.3	-	46.0	-	81.5
4	-	-	3.0	11.5	2.0	-	12.0	3.0	10.0	-	41.5
5	-	-	4.1	4.8	3.5	2.0	-	-	4.5	-	18.8
6	-	0.4	-	1.5	2.0	0.1	-	-	0.8	-	4.7
7	-	-	-	3.5	-	0.1	-	-	5.2	11.5	20.2
8	-	-	4.2	2.5	3.5	7.0	-	-	3.0	1.0	21.2
9	-	-	-	5.5	3.0	-	-	-	1.7	-	10.2
10	-	-	35.6	0.4	5.2	-	11.7	13.8	2.0	-	68.6
11	-	-	11.5	-	8.0	3.5	6.5	0.5	3.5	-	33.5
12	-	-	0.7	3.7	7.2	-	-	0.2	8.5	0.2	20.4
13	-	-	1.1	-	1.5	-	-	-	1.9	-	4.5
14	0.1	-	19.5	0.4	5.3	1.9	-	-	15.9	1.1	44.1
15	-	-	5.8	-	10.5	1.3	-	4.5	1.0	4.1	27.2
16	-	-	-	-	-	-	-	-	0.2	0.0	0.2
Total	0.4	9.4	125.5	51.4	53.6	22.6	59.9	25.4	135.6	18.2	502.2
Average	0.0	0.6	7.8	3.2	3.4	1.4	3.7	1.6	8.5	1.1	31.4
Average	0.2	4.7	10.5	4.3	4.5	2.5	10.0	4.2	8.5	2.6	31.4
SD	0.1	2.2	9.8	3.6	3.1	2.1	5.8	3.6	11.7	2.9	24.1

Participants 1, 2, 3, 4, 10 and 11 are boys. The remaining ten, i.e. participants 5, 6, 7, 8, 9, 12, 13, 14, 15 and 16, are girls.

Appendix 6: Overview of each participant's vocabulary and grammar scores

Participant	Vocabulary Correct answers*	Grammar Correct answers**
1	26	22
2	9	13
3	28	23
4	40	26
5	27	23
6	10	19
7	23	18
8	29	25
9	14	20
10	25	20
11	15	20
12	7	10
13	6	17
14	16	22
15	12	23
16	10	16
Average number of correct answers	18.6	19.8
Average percentage of correct answers	37.1	66.0

* Total possible score: 50. ** Total possible score: 30.

Participants 1, 2, 3, 4, 10 and 11 are boys.

Appendix 7: Detailed vocabulary results

Vocabulary results

Participant	2,000 level*	3,000 level*	5,000 level*	University level*	10,000 level*	Total**
1	9	6	3	5	3	26
2	4	5	0	0	0	9
3	9	7	3	6	3	28
4	10	8	9	7	6	40
5	10	7	4	4	2	27
6	6	2	0	2	0	10
7	9	5	2	4	3	23
8	9	7	4	5	4	29
9	7	4	0	3	0	14
10	10	5	4	4	2	25
11	7	4	3	0	1	15
12	4	2	0	0	1	7
13	2	2	0	2	0	6
14	6	5	2	2	1	16
15	6	2	2	1	1	12
16	4	3	0	3	0	10
Average	7.0	4.6	2.3	3.0	1.7	18.6
SD	2.6	2.0	2.4	2.2	1.7	9.9

*Total score possible is 10.

**Total score possible is 50

Participants 1, 2, 3, 4, 10 and 11 are boys.

Appendix 8: Task by task grammar scores

Task	Correct answers (16 possible)
1	3
2	12
3	13
4	11
5	16
6	6
7	5
8	10
9	12
10	16
11	16
12	8
13	11
14	11
15	9
16	14
17	9
18	13
19	9
20	16
21	10
22	13
23	4
24	14
25	10
26	13
27	7
28	8
29	6
30	11

Appendix 9: Interviews

This appendix includes excerpts from all seven interviews. Passages referred to in the thesis text and some additional information are included in the excerpts.

All seven interviews were conducted in Norwegian and transcribed using Intelligent Verbatim transcription style. English translations in bold.

Personally identifiable information, like for instance names, has been removed from the interviews and substituted with unidentifiable replacements in brackets.

Transcription of interview with participant 1 (male)

Duration: 23 minutes 32 seconds.

Interviewer: Jeg lurte på om du kan fortelle litt om hvordan du bruker engelsk – la oss si når du gamer, først, for det vet jeg jo at du driver med.

Could you tell me a little about how you use English – let’s say when gaming, as I know you engage in that?

Participant: Ja.

I do.

I: Ja, altså, om du snakker eller skriver eller lytter mest, eller om du, ja, gjør en god blanding?

Yes, well, do you speak or write or listen the most, or is it a combination of all?

P: Ja, det er jo hver gang jeg spiller med engelske folk, da, så må du jo snakke engelsk. Og hvis du skal skrive noe til de, så må du skrive engelsk med de, da. Også når du hører hvor bra de snakker engelsk, så tar du på en måte litt opp det, da. Du drar opp ord som de sier og får, liksom ... Du gjør vokabularet ditt i engelsk større bare ved å høre på de snakke, da.

Every time I play with English-speaking people I have to speak English. And if I want to write something to them, I’ll have to write in English. Hearing how well they speak English makes you adopt the way of speaking, in a way, too. You adopt some of the words they use, and ... expand your English vocabulary just by hearing them talk.

(...)

I: Ja. Akkurat i spillet, er det mest snakking da, eller blir det skriving og sånt òg?

Right. While gaming, do you mostly speak, or do you write things to each other, too?

P: Der er det mest snakking. Eller, det spørres om du er i en «call», da, med de, eller om du skriver i «chatten» i spillet, da. Men som oftest – de jeg spiller med til vanlig snakker vi med over den type telefon, da. Sånn, Skype eller noe.

We mostly speak. It depends on whether I’m in a “call” with them, though, or whether I write using the game’s chat service. Mostly we speak over a kind of phone, like Skype or something, when I play with the people I usually play with.

I: Å ja, har dere det ved siden av?

Oh, right, so you use another service for speaking?

P: Ja, det er – går over i spillet, liksom. Det er liksom, ja, vi har det ved siden av.

Yes, well, it merges with the game, in a way. So we kind of use another service.

I: Ok. Ser dere hverandre òg når dere prater sammen?

Ok. Do you see each other, too, when talking?

P: Nei, nei. Det er noe som heter Discord, men det er ikke Skype. Det er en sånn type Skype som er lagd for gaming, da.

No. It’s something called Discord; it isn’t Skype. It’s a type of Skype made for gaming.

I: Og da går det, holdt på å si, i «real time», altså der og da?

And then you communicate in real-time, that is, there and then?

P: Ja. Eller, det er jo, sånn, noen millisekund «delay», men det går i «real time», ja.

We do. Well, there is a delay of a few milliseconds, but it is in real-time.

I: Ja. Gamer du noe med andre nordmenn?

Ok. Do you play digital games with other Norwegians?

P: Jeg spiller jo noen ganger med [skolekamerater], og jeg spiller med noen fra Nesodden, Bergen, og sånne greier, men da snakker vi jo selvfølgelig norsk, da.

I sometimes play with schoolmates, and I play with people from Nesodden, Bergen and other places, but then we speak Norwegian, of course.

I: Men, eller, de andre rapporterte at de brukte mye engelske ord innimellom?

But the others reported using a lot of English words when speaking Norwegian?

P: Ja, vi bruker ... Det er, når vi skriver til hverandre på Snapchat, så går det bare i engelsk, egentlig.

Yes, when we write each other on Snapchat, we use English only, really.

I: Å ja, såpass, ja.

Oh, really?

P: Ja. Jeg tror det er noen år siden vi skrev til hverandre på norsk.

Yes. I think it's been a few years since we wrote each other in Norwegian.

I: Så dere får brukt mye engelsk?

So you get to use a lot of English?

P: Ja, det er veldig mye, egentlig.

Yes, a lot, really.

(...)

I: Hvorfor – eller, hva er motivasjonen din til å drive med spilling og YouTube og sånt?

Why – or, what motivates you to engage in gaming and watch YouTube and things like that?

P: Det er vel bare fordi at det er gøy, da. Det er ikke noe spesielt ... Jeg spiller jo ikke for å bli bedre i engelsk, på en måte. Jeg spiller jo fordi det er gøy, liksom.

I suppose it's because it's fun. Nothing in particular ... I don't play to improve my English, in a way. I play because it's fun.

I: Er det noe med det sosiale øg, eller ...?

Does the social aspect of it play a role, or ...?

P: Ja, det er vel det. At det er greit å sitte og spille med noen, og snakke sammen og sånn, da.

Yes, I guess it does. It's all right to play with someone and talk and stuff.

I: Kan jeg si at det er delvis for det sosiale?

Could I say that it is partially for social reasons?

P: Ja, du kan si det.

Yes, you could say that.

(...)

I: Det er gøy, ja? Underholdende, eller ...?

So, it's fun? Entertaining, or ...?

P: Ja, det er underholdende å sitte og spille og kunne snakke med andre folk, da.

Yes, it is entertaining to sit and play and be able to talk to people.

I: Bestemmer du selv hvor mye tid du bruker på ...?

Do you get to decide for yourself how much time you spend on ...?

P: Ja.

Yes.

(...)

I: Hender det du må spørre de engelske folk du spiller med om hva det betyr, det de har sagt, eller noe?

Do you ever have to ask the English people you play with about the meanings of words or utterances?

P: Ja, da er det oftest på sånne ord som er slang, da, på en måte. Da er det ikke, sånn, ord som du kan søke opp i «dictionary», da. Det er mer sånt som står i Urban Dictionary. Såne ord som de har, liksom, oppfunnet, da, eller starta å bruke.

Yes, and then it's mostly colloquial speech, in a way. It's not words that I can look up in a dictionary. It's more like the stuff you find in the Urban Dictionary. Words that they have, you know, invented, or started using.

I: Men det meste andre, det gjetter du ut ifra sammenheng?

But you mostly guess the rest from context?

P: Ja.

I do.

I: Hvordan lærer du nye ord, føler du?

How do you think you learn new words?

P: Med å høre på de snakke, og sånn. Eller lese et ord, eller [uforståelig]. Det er veldig lite jeg egentlig tenker over som jeg har lært i nyere tid, da, fra engelskboka og sånn.

From hearing people talk, and stuff. Or read a word, or [incomprehensible]. I don't think I've learned much from for instance the English textbook in school, at least not recently.

(...)

I: Leser du noe annet enn – på engelsk da – enn chat og sånn?

Do you read anything – in English, that is – besides chat messages and stuff?

P: Ja, jeg har lest to bøker om astrofysikk på engelsk, og da ... Det er jo litt heftigere enn vanlig snakking, da. Så da måtte jeg søke opp noen ord, da.

Yes, I've read two books on astrophysics in English, and then ... it is a bit more demanding than regular speech, so then I had to look up some words.

I: Det kan jeg skjønne. Og da lærte du noen nye ord, kanskje?

I can understand that. And then you learned some new words, perhaps?

P: Ja.

I did.

(...)

I: Vi har jo diskutert litt hvor de du kommuniserer med kommer fra. Det var blant annet Storbritannia ...

We have discussed a little about where the people you speak with come from. You said the UK ...

P: Skottland, ofte rundt der, da.

They're often from Scotland and around there.

I: Ja, England, Skottland ...?

Yes, so, England, Scotland ...?

P: Ja.

Yes.

I: Er det noen du har blitt venn med, på et vis, som du prater mer med enn andre?
Is there anyone in particular that you have made better friends with than others?

P: Det er i alle fall en fra Newcastle som jeg har spilt med i snart tre og et halvt år, og han kjøpte jo faktisk bursdagsgave til meg og sendte den i posten, og «PayPalet» meg 20 [uforståelig], og det var jo ... Han har jeg jo spilt med en del, da, og han kjenner jeg ganske godt.

There is one guy from Newcastle that I have played regularly with for almost three and a half years, who actually bought me a birthday present that he mailed to me. He also "PayPalet" me 20 [incomprehensible], and that was ... I've played a lot with him, and I know him well.

I: Prater dere om andre ting enn spilling, også?
Do you talk about other things beside gaming, too?

P: Ja, vi prater jo om vanlige, på en måte, ting som jeg gjør med andre folk i klassen her, da.
Yes, we talk about regular things that I do with people in my class, for instance.

I: Prater dere utenom når dere er i «game» og, eller er det mest når dere spiller?
Do you speak outside of games as well, or is it mostly when you are in a game?

P: Ja, vi snakker jo litt på Snapchat og sånn, men det er jo ofte sånn: «Blir du med å spille?», liksom, og sånne greier, da. Så det er som oftest på spill.

We speak a little on Snapchat and stuff, but it's mostly like: "Are you up for some gaming?", and things like that. So it's mostly when we play.

(...)

I: Hjelper dere hverandre noen ganger med språket, du og de du spiller med, eller snakker med?
Do you ever help each other with the language when you play or talk?

P: Nei, jeg vil ikke si at de direkte, liksom, hjelper – at jeg spør de ... Eller, jeg har jo spurt dem noen ganger om ordet, da. Jeg har jo spurt dem om: «Hva betyr ...?», «Hvorfor bruker man det ordet istedenfor det ordet?», og sånne greier, da.

No, I wouldn't say help, exactly, that I ask them ... Or, I have asked them about words sometimes. I have asked them: "What is the meaning of ...?", "Why do you use this word instead of that?", and things like that.

(...)

I: Må du hjelpe noen med språket noen ganger?
Do you sometimes have to help the others with the language?

P: Nei. De jeg snakker med er ofte mye bedre i engelsk enn det jeg er, så da ... Eller, i alle fall på spill, da.
No. The people I speak with are mostly much better at English than I am, so ... Or, at least in gaming.

(...)

I: Hva spiller du, forresten?
What do you play, by the way?

P: Nei, det meste det går i nå er *Overwatch*, da. Jeg spiller en konkurranse nå, som er to ganger i uka i tolv uker nå.

Now it's mostly *Overwatch*. I play in a competition now that's twice a week for 12 weeks.

(...)

I: Er det andre ting du spiller, da, eller er det bare ...?
Do you play other games, or just ...?

P: Nei, akkurat nå, så er det bare det. Så er det *Forza Horizon 4*, da. Det er sånn bilspill.
No, right now it's just that. And *Forza Horizon 4*. That's a car racing game.

I: Snakker du noe med noen da?

Do you speak with anyone when playing this?

P: Nei, da ... Det er, sånn, bare avslapningsspill, på en måte.

No, then ... It's a more relaxing game, in a way.

I: Er det online, det òg, eller er det offline?

Is it online or offline?

P: Ja, det er online.

It's online.

(...)

I: Hvor tror du selv du lærer mest engelsk?

Where do you think you learn the most English?

P: Når jeg snakker med engelske folk. Det, ja, det er garantert der jeg lærer mest.

When I speak with English people. Guaranteed.

I: Føler du at du lærer ulike komponenter av engelsken, altså at du lærer flest ord ett sted, mens du lærer grammatikken et annet sted, og uttale ett sted, eller hele pakka ...?

Do you think you learn different aspects of English in different places, like words in one place, grammar in another, and pronunciation somewhere else?

P: Jeg lærer mest uttale når jeg snakker med de som er «native speaking», da, liksom – de som er engelske. Men ord kan jeg jo lære fra, bare hva som helst, egentlig. Når folk skriver noe, eller jeg leser noe, eller noe sånt.

I mostly learn pronunciation from speaking to native speakers. Words, on the other hand, I learn anywhere. From something people write, or from reading, or something.

I: Hva med grammatikk og sånt, da? Hvor føler du at du lærer det, mest?

What about grammar? Where do you think you learn that?

P: Det har jeg ikke lært noe spesielt siden barneskolen, nesten. Etter det så bare satt det, liksom. Og hvis jeg sier ordet, så hører jeg ofte, liksom, hvordan det skal skrives, da.

I haven't learned much grammar since primary school. Since then, it's just stuck, in a way. And if I say a word, I can often hear how to spell it.

(...)

Transcription of interview with participant 2 (male)

Duration: 18 minutes 27 seconds.

Interviewer: Jeg lurte på om du først kan fortelle litt om hvordan du bruker engelsk når du gamer, som jeg jo vet at du gjør?

Could you tell me a little about how you use English when gaming, as I know from earlier that you do?

Participant: Jo, jeg pleier å bruke det når jeg spiller, som sagt, så da ... Jeg spiller jo med folk fra utlandet, så da må jeg jo ofte bruke engelsken. Så spiller jeg med [klassekamerat], også spiller vi med en som heter [navn] som kommer fra Tyskland, så det er ikke så ... Når han snakker engelsk, så er det litt annen uttale han har, så det er litt vanskelig å forstå han noen ganger, men som oftest går det fint, da.

Yes, I usually use it when I play, like you said, so ... As I play with people from other countries, I often have to use English. I also play with [classmate], and we play with someone called [name] from Germany, so that's not ... When he speaks English, he has a different sort of pronunciation, so it is sometimes a bit difficult to understand him. Mostly it's all right, though.

(...)

I: Snakker dere mest med hverandre, eller skriver dere mest til hverandre, eller?

Do you mostly speak or write to each other?

P: Vi pleier å snakke. Så hvis ... Jeg og [klassekamerat] pleier å spille, da, så hvis vi da møter noen, også ser vi at han har et navn som kanskje ligner litt på norsk, så pleier vi å spørre om han er fra Norge eller Tyskland, Sverige, også sier han: «Ja», også spør vi om han vil bli med i Discord.

We usually speak. [Classmate] and I usually play, and if we meet someone with a name that looks Norwegian, we ask him if he's from Norway, Germany or Sweden, and then he says: "Yes", and then we ask him whether he wants to join us on Discord.

I: Ja, og Discord, det var den snakkegreia, den Skypen, på en måte?

Right, and Discord, that was the speaking-thing, the Skype-like app, in a way?

P: Ja.

That's right.

I: Og da får dere øvd litt på engelsk?

And then you get to practise your English?

P: Ja. Lærer nye ord.

Yes. Learning new words.

I: Ja, du gjør det?

You're learning new words there?

P: Ja. Ikke hver dag, men jeg har gjort.

Yes. Not every day, but I have.

I: Ja. Skriver dere noe til hverandre? På engelsk?

Ok. Do you ever write to each other? In English?

P: Ja, men da snakker vi ikke med hverandre som oftest, da. Så, vi pleier å være fem på laget, så da må vi skrive når vi skal komme og hjelpe noen med [uforståelig] eller noe sånn.

Yes, but then we don't usually speak. We're usually five people in a team, and then we have to write to get each other to come and help with [incomprehensible] or something.

I: Ok. Er det mest korte beskjeder, eller hvordan blir det?

Ok. Are these mostly short messages, or what are they like?

P: Det er korte beskjeder, med unntak – hvis noen blir sure på hverandre, så blir det mange lange beskjeder.

They are short, except for – if someone gets angry with each other, there are a lot of long messages.

(...)

I: Ja. Kan jeg spørre hvorfor du spiller, og henger på YouTube?

May I ask why you play digital games and watch YouTube videos?

P: Jeg har en bror, og da jeg var liten, så fikk han seg tidlig en PC, da, og jeg syntes jo det var skikkelig stas i den tida. Så jeg ble nok litt påvirket av han. Også syntes jeg det var gøy, også ville jeg prøve, så har jeg begynt å spille selv. Også YouTube, det er jo ... Jeg vet ikke hvorfor jeg ser på det, men for underholdninga, egentlig.

I have a brother, and when I was younger, he got a computer, which I of course thought was great. So I suppose I've been influenced by him. And I thought it was fun, too, and I wanted to try, and then I started playing myself. And YouTube is ... I don't know why I watch it, but it's for the entertainment, really.

I: Ja. Synes du det er sosialt å spille, for eksempel, med andre?

Do you find playing social, when you do it with others?

P: Ja. Men ikke når man spiller alene, da.

Yes, but not when I play alone.

I: Nei, det tror jeg på. Er det sosiale liksom en motivasjon det òg, på et vis, eller?

I see. Is the social aspect part of your motivation for gaming, in a way?

P: Ja, det er gøyere å komme hjem og sette seg foran PC-en når du vet at sånn tre-fire andre òg blir med.

Yes, it is. It's more fun to get home and in front of the computer when you know that three or four others will join you.

I: Ja. Hva er det du spiller?

Right. What do you play?

P: *League of Legends*.

League of Legends.

I: Er det det eneste, eller?

Is that the only game you play?

P: Akkurat nå, så ja. Jeg spilte litt *Farming Simulator* for litt siden, da.

Nowadays, yes. I did play some Farming Simulator a while ago, though.

I: Ok, er det noe du spiller med andre, eller er det noe du spiller alene?

Ok. Is that something you play with others or on your own?

P: Det spiller jeg alene, da.

I play that on my own.

I: Ja. Er det online eller offline?

Ok. Is that online or offline?

P: Det er online. Eller, man kan spille offline, også kan man spille online.

It's online. Or, you can play offline, too.

(...)

P: Jeg har jo spilt *League of Legends* i seks år nå, så.

I've played League of Legends for six years now, so.

I: Å ja, såpass! Har det gått an å kommunisere med hverandre i Discord gjennom alle de seks årene?

Wow, that's a long time! Has it been possible to communicate over Dicsord for all six years?

P: Nei. Discord er jo nytt etter hvert, på grunn av – det gikk mye i Skype før, men når jeg først skulle over til Discord, så var det så mye duppeditter at jeg ikke skjønnte noe. Så det var noe å venne seg til.

No. Discord is fairly new, because – we used Skype a lot earlier, and when I switched to Discord, there were so many doodads that I didn't understand anything. So it took some getting used to.

I: Hvordan lærer du nye ord? Det sa du jo litt om i stad, da, at du lærer når du snakker med ...

How do you learn new words? You mentioned earlier that you learn when you speak with ...

P: Ja, det er, når jeg snakker med nye folk, da, så bruker de ord, og så hvis jeg sier sånn der: «What did you say?», og så må han forklare det på en annen måte, da skjønner jeg at det ordet betydde det, da.

Yes, it is when I speak to new people who use words, and then I say: "What did you say?", and then he has to explain it in a different way so that I will understand what the word means.

(...)

I: Er det stort sett der du lærer nye ord, eller hender det at du lærer noe på skolen, eller hvis du leser noe, eller et eller annet også?

Is this mostly where you learn new words, or do you learn any in school or from reading or something?

P: Jeg lærer veldig mye på TV og serier. Det er vel der jeg lærer mest, egentlig.

I learn a lot from watching TV series. I think that's where I learn the most, really.

(...)

I: Hvor tror du selv du lærer mest engelsk?

Where do you think you learn the most English?

P: Det er vel på TV og serier, tror jeg.

From watching TV and series, I think.

I: Mer enn når du snakker med han tyskeren og sånt?

More than when you speak with the German guy?

P: Ja, på grunn av vi pleier ofte å gjenta noe vi har sagt før, da.

Yes, because we usually repeat things we've said before.

I: Ja, det er mye gjentakelse av de samme ordene og uttrykkene og sånn på gaming?

Right, so there is a lot of repetition of words and phrases and stuff in gaming?

P: Ja.

Yes.

I: TV og serier, ja. Er det der du føler du lærer alt, holdt jeg på å si, både ord og uttale og grammatikk og sånt, eller har du noen formening om hvor du lærer de ulike tingene?

So, TV and series. Is this where you learn all of your English; I mean, both words and pronunciation and grammar? Or do you have any thoughts on where you learn the different components?

P: Jeg ser på «Pawn Shop» - vet du hva det er?

I watch "Pawn Shop" – do you know what that is?

I: Ja.

I do.

P: Der lærer jeg veldig ... Eller, der får jeg bedre uttale. Eller, om jeg får bedre uttale, men jeg blir påvirket av uttalen deres.

From that I learn a lot ... Or, I get better pronunciation. Or, I don't know if it gets better, but it influences me.

(...)

I: Og nye ord, det var TV og serier, sa du jo i stad. Og grammatikk, hvor føler du at du lærer, eller har lært, det?

And you said you learn new words from TV series. What about grammar; where do you think you learn or have learned that?

P: Det er nok på skolen, tror jeg.

In school, I think.

Transcription of interview with participant 3 (male)

Duration: 24 minutes 21 seconds.

Interviewer: Første spørsmål er om du kan fortelle litt om hvordan du bruker engelsk når du gamer – ja, kan jo begynne med når du gamer, jeg vet at du gjør det.

Could you tell me a little about how you use English when you are gaming? I thought we'd start there, as I know you engage in gaming.

Participant: Ja, vi pleier å bruke for eksempel navn på karakterer, og stedsnavn. Og spillet er ofte på engelsk, fordi det er jo lagd i utlandet, og ikke i Norge, liksom, også hvis vi møter på nye folk som ikke kan norsk, så blir vi nødt til å snakke engelsk. Også snakker vi ganske ofte engelsk mellom oss, selv om vi kan liksom bruke norsk, fordi vi foretrekker engelsk.

I can. We usually use the names of characters and places. The games are mostly in English, because they are made abroad and not in Norway, and if we meet new people who don't speak Norwegian, we have to speak English. We often speak English between ourselves, too, even though we could have used Norwegian, because we prefer English.

(...)

I: Snakker dere, skriver dere, eller gjør dere begge deler, eller hvordan foregår det når dere gamer?

When you are gaming, do you talk to each other, write, or both, or how does it work?

P: Mens vi spiller så er det ofte ... Snakker vi. Fordi vi må jo snakke «live» sammen. Vi kan ikke skrive og spille samtidig, for eksempel. Men for eksempel når vi sender «memes» til hverandre og sånn, så er det ofte, da skriver vi engelske ting under, for å følge etter på det, liksom. Så, de ... Jeg gjør begge deler. Også når jeg ser på YouTube, så lytter jeg jo ofte til engelsk. Jeg ser ikke på norske YouTubere. Det er mest engelsk.

While we're gaming, it's often ... We talk. Because we have to talk "live". We can't write and talk at the same time, for instance. But when we send "memes" to each other and stuff, we write English stuff below, just to follow up. So, they... I do both. Also, when I watch YouTube, I often listen to English. I don't watch Norwegian YouTubers. It's mostly English.

(...)

I: Men, ja, du sier at dere snakker når dere gamer fordi dere må ... Dere må kommunisere, dere må bli enige, var det det du sa?

Well, yes, you say you are speaking to each other when you are gaming because you have to ... You have to communicate, you have to agree, wasn't that what you were saying?

P: Ja, for å gjøre det beste til ... For å vinne, da. Fordi hvis ikke ...

Yes, to do the best for ... To win. Because, if not ...

I: Dere spiller på lag?

You mostly play as teams?

P: Ja. For å vinne. Også er det liksom selvfølge, så snakker man engelsk for å vinne. Så det er jo bare for å gjøre det beste for laget, da. Fordi hvis det er, liksom, tre som snakker, også er det seks personer på laget, så blir det liksom litt «misunderstandings», da. Jeg vet ikke hva det er på norsk.

Yes. In order to win. And then it's sort of natural; we speak English in order to win. It's just to do what is best for the team. Because, if three people are talking and we are a team of six, there will be some "misunderstandings". I don't know what that is in Norwegian.

I: Misforståelser.

Misunderstandings.

P: Ja. Så da må alle liksom være med og snakke, også hjelpe hverandre. Så kan vi liksom si ifra hvis motstanderen er der og der, og hva vi skal gjøre fremover og sånn.

Yes. So, all of us sort of have to speak, to help each other. Then we can warn if the opponent is there or there, and what to do later on.

(...)

I: Hvilke spill spiller dere?

Which games do you play?

P: Det kommer egentlig an på hvilke spill som er liksom mote eller *på* nå, da. Men nå for tida er det *Overwatch*.
That depends on which games are currently popular or *in* now. But these days, it is *Overwatch*.

I: Og, si, det siste året. Hva har dere spilt?

And, let's say, in the last year. What have you played?

P: Vi har spilt litt *Fortnite*, kanskje *Apex [Legends]*, men vi pleier egentlig å spille, sånn, mye *Call of Duty*, men i år var det et dårlig spill, så vi har ikke spilt det så mye.

We have played some *Fortnite*, maybe *Apex [Legends]*, but we normally play, like, a lot of *Call of Duty*, but this year it was a bad game, so we haven't played it much.

I: Og er det her stort sett krigsspill, eller?

And these are mostly war games?

P: Skytespill, sånn at du må liksom ... *Fortnite* og *Apex* er sånn Battle Royale, så det er sånn flere på en «map», også er det, man må liksom finne våpen på «mappet» for å «survive», da. Det er som *Hunger Games*, liksom.
Shooting games, so you have to, like ... *Fortnite* and *Apex* are so-called Battle Royale games, so there are several people on a "map", and then you have to find weapons on the map in order to survive. It's like the *Hunger Games*.

I: Ok. Og *Overwatch* og *Call of Duty*?

Ok. And *Overwatch* and *Call of Duty*?

P: Det er sånn du går inn i spillet, også er det «team death match», også er det noen ganger sånn «capture the point», så du må liksom ...

There, you enter the game, and then there is a "team death match", and sometimes it is "capture the point", so you have to like ...

I: Å ja, litt som *Battlefield*?

Ah, right, similar to *Battlefield*?

P: Ja. Du må liksom ta over et «point» også holde det for å vinne det, liksom. Så må du bare forsvare det fra det andre laget, og sånn.

Yes. You have to sort of take over a «point» and hold it in order to win. So you have to defend it from the other team, and so on.

I: Hvorfor gamer du? Hva får du ut av det, på et vis?

Why are you gaming? What do you get out of it, in a way?

P: Jeg gamer jo ofte for å være sammen med venner, fordi det er sosialt. Også er det gøy. Det er det viktigste, egentlig – å ha det gøy, for oss. Ja, bare for å «spende time» med venner og sånn.

I am often gaming to be with friends, because it is social. And it's fun. That's the most important thing, really – to have fun, for us. Yes, just to spend time with friends.

(...)

I: Hvordan tror du selv at du lærer nye ord?

How do you think you learn new words?

P: Det er hvis jeg hører det i en sammenheng, som jeg ikke har liksom hørt det før, eller et ord som blir brukt et sted som jeg ikke trodde det skulle liksom bli brukt før, eller har hørt det før, så tenker jeg, liksom, hvorfor det ble plotta inn der og sånn. Det er liksom veldig få ganger jeg må, liksom, søke på, liksom, det ordet også «definition», da. Men jeg har gjort det før.

It is if I hear it in a context, which I haven't heard before, or a word being used in a place I didn't expect or

haven't heard before. Then I'm reflecting on why it was used there, and stuff. I very rarely have to search for a given word and "definition". But I have done it before.

I: Så du søker på engelsk? Du vil ha en definisjon på engelsk?

So you are looking up words in English? You want to get definitions in English?

P: Ja, jeg søker på «definition» på engelsk. Men det er ikke ofte. Liksom, det er bare på sånn komplekse ord som jeg ikke har noen anelse. Men ofte greier jeg å tenke meg fram til, liksom, sammenhengen og når det blir brukt og sånt. Jeg prøver helst å gjøre det istedenfor å søke, fordi jeg føler at det er en god trening. [uforståelig]
Yes, I look up «definition» in English. But it's not often. It's just for complex words that I don't have any idea of the meaning of. I can often make out the context and when it is being used. I prefer to do that instead of searching, because I feel like it's good practice. [incomprehensible]

(...)

I: Spør du noen [om hva ord betyr], noen ganger, hvis du gamer med noen, for eksempel?

Do you ever ask anyone [about the meaning of words], sometimes, if you are gaming with someone, for example?

P: Nei, det er ikke ofte. Ja, men ... Når man gamer, så bruker man liksom ikke så vanskelige ord. Det er liksom vanlige ... Fordi, du skal jo ikke bli bestevenner med de du spiller med. Det er liksom, kanskje ... Du spiller med de i 15 minutter, halvtime, også kanskje du ikke ser de igjen, så det er liksom bare for å vinne den kampen. Så ... Er det liksom det som er greia.

No, not often. When you are gaming, you don't use difficult words. It's more regular ... Because, you're not making best friends with the people you're playing with. It's sort of, maybe ... You play with them for 15 minutes, half an hour, and you might not see them again, so it's sort of just for winning the game. So ... That's the way it works.

(...)

I: Hender det at dere hjelper hverandre med språket, hvis du snakker med andre som heller ...? Eller, som heller ikke har engelsk som morsmål, for eksempel? At dere forklarer ting for hverandre, eller ...?

Do you ever help each other with the language when you are speaking with others who ...? Other people who aren't native speakers of English, for instance? Do you explain things to each other, or ...?

P: Hvis, nei ... Det kan hende liksom ofte de ikke skjønner noe vi sier, og da sier vi det om igjen, kanskje bruke noen andre ord som er litt mer grunnleggende.

If, no ... It often happens that they don't understand something we are saying, and then we will repeat it, and maybe use different words that are more basic.

(...)

I: Hvor tror du selv at du lærer mest engelsk?

Where or how do you think you learn or have learned the most English?

P: Jeg lærte mest engelsk da jeg var liten og spilte fotball med de som var eldre, fordi [jeg spilte med mange som ikke kunne norsk], så jeg måtte liksom snakke engelsk, selv om jeg var i sånn første, andre klasse. For å spille med de, eller, få lov til å spille med de eldre gutta. Så det var – jeg tror det var der jeg ble ganske god i engelsk.

I learned the most English when I was younger and played football with older boys, because [I played with a lot of people who didn't speak Norwegian]³⁰, so I had to speak English even though I was in the first or second grade. To be allowed to play with the older boys, I mean. I think this was when I obtained most of my English skills.

I: Hva med nå, hvor tror du du ... Hvis du skal lære mer engelsk nå, hvor tenker du at du lærer mest av det?

How about now; where do you think you learn English these days?

³⁰ Actual wording removed for privacy reasons.

P: Nå, kanskje av å lese engelske ting på nett, eller, avis, eller artikler, for eksempel.

Now; perhaps from reading English stuff on the Internet, like newspapers or other articles, for instance.

I: Føler du at du lærer noe når du gamer?

Do you think you learn anything while gaming?

P: Gaming er liksom ... [uforståelig] man sier liksom det samme om og om igjen, på en måte, så det blir ofte, liksom, det grunnleggende, bare for å gjøre seg forstått, liksom. Så det er ikke sånn vanlig – veldig vanskelige ord som blir brukt, ofte. Fordi folk vet at det er liksom ikke alle som er på, liksom det engelske nivået, for eksempel hvis det er engelskmenn som snakker, da, så bruker de liksom ofte bare liksom: «Gå til B» eller «Gå til A», for eksempel. Sånn vanlige ting.

In gaming, we say the same things over and over, so we just use the basics to make ourselves understood. Most often there are few difficult words being used. People know that not all of the players are proficient in English. When Englishmen speak, for instance, they often just say: «Go to B» or “Go to A”, for instance.

Regular things.

I: Så fort du har kommet inn i – inn i spillet, så har du liksom de orda du–?

So as soon as you’ve learned the basics of the game, you have also learned the words you need–?

P: Ja, det er bare noen faste ord – kanskje 100 ord, som bare er liksom alltid der. Det er ikke ofte nye ord kommer inn. Så ... lærer ikke masse nye ord der.

Yes, there are only a few regular words – maybe a hundred – that just are there, in a way. New words aren’t included very often. So ... I don’t learn lots of new words there.

I: Ja. Du leser engelsk på nett, ja, og da tenker du at du lærer nye ord, eller grammatikk, eller annet?

Right. You read English online, then, and then you learn some new words or some grammar, or perhaps something else?

P: Ja, hvis det er liksom for eksempel en avisartikkel, da, så bruker de noen vanskelige ord, så tenker jeg: «Oi, det visste jeg ikke», liksom. Så noen ganger så søker jeg det opp, og noen ganger bare ser jeg sammenhengen. **Yes, and if there is a newspaper article, for instance, using difficult words, I think: “Oh, I didn’t know that”. Sometimes I look up the word, but at other times I just infer the meaning from the context.**

(...)

I: Hva med grammatikk? Hvor tenker du at du lærer mest av det?

Where do you learn the most grammar?

P: Det er vel når jeg har hørt på folk snakke, kanskje. Så lærer jeg hvordan det skal brukes. Eller, da jeg var mindre ... På YouTube, for eksempel. Når jeg har hørt på folk – eller, britiske folk snakke.

That would be from hearing people talk, I think. Then I learn how to use the language. Or, when I was younger ... When watching YouTube, for instance. When I have listened to people – that is, British people – talk.

I: Uttale – hvor tenker du du lærer det?

Where do you think you learn pronunciation?

P: Øving. Eller, når jeg spilte fotball, så måtte jeg jo snakke selv om jeg ikke var veldig god. Det er vel det som har gjort meg bedre. Så jeg tror øving er greia.

By practising. Or, when I played football, I had to speak despite not being very good at it. I suppose that is what has made me better. I think practising it really works.

(...)

I: Er det noe annet du vil tilføye, om hvordan du bruker engelsk, eller, på fritida, eller på skolen, eller, ja?

Is there anything else you would like to add about how you use English, either in school or out of school?

P: Bruker ofte engelsk når vi snakker til hverandre, for eksempel så har jeg og [to gutter på trinnet] en gruppe på Instagram og på Snapchat, der vi sender hverandre «memes» og sånn, og da er det ofte vi snakker engelsk,

liksom, for å legge til noe på «memen». Eller for å si noe. Det er veldig sjelden du ser norsk, liksom. Det er alltid engelsk, på en måte, fordi vi ser at alle vi tre er der at vi skjønner, liksom, veldig godt engelsk, så tenker ... Også foretrekker vi alle engelsk ovenfor norsk, så vi bruker bare engelsk istedenfor norsk.

We often use English when we talk to each other. [Two fellow ninth grade boys] and I have a group both on Instagram and on Snapchat where we send memes to each other and stuff. Then we often speak English, to add something to the meme. Or to say something. You very rarely see Norwegian, in a way. It's always English, because we know that all three of us understand English very well, so we think ... And we all prefer English over Norwegian, so we just use English instead of Norwegian.

(...)

Transcription of interview with participant 4 (male)

Duration: 18 minutes 19 seconds.

Interviewer: Kan du fortelle litt om hvordan du bruker engelsk når du gamer? Vi kan begynne med det, siden jeg vet at du driver med det.

Could you tell me a little about how you use English when gaming? We can start there, as I know you play online games.

Participant: Jeg bruker jo ... Jeg spiller jo med utenlandske folk inniblant. Det er ikke sånn veldig mye. Men da må man jo bruke engelsk, for – liksom hvis jeg spiller med en fra Sveits, så skjønner jo ikke han norsk, så da må vi jo finne et felles språk, da. Da blir det jo engelsk. Så det er jo der man bruker det, men vi bruker det jo ... Det hender liksom når jeg snakker med venner at vi bare snakker på engelsk for moro skyld, liksom, og bare snakker sånn tulleengelsk og sånne ting. Og det er bare noe med den flyten og sånn, at det er, liksom, noen ganger så er det litt rart å snakke norsk for oss. Liksom, ting flyter mye bedre på engelsk, da. Så det hender vi bare bruker engelsk.

I use ... I sometimes play with foreign people. Not a lot. But then you would have to use English, because – if I play with someone from Switzerland, he won't understand Norwegian, so we need to use a language we both know. And that's English. So that's where we use it, but we use it ... Sometimes when I speak to my friends, we speak English, for the fun of it, and speak mock English and things like that. There's just something about the flow of it that sometimes makes it strange for us to speak Norwegian. I mean, things flow better in English. So sometimes we just use English.

I: I andre sammenhenger enn gaming og?

Outside of gaming, too?

P: Ja.

Yes.

I: Snakker dere mest, eller skriver dere en del, og ...?

Do you mostly speak or write, or ...?

P: Når vi gamer, så er det jo snakking, men det hender jo at vi bruker engelsk når vi skriver til hverandre og sånne ting også, da, på meldinger og sånt.

When we play online games, we speak, but we sometimes use English when writing to each other, in text messages and stuff.

I: Og det gjelder med norske venner også?

With your Norwegian friends, too?

P: Ja.

Yes.

I: Hva med blanding? Hender det at dere blander norsk og engelsk?

Do you ever mix or combine Norwegian and English?

P: Ja, det gjør vi hele tida. Sånn, hvis vi bare ... Det er jo lettere å på en måte – du får jo større ordforråd når du kan bruke begge språk, så liksom hvis du for eksempel skal snakke med noen, da, så er det jo – snakker du vanlig norsk, også plutselig er det på en måte et ord som du ikke kommer helt på hva det er på norsk, eller – eller så har du liksom fått det ordet fra en engelsk sammenheng, så blir det liksom ... Så hender det vi bare bytter til engelsk eller ... Det med kodeveksling, sånn at du tar et engelsk ord og bare tar sånn norsk ending på det, da. Sånn liksom hvis du skjøt noen i huet, så sier jeg: «Jeg headshotta han». Du sier ikke: «Ah, jeg skjøt han i huet», eller: «Jeg tok et hodeskudd» eller noe sånt.

Yes, we do that all the time. It is easier, in a way, as you get a more extensive vocabulary when you can use both languages. Then, if you speak with someone in regular Norwegian and can't remember the Norwegian word for something, or if you have learned the word in an English context, you would ... Then we sometimes just switch to English, or ... You know, code-switching; when you use English words but give them Norwegian

suffixes. Like, if you shot someone in the head [in the game], I would say: “I hit him with a headshot³¹”. You don’t say: “Ah, I shot him in the head”, or: “I took a headshot” or something like that.

(...)

I: Hvorfor gamer du? Altså, hva er motivasjonen din? Hva får du ut av det?

Why do you play digital games? I mean, what are your motivations? What do you get out of it?

P: Det er jo bare for å ha noe å gjøre, liksom. Det ... Jeg vil jo ikke bli profesjonell i det, eller noe sånt, men det ... Motivasjonen er jo bare at det er gøy, liksom. Jeg prøver jo ikke direkte få noe ut av det, men jeg får jo det uansett, da.

I guess I do it to have something to do. I don’t want to be a professional gamer or anything, but ... What motivates me is that it is fun. I don’t try to get anything out of it, but it is still rewarding, in a way.

I: Hva med YouTube?

P: Motivasjonen min til å se på YouTube-videoer? Altså, det er jo, for å liksom, hvis det er ting jeg er interessert i, så er det jo for å lære mer om det, ofte, da. Jeg ser ikke like mye på, liksom, andre som spiller, da. Jeg ser mer på sånn interessante videoer, da. Det er jo for å lære, egentlig.

My motivation for watching YouTube videos? Well, if there are things I’m interested in, then it often is to learn more about that. I don’t really watch other people play that much. I’d rather watch interesting videos. It’s to learn, really.

(...)

I: Hvordan lærer du nye ord?

How do you learn new words?

P: ... Det er jo ikke sånn at jeg hører et ord og bare: «Å nei, hva betyr det?», også googler jeg det, liksom. Du må jo bare høre sammenhengen, også når du hører den tingen nok, så får du en forståelse etter hvert på hva det betyr, da. Så det er bare noe som kommer.

... It’s not like I hear a word and just: “Oh no, what does that mean?”, and then google it. You just have to listen to the context, and when you hear the item enough times, you understand what it means. So it just happens automatically.

I: Hva med hvis du spiller med noen, og så bruker de noen ord du ikke er kjent med, eller, skjer det?

What if you’re playing with someone; do they ever use words you are not familiar with?

P: Det skjer ikke veldig ofte, og da blir det jo igjen ... Man skjønner jo veldig godt ting bare ut ifra sammenheng, liksom. Så det ... Som oftest, så forstår jeg hva de mener, selv om jeg ikke forstår akkurat ett ord, da.

It doesn’t happen very often, and again; one usually understands the words from their context. Most often I understand what they mean even if I don’t understand one particular word.

I: Spør du dem noen gang?

Do you ever ask them?

P: Det hender, men det er ikke sånn veldig ofte. Vi bruker jo veldig simpelt språk, egentlig, når vi gamer og sånn. For det er jo ... Du skal gi så mye informasjon som mulig på så kortest tid og så færrest stavelser, liksom. Så det blir veldig simpelt språk, da.

It happens, but not very often. We tend to use a very simple language when gaming, because ... you’re supposed to provide a lot of information in the shortest possible amount of time and while using the lowest number of syllables possible, in a way. So the language we use is uncomplicated.

I: Ja, du må rekke å si det i situasjonen?

You would have to be able to say it fast enough for it to be useful in the situation?

³¹ Here, he illustrated using the English word ‘headshot’ to make a verb in Norwegian by applying Norwegian conjugation to it.

P: Ja.
Yes.

I: Ja, hva er det du spiller, forresten?
What do you play, by the way?

P: Jeg spiller ... Nå for tida, så har jeg liksom ... Jeg og vennene mine spiller egentlig ikke det samme lenger, da, men det hender jo jeg spiller *Overwatch* med de andre. Men til vanlig, så spiller jeg noe som heter *Rocket League*, da, men det er det egentlig bare jeg som spiller i vennegjengen. Og da spiller jeg alene, så da snakker jeg egentlig ikke med noen.

I play ... These days I have ... My friends and I no longer play the same games, but I sometimes still play *Overwatch* with the others. Usually, though, I play something called *Rocket League*, but I am the only one in the group who plays it. Then I play alone, so I don't really talk to anyone while doing it.

I: Er det offline eller er det-?
Is it offline, or is it-?

P: Nei, det er online. Men da er det ikke – det er ikke like vanlig å liksom snakke med folk da.
No, it's online. But one doesn't typically talk to people when playing it.

(...)

I: Det å spille *Overwatch* med andre, kan en av motivasjonene til å spille være det sosiale?
When playing *Overwatch* with the others, are you motivated by the social aspects of it?

P: Ja, det kan det egentlig. Det er jo for å, liksom, spille med de andre og ha noe å gjøre sammen, da. For det er jo seks stykker på laget som må samarbeide, og hvis du ikke samarbeider, så blir du jo kjørt over. Så det er jo med det sosiale også, ja. Ha noe å gjøre sammen.

Yes, I am. I do it to play with the others and to have something to do together. There are six of us who need to cooperate, and if you don't cooperate, you'll be flattened. So the social aspect is part of it. Having something to do together.

(...)

I: Det er kanskje ikke så relevant lenger, heller, spørsmål sju. Om dere ... Om du og medspillerne dine hjelper hverandre med språket? Hvis ikke du spiller så veldig mye lenger ... Men tidligere?
It might not be relevant now, question number 7. Whether you ... Whether you and your fellow players help each other with the language? But if you don't play that much anymore ... But earlier?

P: Nei, altså, vi pleier jo ikke å hjelpe hverandre med språket, egentlig, for vi skjønner jo som oftest hva en person mener. Da gidder vi ikke drive og rette på det, så lenge vi skjønner det, liksom. Så da ... Vi hjelper egentlig ikke hverandre med språket, nei.

No, we don't usually help each other with the language, because most often we understand what the others mean. Then we don't bother correcting it, as long as we understand it. So, then ... We don't really help each other with the language.

(...)

I: Nei. Hvor tror du selv at du lærer mest engelsk?
Where do you think you learn and have learned the most English?

P: Å snakke tror jeg nok det blir å liksom bruke det selv, da – å snakke med utenlandske. Men selve det å lære engelsk er nok mer YouTube-videoer og sånne ting, da, for da kan du liksom ... Da har du ikke det tidspresset at du skal si så mye som mulig på så kortest tid. Da kan du, liksom, snakke ordentlig og bruke mer avansert språk og ting, og da lærer du jo språket mye bedre, da.

I have probably learned to speak English by using it myself – speaking with foreign people. Learning the language is most likely something I have done when watching YouTube videos and stuff, because then you can ... You're not pressured to say a lot in a short amount of time. Then you can speak properly and use a more complex language, and then you'll learn the language much better.

I: Ja. Leser du noen nyhetsartikler, eller noe, på engelsk?
Do you read news articles, or other things, in English?

P: Ja, jeg leser jo bøker også, på engelsk.
Yes, and I read books too in English.

I: Bruker du mye tid på det, eller?
Do you spend much time doing that?

P: Ja. Det er en astrofysiker og forfatter som heter Neil deGrasse Tyson, og jeg har ... Prøver å lese alle bøkene hans, da.
I do. There is this astrophysicist and author called Neil deGrasse Tyson, and I have ... I am trying to read all of his books.

I: Å, såpass?
Oh, really?

P: Så jeg har lest tre nå, på engelsk.
I've read three of his books now, in English.

I: Er det her veldig vitenskapelige bøker, da?
Are these very scientific books?

P: Ja. Det er jo om astrofysikk og sånne ting, da.
Yes. He writes about astrophysics and things like that.

I: Lærer du noen nye ord når du leser disse bøkene?
Do you learn new words when reading these books?

P: Ja, gjør jo egentlig det, men det er jo sånn – det er jo ikke ord du kan bruke i dagligdagse sammenhenger, så det er jo sånn ... Det blir jo litt annerledes, da.
Yes, I do, but they aren't really words one can use on a daily basis, so it is ... different.

I: Ja. Avanserte ord, da?
Complex words, then?

P: Ja. Sånn, jeg kan ikke liksom drive og snakke om «cosmic radioactive background» i dagligdagse sammenhenger, liksom.
Yes. I can't really talk about 'cosmic radioactive background' in everyday situations, if you know what I mean.

I: Det kommer liksom ikke opp naturlig?
It somehow isn't a topic that comes up?

P: Nei, det gjør det ikke.
It really isn't.

I: Nei, den ser jeg. Ja, det var ... Hva med grammatikk, hvor tenker du at du lærer mest av det?
Where do you think you learn the most grammar?

P: Det er nok mest lesing, tror jeg, for da, liksom, skal jo alt være riktig, og da ser du jo hvordan det skal være. For, liksom, når du ser på en YouTube-video, så kan det jo hende at den personen snakker, liksom, litt ugrammatisk, da. Det er jo mange som gjør det. Spesielt i gaming, så er det jo – du sier jo ikke fullstendige setninger, veldig ofte, så du lærer jo ikke akkurat grammatikk der.
Mostly from reading, I think, because everything is supposed to be correct in writing and then I get to see how it is supposed to be. When watching a YouTube video, for instance, the person talking may speak ungrammatically. A lot of people do. In gaming in particular, people very often use incomplete sentences, so one wouldn't learn much grammar from gaming.

I: Så i «grammatikk», så legger du jo også da, selvfølgelig – høres det ut som – setningsstruktur, setningsoppbygging.

By grammar, then, it sounds as though you mean sentence structure or syntax, too?

P: Ja, setningsoppbygging blir veldig annerledes. Når du skal prøve å si ting så fort som mulig, så kutter du veldig ofte ut ord, og sånne ting.

Yes, the syntax often is very different. When trying to say things quickly, words are often omitted, for instance.

I: Ja. Bøying av ord og sånn, er det også noe du plukker opp når du leser, tenker du? Altså at du bøyer ord riktig, at subjektet og verbalet henger sammen, at det er riktig ...?

How about conjugations and these things; do you learn this from reading, too? You know, conjugating words correctly, making sure there is subject-verb agreement, for instance?

P: Det er nok mer sånn jeg har lært på skolen, egentlig, også bare vet jeg hvordan det er. Så jeg tror ikke jeg har, liksom, plukka opp noe der fra lesing, liksom, det er vel bare sånne ting jeg kan fra før av.

I have probably learned most of that in school, and I just know how it is supposed to be. I don't really think I've learned any of that from reading, really, as I knew these things already.

I: Så noe grammatikk på skolen, og noe ved lesing?

So, then, you learn some grammar in school and some from reading?

P: Ja.

Yes.

[An additional question was asked in a second recording (same day, following the first recording) after some small talk about gaming and English.]

Duration, second recording: 1 minute, 10 seconds.

I: Spørsmålet er egentlig: Mellom «games», som du snakka om, da, om dere blir noe kjent med hverandre, om dere da snakker litt mer, og litt mer utfyllende?

The question is, between games, when you speak more with each other, do you get to know each other more?

P: For, liksom, på ... Når man gamer med noen, så er det jo ikke – det er jo ikke som å møte noen «in real life», for da, liksom, snakker du om, ja: «Hvem er du?», og, liksom: «Hvor kommer du fra?», og sånne ting. Mens når man gamer, så er det på en måte ... Det er et sånn samfunn der man bare, nesten, oppfører seg som man kjenner den personen allerede. Så man bare, liksom, vitser og sier ting, og sånne ting. Det blir jo ikke som å møte noen på en date, eller sånne ting, liksom.

When you're gaming with someone, it is not like meeting them in real life, because then you would ask each other: 'Who are you?' and 'Where do you come from?' and things like that. When you're gaming, it is more like ... it is a community in which you behave as if you already know the other people. You just make jokes and say things. It is not like meeting someone on a date or anything like that.

I: Men er språket mer komplisert enn det dere bruker i spillet, når dere snakker med hverandre utenom [et «game»]?

But would you say the language you use between games is more advanced than what you use in a game?

P: Ja, det er det. For da blir det mer, sånn, ordentlige samtaler. Da har du ikke tidspress eller noen ting. Så kan du bare si akkurat det du føler for, liksom.

Yes, it is. Because the conversation is more proper or complete, kind of. You're not in a rush or anything. You can just say what you feel like saying, in a way.

Transcription of interview with participant 5 (female)

Duration: 8 minutes 31 seconds.

I: Kan du fortelle om hvordan du bruker engelsk på fritida?

Could you tell me about how you use English in your spare time?

(...)

P: Jeg hører vel egentlig mest på engelsk. Jeg prater ikke så mye engelsk selv, egentlig. Jeg driver ikke og gamer og sånt. Det gjør jeg ikke. Men jeg ser en del på YouTube, og da er det egentlig engelskvideoer det går i, og samme med filmer og serier og sånt. Det er bare engelsk, egentlig.

I suppose I listen to English for the most part. I don't really talk that much in English. I don't play digital games and things like that. But I watch quite a lot of YouTube videos, and those videos are mostly in English. The films and TV series I watch are also mostly in English.

(...)

I: Søker du opp på YouTube og sånt da, på engelsk også?

Do you write in English, too, when you for instance search for YouTube videos?

P: Ja. Hvis jeg søker, så går det mest i engelsk.

I do. When I search for something, I mostly do it in English.

I: Hva er grunnen til at du ser på YouTube, eller ser på TV-serier eller film? Hva får du ut av det, på en måte?

Why do you watch YouTube, TV series and films? What do you get out of it, in a way?

P: Det er vel mest for underholdning, at det er gøy å se på, egentlig.

I suppose it mostly is for the entertainment; that it is fun to watch, really.

(...)

I: Lærer du nye ord når du ser på YouTube eller TV?

Do you learn new words when watching YouTube or TV?

P: Ja, jeg tror jeg gjør det. Jeg husker ... Eller, det er ganske lenge siden nå, da, men når jeg var litt mindre så så jeg alltid på sånne YouTube-videoer, og da skjønnte jeg ikke hva de sa, og da hadde jeg aldri – jeg hadde ikke på lyd, noen ganger, for det plaga meg ikke, for jeg skjønnte det ikke uansett, og etter hvert så kom det liksom – jeg vet ikke – jeg forstod mer og mer, da. Jeg tror ikke det bare var på grunn av skolen. Jeg vet ikke. Jeg tror jeg fikk noe ut av det, da.

Yes, I think I do. I remember ... Well, it's been a long time, but when I was younger, I always watched these YouTube videos, and I didn't understand what they were saying. Sometimes I didn't even have the sound on, as I couldn't understand what they were saying either way, but after a while I understood more and more. I don't think that was just because of school. I don't know. I think I got something out of it.

I: Er det sånn at du noen ganger søker opp ord som du er usikker på, eller spør noen?

Do you ever look up words you don't know, or ask someone about the meaning of them?

P: Det har vært hvis jeg ikke har forstått ting. Så vil jeg jo gjerne vite hva det betyr.

Only if there was something I didn't understand. Then I want to know what it means.

(...)

I: Hender det at du gjetter, litt ut ifra sammenheng, hva orda kan bety, og så gidder du ikke å søke det opp?

Do you ever guess the meaning of words from their context, and then skip looking them up?

P: Ja, jeg tror det går litt av seg selv, at man på en måte forstår sammenhengen, så det er ikke så viktig, akkurat det ene ordet.

Yes, I think that when understanding the context, that one word is no longer as important.

I: Ja, du snakker jo ikke så mye, eller du kommuniserer ikke så mye med folk fra andre land, stemmer det?
Is it correct that you don't communicate much with people from other countries?

P: Ja.
Yes.

(...)

I: Hvor eller hvordan tror du du lærer mest engelsk?
Where or how do you think you learn or have learned the most English?

P: Akkurat nå, liksom, eller tidligere også?
Right now, or earlier too?

I: Nei, gjerne tidligere også. Begge deler.
Earlier too. Both.

P: Jeg tror jeg har lært ganske mye fra skolen. Det er jeg ganske sikker på. Men kanskje litt mer sånn uttale og sånt er det mulig jeg har fått litt mer fra, jeg vet ikke, sånn, serier, filmer og sånt jeg har sett på engelsk. Eller, jeg kan se for meg at det er det. For da ... Jeg hører jo hva de sier og sånt, og det er ikke det samme på skolen alltid. I hvert fall ikke på barneskolen, for da ... Nå snakker jo læreren engelsk i timene, men det gjorde vi ikke på barneskolen, for eksempel. Da gikk det jo i norsk, og så lærte du litt om engelsken og sånt, da. Så jeg tror min uttale kanskje kommer fra, ja, film og sånt som jeg sa.
I think I've learned a lot in school. I am quite sure about it. I might have learned pronunciation and stuff from TV-series and films and other things I've watched that are in English. I believe that this is the case, at least. I hear what they say, and it is not the same in school. At least not in elementary school, because then ... Now the teacher speaks English in class, but we didn't in elementary school, for instance. Then we spoke Norwegian and learned a little about English. So I think my pronunciation comes from film and the other things I mentioned.

I: Ja. Hva med ord og grammatikk og sånt? Og nå, kanskje?
What about words and grammar and other things? And more recently, perhaps?

P: Det er vel mer på skolen, tror jeg. For det tenker jeg ikke så mye over når jeg hører folk som prater. Da er det mer hvordan de prater, liksom.
That would be in school, I suppose. I don't reflect much on these things when I hear people talk. Then I focus more on how they talk.

I: Er det noe annet du vil si om hvordan du lærer engelsk, hvor du lærer engelsk, eller hvordan du bruker engelsk, på fritida kontra på skolen?
Is there anything else you would like to add about how you learn English, where you learn it, or how you use it in and out of school?

P: Jeg bruker ikke engelsk så veldig mye. Det er mer sånne småord innimellom. Sånn som ... Nei, jeg vet ikke. Jeg skal jo ha en presentasjon om det i morgen, eller, om hvordan vi blir påvirket og sånt. Og da har jeg litt om engelsk. Vi bruker jo litt engelske ord.
I don't use English that much. If I do, it is mainly just words here and there. Like ... no, I don't know. I am going to have a presentation on this tomorrow, on how [our language] is being influenced. Then I'll talk a little about English. We do use some English words, after all.

I: Ja, inni norsken, tenker du på?
When you speak Norwegian, you mean?

P: Ja. Så det er vel mer sånn. Jeg prater ikke rent engelsk så ofte på fritida.
Yes. It's mostly like that. Otherwise I don't speak that much English out of school.

I: Nei. Mest enkeltord, ja?
So mostly just words here and there?

P: Ja.

Yes.

I: Er det noen grunn til at du velger engelsk, eller har du noe bevisst forhold til hvorfor du velger disse orda istedenfor norske tilsvarende?

Is there a reason for your choice of English words in these situations? Are you consciously aware of why you choose to use English words instead of their Norwegian equivalents?

P: De passer litt bedre, da, til det jeg vil si. Jeg vet ikke. Det tenker jeg egentlig ikke så mye over. Det bare kommer, på en måte.

They're a better fit for what I want to say. I don't know. I don't really think much about it. The words just come out, in a way.

Transcription of interview with participant 7 (female)

Duration: 23 minutes 10 seconds.

I: Ja, første spørsmål, det er om du kan fortelle litt om hvordan du bruker engelsk når du bruker det på fritida? Og i hvilke sammenhenger?

All right, the first question is whether you can tell me a little about how you use English in your spare time, and in which situations you use it?

P: Altså, sånn dagligdags så er det mest at jeg ser på serie eller på YouTube, og hører på musikk og sånt. Men når jeg ... Jeg har jo en vennefamilie fra Storbritannia, og når jeg er med de, så snakker jeg bare engelsk, fordi – eller, de kan bittelitt norsk, men de kan ikke sånn kjempemye norsk. Og når jeg er der om sommeren og besøker de, så snakker jeg jo bare engelsk, og da er jeg der ofte flere uker av gangen, da. Da går det bare i engelsk. Eller, de har en nabo som er norsk, så når jeg er med henne så snakker jeg norsk. Men utenom det, så er det engelsk. Og det er sånn ... I fjor, så fikk de besøk av en vennefamilie fra Norge når jeg var der, og det var sånn ... Halvveis i oppholdet mitt, da var jeg der to uker, og når de fra Norge kom, så var det rart. Da klarte ikke jeg å snakke norsk, så ...

Well, on a daily basis I mostly watch TV series or YouTube videos and listen to music and stuff. But when I ... I am friends with a family from the UK, and when I'm with them I speak English only, because – they know a little Norwegian, but not a lot. And when I'm in the UK, visiting them in the summer, I speak only English. I'm there for weeks at a time, too. Then everything's in English. That is, they have a Norwegian neighbour, and when I'm with her I speak Norwegian. Apart from that, though, I speak English. Last year, another Norwegian family also visited when I was there, and that was halfway into my stay in the UK. It was weird when they arrived, because I had trouble speaking Norwegian.

(...)

I: Ja, hvorfor ... Hva er grunnen til at du velger å se på serie og sitte på YouTube og høre på musikk, og ikke minst prate med disse britiske vennene dine?

Why do you choose to watch TV series and YouTube videos and listen to music, and of course speak to your British friends?

P: Altså, jeg hører på musikk hver dag, og, jeg vet ikke ... Altså, hvis du er i dårlig humør eller noe, så er det å høre på musikk. Og jeg hører på musikk hvis jeg går hjem fra skolen, jeg hører på musikk om morgenen når jeg dusjer. Jeg hører på musikk hele tiden, føler jeg, og det er en ting veldig mange ungdommer gjør, da. Og, altså, jeg er veldig glad i å høre på musikk. Og synge til, selv om jeg ikke er så flink til å synge selv. Og, altså, jeg ser jo på serier og sånn fordi det er gøy, og fordi hvis jeg kjeder meg, så ser jeg på serier, liksom. Eller så leser jeg litt, da.

Well, I listen to music every day, and, I don't know. If you're in a bad mood or something, you listen to music. I do it when walking from school and in the morning when I shower. It feels like I listen to music all the time, like many other teenagers. And I like listening to music and sing along, even though I'm not a good singer. I also watch TV series and stuff because it's fun, and if I'm bored. I might read when I'm bored, too.

I: Ja. Leser du noe på engelsk?

All right. Do you read anything in English?

P: Ja, jeg har lest flere bøker på engelsk, og jeg har flere hjemme som jeg må lese som jeg ikke har lest enda, som jeg venter litt med.

Yes, I've read several books in English, and I have more at home that I have to read but haven't yet. I'm holding off on it for now.

I: Når du sier «må lese», er det fordi noen har fortalt deg at du må lese det, eller er det fordi du selv–?

When you say "have to read", does that mean someone tells you that you have to read the books, or is it because–?

P: Nei, jeg har kjøpt de fordi jeg vil lese de.

No, I've bought them because I want to read them.

(...)

I: Hvordan lærer du nye ord, tenker du?

How or where do you think you learn new words, then?

P: Jeg leser jo bøker på engelsk, og hvis jeg ser på serier og har norsk tekst, og det er et ord jeg ikke helt skjønner hva de sier på engelsk, så ser jeg på den norske teksten, og da tenker jeg: «Å ja, det er *det*», liksom. Også tror jeg selv at jeg egentlig har et ganske stort vokabular. Også når jeg snakker med de fra Storbritannia, når jeg er i Storbritannia, så er det jo – da lærer jeg jo nye ord.

I read books in English, and if I watch TV series with Norwegian subtitles and there's a word I don't understand, I can look at the subtitles and think: "Oh, that's what it is". I think I have quite a varied vocabulary. And when I speak with the British people or travel to the UK, I learn new words.

I: Ja, spør du dem da hva disse orda betyr?

Do you ask them about the meaning of words you don't understand?

P: Ja, hvis det er et ord jeg lurer på, liksom, hvis ... For der nede, hvis vi ser på TV, så er det jo ikke noe norsk tekst, og hvis vi ser på TV og det kommer opp et ord jeg ikke vet hva er, så hender det jeg spør, ja.

Yes. If there's a word I don't know, then ... In the UK, there are no Norwegian subtitles on TV, so I sometimes ask if there are words I don't know.

(...)

I: Hjelper de deg med språket, annet enn når du spør hva enkeltord betyr?

Do they help you with your English even when you don't ask for the meaning of words?

P: Ja, det er sånn, hvis de hører at jeg uttaler ord feil og sånn, så kan de ofte si at: «Nei, du må ikke gjøre sånn», og så hjelper de meg med hvordan jeg skal uttale det.

Yes, if I pronounce words wrongly, for instance, they might say: "No, don't say it like that" and proceed to help me with the appropriate way of saying them.

(...)

I: Hvor tror du selv du lærer mest engelsk?

Where do you think you learn or have learned the most English?

P: I Storbritannia.

In the UK.

(...)

I: Hva med grammatikk? Hvor føler du at du lærer mest av det?

What about grammar? Where do you think you learn most of your grammar?

P: Kanskje på skolen?

In school, perhaps?

I: Og ordforrådet, det utvider du mest ...?

And your vocabulary, how or where do you expand this ...?

P: Det er, altså ... Kanskje i Storbritannia, eller når jeg ser på serie og sånt, fordi det er litt forskjellig, føler jeg.

Maybe in the UK or when I watch TV-series and stuff; different places, I think.

Transcription of interview with participant 15 (female)

Duration: 9 minutes 37 seconds.

Interviewer: Første spørsmål er om du kan fortelle litt om hvordan du bruker engelsk, kanskje først og fremst når du snakker med folk, for du har sagt at du ...?

Could you tell me a little about how you use English, and perhaps first and foremost when you talk to other people in English, as you have said that you ...?

Participant: Det er jo fordi at de jeg snakker med er jo engelske, og det er jo ikke noen andre måter å kommunisere med dem da.

It's because the people I speak with are English, so there is no other way of communicating with them.

I: Nei. Er det folk du har blitt kjent med gjennom familie, eller over internett, eller?

True. Are these people you've come to know through family, or over the Internet, or?

P: Det er ofte grupper, hvor folk jeg kjenner, og andre, bare legger til flere folk.

It's often groups where people I know, and others, just add more people.

I: Ok. Bruker dere et sosialt medium, eller ...?

Ok. Do you use a social medium, or ...?

P: Vi bruker en app som heter Discord.

We use an app called Discord.

I: Er det bare en snakke-app, eller er det en skrive-app også?

Is the app just for talking, or for writing, too?

P: Du kan både skrive og ringe og ... Ja.

It's both for writing and calling and ... Yes.

I: Hva gjør dere mest?

Which of these do you do the most?

P: Jeg, mest, skriver.

I mostly write.

I: Hender det du snakker òg?

Do you sometimes speak, too?

P: Nei. Jeg er ikke så glad i å ringe, så ...

No. I don't like calling people, so ...

(...)

I: Kan du fortelle meg hvorfor du snakker med folk og ser på YouTube og sånt – hva som er motivasjonen din, liksom, til å gjøre det?

Could you tell me why you talk to people and watch YouTube and stuff – what motivates you to do it, in a way?

P: Det når jeg snakker med folk, så er det jo fordi at det starter med at noen av mine venner legger meg til, da, for de tror jeg vil synes det er morsomt, liksom, og da bare ender jeg opp med å snakke med folk. Og når jeg ser på YouTube og sånt, så er det jo enten bare fordi jeg kjeder meg, eller fordi at jeg er veldig glad i å se på serier.

When I speak to people, it starts with some of my friends adding me, because they think I'll think it's fun, and then I just end up talking to people. When I watch YouTube, it's either because I'm bored or because I really enjoy watching TV series.

(...)

I: Hvordan lærer du nye ord?

How do you learn new words?

P: Det er jo enten at de sier ord som jeg ikke kan, eller at jeg prøver å skrive noe eller må søke opp fordi at ikke jeg vet det.

I guess it's either from other people using words I don't know, or that I try to write something and have to look up words because I don't know them.

I: Spør du de som sier noen ord da om hva det betyr, eller søker du det opp, eller ...?

Do you ever ask the people using these words what they mean, or do you look it up, or ...?

P: Av og til spør jeg. Det er litt ... Spørs om det er et ord som virker litt sånn «obvious», holdt jeg på å si. Litt, ja, kan ikke norsk.

I sometimes ask. It's a little ... It depends on whether it is a word that seems kind of obvious, in a way. A little, well, I can't speak Norwegian.

(...)

I: Hender det du gjetter ut ifra sammenhengen hva ordene betyr?

Do you ever guess the meaning of words from their context?

P: Mm. Det er ofte.

Yes. Very often.

(...)

I: Hjelper dere hverandre med språket? Du har jo sagt at du noen ganger spør andre. Hender det at andre spør deg?

Do you help each other with the language? You have said that you sometimes ask others. Do others sometimes ask you?

P: Ja, det har hendt, men da er det for det meste norske folk jeg snakker engelsk med.

Yes, it has happened, but mostly with other Norwegian people that I speak English with.

(...)

I: Hvor tror du du lærer mest engelsk?

Where do you think you learn the most English?

P: Jeg vet ikke. Kanskje når jeg ser på serier. Hvert fall å skrive det. Da ser jeg jo hele tida hvordan det skrives.

I don't know. Maybe from watching TV series. At least writing. Then I see how it's written all the time.

(...)

I: Hva med uttale? Hvor tenker du at du lærer mest av det?

What about pronunciation? Where do you think you learn that?

P: Det blir vel kanskje når jeg da ser på YouTube, hvor jeg faktisk ser på engelske ting, da.

Perhaps when I watch YouTube, where I actually watch English stuff.

I: Og grammatikk: Hvor tenker du at du har lært eller lærer mest av det?

Where do you think you have learned or learn the most grammar?

P: Jeg er litt usikker.

I'm not sure.

Appendix 10: Abbreviations and key terms

EE: extracurricular English

L1: native/first language

L2: (in this study:) second or foreign language

NSD: the Norwegian Centre for Research Data

p: probability. A p-value of 0.05 or less means that the probability of an outcome having occurred by chance is 1 in 20 or less and is considered statistically significant.

SD: standard deviation

SLA: second language acquisition

SVO: subject, verb, object

TL: target language

ZPD: Zone of Proximal Development

Online gaming: In the present study, the term ‘online gaming’ refers to digital gameplay in which the players communicate with peers in real-time. Examples of online games are *Overwatch* and *Fortnite*.

Offline gaming: Digital gameplay not involving the players communicating with peers. The games may be played online, but without communicating with anyone. Examples of offline games are *The Sims* and *Forza Horizon*.

Digital gaming: All forms of digital gameplay; single-player and multiplayer, and online and offline games.